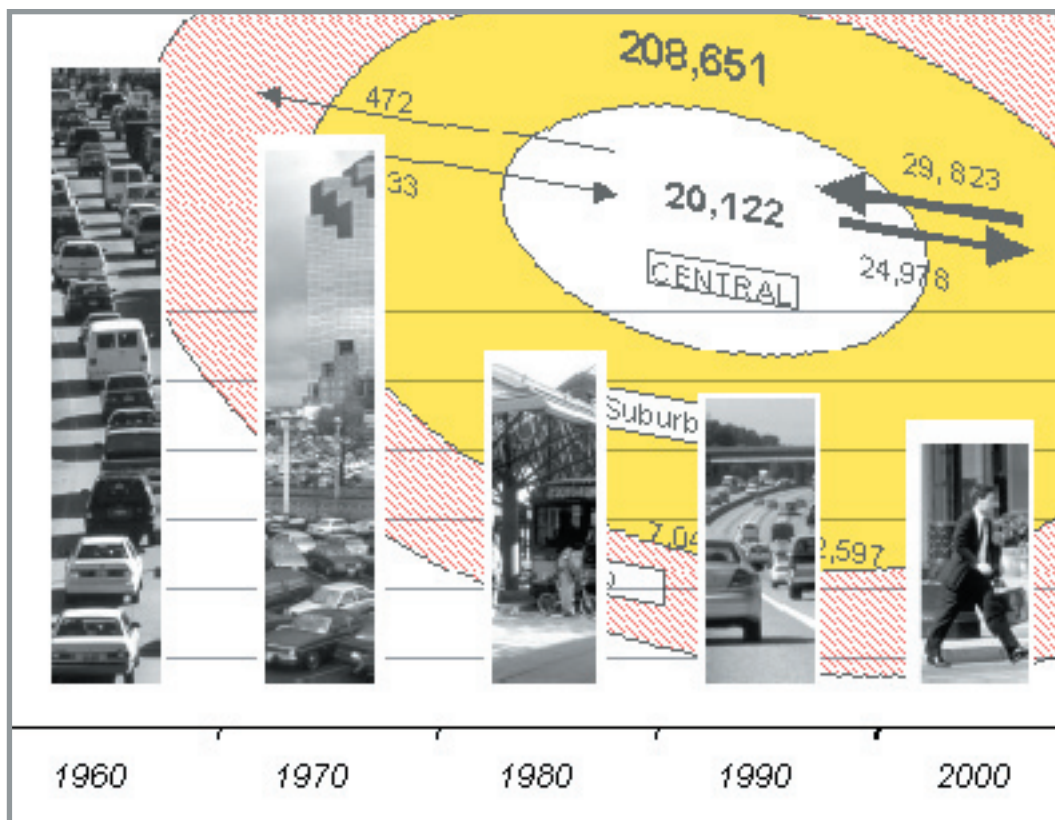


# Census Data for Transportation Planning

## Preparing for the Future

May 11–13, 2005

The National Academies Beckman Center  
Irvine, California



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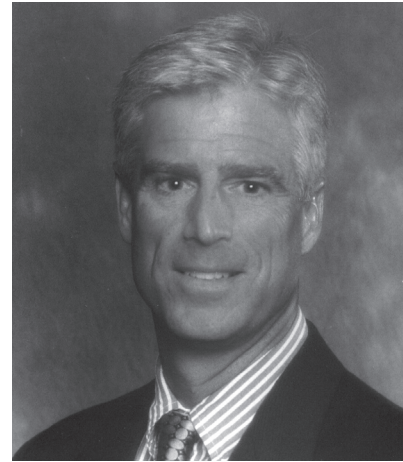
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# WELCOME

The decennial census has long provided the transportation community with critical information needed to plan and manage transportation programs—data on household and workforce characteristics and journey-to-work flows. The U.S. Census Bureau is now making the transition to an ongoing annual household survey, the American Community Survey (ACS), to collect information traditionally gathered on the census long form. This conference provides a forum to help interested parties understand how the transportation community uses the census and to evaluate how well the transition to the ACS is likely to serve transportation planning and programming processes.

The conference planning committee, working with U.S. Department of Transportation (DOT) administrations and the Census Bureau, has fashioned a strong program to enhance dialogue among transportation professionals to



**Ken Leonard**  
*Conference Chair*  
*Cambridge Systematics, Inc.*

- Assess the uses of the 2000 census data, including case studies of applications by large and small metropolitan planning organizations (MPOs), state DOTs, transit operating agencies, and the private sector;
- Review the current plans for the ACS and assess its usefulness for transportation programs;
- Review ACS-related transportation research;
- Review and assess future transportation data needs and recommend improvements of census methodology and products; and
- Recommend actions that federal, state, and regional agencies can take to improve transportation agency use of current census products.

Thank you for your participation in this important event.

—*Ken Leonard*

May 11-13, 2005

# CONFERENCE PLANNING TEAM

## CHAIR

Kenneth J. Leonard, *Cambridge Systematics, Inc.*

## MEMBERS

John S. Adams, Professor, *University of Minnesota*

Dunbar Brooks, *Baltimore Regional Transportation Board*

Ken Cervenka, Program Manager, Travel Forecasting, *North Central Texas Council of Governments*

George T. Duncan, Professor of Statistics, *Carnegie Mellon University*

Konstadinos G. Goulias, Professor, *University of California, Santa Barbara*

Thomas Kane, Executive Director, *Des Moines Area Metropolitan Planning Organization*

Paul Ong, Professor/Director, *The Ralph & Goldy Lewis Center for Regional Policy Studies, University of California, Los Angeles*

Alan E. Pisarski, *Consultant*

Steven E. Polzin, Director, Public Transit Research, *University of South Florida*

Charles L. Purvis, Senior Transportation Planner/Analyst, *Metropolitan Transportation Commission*

Jeff Tayman, Director of Technical Services, *San Diego Association of Governments*

Mary Lynn Tischer, Advisor to the Governor on Transportation Reauthorization, *Virginia Department of Transportation*

## LIAISONS

William Bannister, *Bureau of Transportation Statistics*

Ed Christopher, *Federal Highway Administration*

David Clawson, *American Association of State Highway and Transportation Officials*

Ron Fisher, *Federal Transit Administration*

Lawrence McGinn, *Bureau of the Census*

Elaine Murakami, *Federal Highway Administration*

John Neff, *American Public Transportation Association*

Phillip A Salopek, *Bureau of the Census*

Richard A. Weaver, *American Public Transportation Association*

Edward Weiner, *U.S. Department of Transportation*

## STAFF

Thomas M. Palmerlee, *Transportation Research Board*

Brian Canepa, *Transportation Research Board*

# CENSUS DATA FOR TRANSPORTATION PLANNING CONFERENCE

WEDNESDAY, MAY 11, 2005

7:30 a.m.

**Continental Breakfast**—*Dining Room*

8:00 a.m.

*Session 1—Auditorium*

**Introduction and Charge to Conference**

## **Welcome and Conference Objectives**

*Kenneth J. Leonard, Cambridge Systematics, Inc., Conference Chair*

## **Census Bureau Tools for Transportation**

*Jay Waite, Associate Director for Decennial Census, U.S. Census Bureau*

The conference opens with a general overview of the plans for reengineering the 2010 Census. It will include a description of the ACS, an update on the funding and operational plans for the 2010 Census, and a discussion of how these plans affect the transportation community.

## **Transportation Policy Perspective**

*George E. Schoener, Deputy Assistant Secretary for Transportation Policy, U.S. Department of Transportation*

The transportation community faces many challenges for which solid data will be needed to develop transportation policy options and programs. In the past, the DOT has had a successful partnership with the Census Bureau in collecting some of these data. In the future, the DOT expects to continue this partnership to evaluate past data and make improvements to ensure that the ACS provides useful data to address transportation issues at the federal, state, and local levels.

## **State Department of Transportation Perspective**

*Deb L. Miller, Secretary, Kansas Department of Transportation*

Chair of the American Association of State Highway and Transportation Officials' Standing Committee on Planning and a former planning director, Secretary Miller will stress the importance of census data for developing transportation programs for state DOTs and their MPO partners. She will challenge participants to develop approaches to meet the data needed for transportation's evolving needs.

The National Cooperative Highway Research Program (NCHRP) has provided funding for commissioned resource papers for the conference.

May 11–13, 2005

9:30 a.m.

**Break—Atrium**

10:00 a.m.

*Session 2—Auditorium*

**Using Census Data for Transportation**

*Ken Cervenka, North Central Texas Council of Governments, presiding*

This session focuses on the importance of an accurate worker count and on how work travel relates to daily travel patterns. Experiences with the use of national censuses from other countries are also explored. Following a discussion period and overview of the poster session, the charge for the breakout workshops will be announced.

**[It's All About the Workers: The Importance of Comprehensive Worker Counts](#)**

*Alan E. Pisarski, Consultant*

Transportation's central element of interest in the census journey-to-work data set is the worker, including that worker's characteristics and behavior. Given that, getting the count and characteristics of workers right is essential. This presentation examines potential gaps in our knowledge of the workforce. It explores future alternatives to improve the breadth and depth of our knowledge about workers.

**[Improving the Quality of Labor Force Estimates from the American Community Survey by Measuring and Understanding the Differences Between the Labor Force Estimates of Census 2000 and the American Community Survey and Those of the Current Population Survey](#)**

*Thomas J. Palumbo, Chief, Labor Force and Transfer Program Statistics, Housing and Household Economic Statistics Division, U.S. Census Bureau*

Census 2000 tended to underestimate employment and to overestimate unemployment relative to the Current Population Survey (CPS), which is generally considered to be the standard of quality for household-survey estimates of employment status. To a lesser but still significant degree, the same tendency marks the relationship between the CPS and the ACS, whose methods of measuring the labor force are closely patterned after those of Census 2000. This presentation gives an overview of the differences, the research findings on their causes, and the steps being taken to improve the ACS data. The presentation describes the results of the work of the Census Bureau, in collaboration with other government agencies, to develop an improved set of questions, which the Census Bureau plans to include in the 2006 content test for the ACS, and, if those questions are successful, to implement in the 2008 ACS.

**[The Journey to Work in the Context of Daily Travel](#) (Sides) (Full Paper)**

*Nancy McGuckin, Travel Behavior Analyst*

While work trips are declining as a share of all trips, the journey to work still appears to be a key factor for understanding overall travel behavior. This summary of a commissioned paper reviews the role of the work trip in the context of daily travel and examines future relevancy of the continuation of the journey-to-work questions in the ACS for tabulations of census small-area flows.

**International Experience in Journey-to-Work Data from National Censuses (Sides) (Full Paper)**

*Ram M. Pendyala, University of South Florida*

This summary of a commissioned paper documents census experiences from other countries. Experiences of transportation analysts and survey researchers from these countries provide valuable background for a discussion about approaches in the United States.

**Discussion**

**Rapporteur of Application Posters (Sides) (Full Paper)**

*Ed Christopher, Federal Highway Administration*

This presentation provides a “road map” to help conferees navigate through the posters. Many of the questions and discussions surrounding the ACS deal with the use and application of the data. The poster session is designed to provide attendees with a common understanding of the breadth of census applications in the transportation community and to stimulate discussion.

**Charge to the Breakout Workshops**

*Kenneth J. Leonard, Cambridge Systematics, Inc., Conference Chair*

12:00 noon

**Lunch**—*Dining Room*

12:45 p.m.

*Session 3—Atrium*

**Application Poster Session**

The poster session addresses the census data used in the application, the way they were used, the value created, and the problems or issues encountered. Among the types of applications are descriptive analysis and reporting, GIS analysis, travel modeling and microsimulation, public involvement, and special studies, such as transit service planning and emergency preparedness planning.

**1. The PUMS and IPUMS of the 2000 Census**

*Edreece Azimi, Virginia Department of Transportation*

**2. ACS Data in the Analysis of Race and Ethnicity—Specific Travel Behavior**

*Joost Berman and Siim Soot, University of Illinois at Chicago*

**3. Florida Journey to Work GIS Website**

*Martin Catala, University of South Florida*

**4. Comparison of 2000 JTW Census Data, Gravity Model, and O-D SMARTRAQ Travel Survey in the Development of the Distribution Model**

*Laura Chen and Guy Rousseau, Atlanta Regional Commission*

May 11-13, 2005

5. **Smart Moves: Utilizing Census Data for Transit Planning**  
*Caitlin Cottrill, Mid–America Regional Council*
6. **Environmental Justice for Long-Range Regional Transportation Plans: Using Census Data to Target Communities of Concern**  
*Rachel Gossen, Metropolitan Transportation Commission*
7. **TriMet’s Transportation Investment Plan (TIP): Ensuring Transit Equity with the U.S. Census**  
*Ida Hardin, Tri–County Metropolitan Transportation District of Oregon*
8. **Using the American Community Survey to Monitor the State of the System**  
*Shimon Israel, Metropolitan Transportation Commission*
9. **How Census 2000 and Census Transportation Planning Package (CTPP) 2000 Data Helped Us in the Use of Regional Travel Demand Forecast Model**  
*Sharon Ju, Houston–Galveston Area Council*
10. **Adding a Land Use Class Dimension to Correct, Improve, and Enlarge Employment Data in the ACS**  
*Edward Limoges, Consultant*
11. **Comparing Decennial Flow Data to Place of Work Data from the Local Employment Dynamic Program**  
*Wende Mix, Buffalo State College*
12. **Synthesizing Parcel-Level Households Using Census 2000 Data**  
*Delores Muller, Southeast Michigan Council of Governments*
13. **A Compendium of 2000 Census Commute Analyses for the Hampton Roads Region**  
*Andrew Pickard, Hampton Roads Planning District Commission*
14. **Getting Around Rounding and Suppression Issues with CTPP**  
*Kristen Rohanna, San Diego Association of Governments*
15. **Enhanced Inputs for Travel Demand Modeling: Using American Community Survey (ACS) with Land Cover Data**  
*Saket Sarraf, Varkki George Pallathucheril, Zhanli Sun, and Brian Deal, University of Illinois at Urbana Champaign*
16. **Size Matters: Using Census Block, Block-Group and Tract Polygons in Transit Planning**  
*Jesse Simon, Los Angeles County Metropolitan Transportation Authority*



**17. Disclosure and Utility of Census Journey-to-Work Flow Data from the American Community**

*Nandu Srinivasan and Ed Christopher, Federal Highway Administration*

**18. Using Census Data to Develop a New Kentucky Statewide Traffic Model**

*Kenneth Walker, Wilbur Smith Associates, and Amy Thomas, Kentucky Transportation Cabinet*

**19. Using Census Data to Examine the Pedestrian Friendliness of the Built Environment**

*Hannah Young and Daniel Rodriquez, University of North Carolina, Chapel Hill*

**20. Evaluation of CTPP 2000 for the Delaware Valley Region**

*Thabet Zakaria, Delaware Valley Regional Planning Commission*

1:30 p.m.

*Session 4—Breakout Rooms*

**Workshop on Census 2000 Applications: What Worked and What Didn't Work**

The poster session and an NCHRP project have documented census data uses. Census data products most used by the transportation community following Census 2000 include Summary File 3, CTPP 2000, and Census 2000 Public Use Microdata Sample (PUMS). The Census Bureau also conducted a test of the ACS in two ways: a national survey in 1,200 counties, sometimes called the supplemental survey, and a test in 36 counties to test small geographic reporting (tracts). These small breakout sessions are devoted to sharing information on the data: use, applications, and problems and benefits.

3:30 p.m.

**Break—Atrium**

4:00 p.m.

*Session 5—Auditorium*

**Transitioning to the ACS**

*Paul Ong, University of California, Los Angeles, presiding*

This panel discusses the operational plans for the ACS, how it will replace the decennial long form, and the general timetable for collecting and disseminating ACS data. The list of topics includes sample selection, the trimodal data collection system, questionnaire design, data processing and coding, statistical weighting and estimating, and data products. The session also covers new opportunities for the transportation community that current and timely annual data present.

**[Status Report on the Operations and Plans for the ACS](#)**

*Lawrence McGinn, Chief of the American Community Survey Office, U.S. Census Bureau*

This presentation will provide a short overview of the ACS, especially the data collection and general processing.

May 11-13, 2005

### **Sample Design, Estimation, and Weighting in the ACS**

*David Hubble, Assistant Division Chief, Demographic Statistical Studies Division, U.S. Census Bureau*

Hubble will provide a general overview of the statistical aspects of the survey. He will explain the sample selection, including the oversampling for nonresponse, the statistical weighting, and the estimation procedures.

### **ACS Data Products for Use in Transportation Planning**

*Phillip Salopek, Chief, Journey to Work and Migration Statistics Branch, U.S. Census Bureau*

This overview will emphasize the differences between the ACS data products and the Census 2000 products.

### **Overview of the Local Employment Dynamics (LED) Program at the U.S. Census Bureau**

*Jeremy Wu, Project Manager, LED Program, Demographic Surveys Division, U.S. Census Bureau*

Wu will preview the LED presentation in Session 8.

5:30 p.m.–6:30 p.m.

**Reception**—*Fountain Courtyard*

## **THURSDAY, MAY 12, 2005**

8:00 a.m.

**Continental Breakfast**—*Dining Room*

8:30 a.m.

*Session 6—Auditorium*

### **Issues and Usage of the ACS for Transportation**

*George T. Duncan, Carnegie Mellon University, presiding*

This session presents the results of several research projects involving current or future use of census data for transportation.

### **Learning to Use the ACS for Transportation Planning: Key Concepts and Potential Products**

*Kevin Tierney, Cambridge Systematics, Inc.*

NCHRP initiated a project that will be nearing completion by conference time: to develop a practitioner guidebook for incorporating ACS data into the transportation planning processes at national, state, metropolitan, and local levels. The guidebook will evaluate ACS data and products and demonstrate their uses within a wide range of transportation planning applications. This presentation, by the principal investigator, summarizes key results of the study.

## **Confidentiality Issues Related to Transportation Industry Use of Census Data**

*David Banks and Jerry Reiter, Institute of Statistics and Decision Sciences, Duke University*

This summary of a commissioned paper reviews the disclosure-avoidance process applied to CTPP 2000 and PUMS and recommends suitable approaches for further research leading to increased usefulness for the transportation user community while satisfying the confidentiality requirements of the Census Bureau. Specifically, the research addresses methods for quantifying and assessing confidentiality-disclosure risk for small-area data, especially when multiple years of data are required for small-area reporting. It also explores methods for constructing synthetic data files that would be useful to transportation researchers.

## **Impacts of Sample Sizes in the ACS (Sides) (Full Paper)**

*Ronald William Eash, Northwestern University*

This summary of a commissioned paper reviews some “What if” scenarios, including reduced congressional funding and increased field nonresponse follow-up, that would affect sample sizes that could be achieved and compares the results to decennial long-form sample sizes. Other alternatives to be considered are the accumulation of more than 5 years of data for small areas, the usefulness to the transportation community of home-to-work flow tabulation from ACS if the geographic unit is limited to tract to tract or tract group to tract group, and evaluation of the benefits of annual data for large geographic units versus the value of the small-area tabulation.

## **The Census ACS and the New Generation of Travel Models (Sides) (Full Paper)**

*Debbie A. Neimeier, University of California, Davis*

This summary of a commissioned paper discusses the plans for the ACS PUMS and the potential advantages and disadvantages of the ACS data, on a continuous basis, for tour-based transportation-demand models, and for transportation microsimulation. Topics include workplace geocoding, level of geographic reporting available in the PUMS, and ways of using the basic journey from home to work in a tour-based model in combination with other sources of additional data on stops made to and from work.

## **Discussion**

10:00 a.m.

**Break**—*Atrium*

10:30 a.m.

*Session 7—Breakout Rooms*

## **Workshop on Participant Reactions to the ACS**

On the basis of partial implementation of the ACS, the Census Bureau has released many annual data products for large geographic areas e.g., states, large metropolitan areas, and some counties and places. In addition, the Census Bureau has released many evaluation reports comparing the results of data from the ACS with results from the Census 2000 long form. The Census Bureau

May 11–13, 2005

has been working with federal agencies and data users on the methodology and data products from the ACS for 10 years and now has implemented the ACS program fully. This series of small breakout groups presents the opportunity for transportation users to offer suggestions for improving the ACS.

12:30 p.m.

**Lunch**—*Dining Room*

1:30 p.m.

*Session 8—Auditorium*

**Supplements and Complements to ACS: Federal and Local**

*Paul Ong, University of California, Los Angeles, presiding*

The panel discusses alternative data sources that can complement and supplement data from the decennial census and ACS. The types of data include satellite and other aerial imagery of the transportation system and land use, traffic counts, household surveys of travel behavior, onboard survey of transit riders, and administrative data on transit performance and coverage. The sources include local, state, and federal data collected by traditional and advance technologies. The three presentations cover, first, an overview of the types of available data and their use by MPOs; second, a case study of local data that is based on the experience of a single MPO; and third, a case study of national data that is based on the use of Local Employment Dynamics (LED) data to identify the spatial patterns of primary and secondary jobs by place of residence and place of work.

**Case Study of SANDAG Data Usage**

*Bill McFarlane, San Diego Association of Governments (SANDAG)*

This case study covers some of the strengths and weaknesses of census transportation and demographic data relative to other sources of data that are used to provide transportation model inputs, calibrate model parameters, and validate model results. The presentation identifies some of the challenges of reconciling differences between these data sources so that an integrated database can be developed.

**Case Study of Using LED to Measure Primary and Secondary Jobs**

*Jeremy Wu and Julia Lane, U.S. Census Bureau*

This presentation provides a case study of national data that is based on the use of a new database from the LED program (<http://lehd.dsd.census.gov>). It examines the potential for these data to identify the spatial patterns of primary and secondary jobs by place of residence and place of work, as well as the related spatial patterns of hires and separations.

2:30 p.m.

**Break**—*Atrium*

3:00 p.m.–5:00 p.m.

*Session 9—Breakout Rooms*

### **Workshop on Products and Availability**

The prospect of accessing ACS data on an annual basis represents a great leap forward in data availability for transportation planning. Products from the ACS could potentially include CTPP-like products that were previously available only every 10 years. The utility of these much-anticipated data products could be compromised or minimized by a set of as-yet-unresolved content, data processing, and data distribution issues. Some of the recurring issues that need resolution include dealing with the large volume of data that will be accessible annually; the potential impact of strict Census Bureau disclosure restrictions, especially on small-area data; and understanding how to use moving averages from the annual releases. This series of breakouts investigates these issues and makes suggestions for improvements.

### **FRIDAY, MAY 13, 2005**

7:15 a.m.

**Continental Breakfast**—*Dining Room*

8:00 a.m.

*Session 10—Auditorium*

### **Reports from Workshops**

*Kenneth J. Leonard, Cambridge Systematics, Inc., presiding*

- **Census 2000 Applications: What Worked and What Didn't Work**  
*Ken Cervenka, North Central Texas Council of Governments*
- **Participant Reactions to the ACS**  
*Chuck Purvis, Metropolitan Transportation Commission, Oakland*
- **Products and Availability**  
*Dunbar Brooks, Baltimore Metropolitan Council*

9:30 a.m.

**Break**—*Atrium*

10:00 a.m.–11:00 a.m.

*Session 11—Auditorium*

### **Key Points from Conference Panel and General Discussion**

*Kenneth J. Leonard, Cambridge Systematics, Inc., presiding*

Panelists

*George T. Duncan, Carnegie Mellon University*

*Alan E. Pisarski, Consultant*

*Steven E. Polzin, University of South Florida*

May 11–13, 2005

## Complimentary Shuttle Schedule

Hyatt Regency Newport Beach Hotel–Beckman Conference Center		
Date	Hotel Pick-Up	Beckman Center Pick-Up
Wednesday, May 11	6:30 a.m. & 7:00 a.m.	6:15 p.m. & 6:45 p.m.
Thursday, May 12	7:00 a.m. & 7:30 a.m.	5:00 p.m.
Friday, May 13	6:30 a.m. & 7:00 a.m.	11:00 a.m.

### Mobile Phone Manners



As a courtesy to other attendees, please observe good mobile phone manners. When attending meetings and in the public areas adjacent to these activities, please turn off your cell phones and other wireless communications devices or use the silent notification options. Thank you for your cooperation.

### Accessibility



TRB uses only facilities and vendors that comply with the Americans with Disabilities Act.

### Beckman Center Information

Beckman Center  
100 Academy  
Irvine, CA 92612-3002  
Phone: 949-721-2200  
Fax Number: 949-721-2288

The Beckman Center has publicly available copiers, fax machines, and Internet-capable computers. Wireless Internet is available in all the meeting and dining rooms.

### Hotel Information

Hyatt Regency Newport Beach Hotel  
1107 Jamboree Road  
Newport Beach, CA 92660  
Phone: 949-729-1234  
Fax: 949-759-3253

## **Upcoming TRB Events**

July 8–9, 2005

### **Commodity Flow Survey (CFS) Conference**

Boston, Massachusetts

<http://www.TRB.org/Conferences/CFS>

July 10–12, 2005

### **TRB 2005 Summer Conference**

Boston, Massachusetts

<http://www.TRB.org/Conferences/JointSummer/>

November 1–3, 2005

### **6th National Conference on Transportation Asset Management: Making Asset Management Work in Your Organization**

Kansas City, Missouri

<http://gulliver.TRB.org/conferences/Asset/>

December 8–9, 2005

### **Data Requirements in Transportation Reauthorization Legislation: What Is Included and What Are the Impacts on the Data Community?**

Washington, D.C.

January 22–26, 2006

### **TRB 85th Annual Meeting**

Washington, D.C.

June 4–7, 2006

### **North American Travel Monitoring Exposition and Conference (NATMEC)**

Minneapolis, Minnesota

<http://www.natmec.org>



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