Transportation for Livable Communities

Charting a Research Agenda

October 18–19, 2010

The Keck Center of the National Academies, Washington, D.C.

Sponsored by
Research and Innovative Technology Administration
U.S. Department of Transportation


See Back for Map of Keck Center

Planning Committee

Lisa Aultman-Hall, Director, University of Vermont Transportation Research Center, Chair
Diana J. Bauer, Policy Analyst, U.S. Department of Energy
Roderick B. Diaz, Planning Manager, Los Angeles County Metropolitan Transportation Authority
Robert Dunphy, Transportation Consultant; Emeritus Fellow, Urban Land Institute
Susan L. Handy, Professor, University of California, Davis
Gabe Klein, Director, District Department of Transportation

Shawn Turner, Senior Research Engineer, Texas Transportation Institute (TTI)
Martin Tuttle, Deputy Director, Planning and Modal Programs, California Department of Transportation

Liaisons from Research and Innovative Technology Administration (RITA)
Curtis J. Tompkins
Robin Kline
Thomas G. Bolle
The transportation system plays one of the key roles in creating livable communities. Transportation systems that create livability work with land use to give everyone multiple travel choices for meeting their daily needs affordably, safely, conveniently, and efficiently. This conference focuses on common goals for researchers, planners, and implementers of transportation projects: the need for better definition, data, interdisciplinary models and metrics. Also considered will be the unique role university transportation centers (UTCs) can play in accomplishing the research agenda necessary to advance transportation for livable communities.

Conference attendees and panelists will actively engage to consider case studies, research needs, and the challenges of incorporating livability into transportation programs and projects. Implementers of livability projects are invited to join faculty, students, and other researchers from UTCs and other universities to explore transportation approaches for livable communities. Together, based on expert panels and facilitated discussion, attendees will chart a future research agenda, which will be disseminated by the planning committee and others.

As the guiding principle for transportation planning in the 21st century, livability means transportation systems that are guided by a complex set of principles:

- Providing more transportation choices;
- Expanding access to affordable housing, particularly housing located close to transportation alternatives;
- Enhancing economic competitiveness—giving people access to jobs, education, and services as well as giving businesses access to markets;
- Targeting public funding toward existing communities to spur revitalization, including protection of rural landscapes;
- Increasing collaboration among all stakeholders—including federal, state, and local government—to better target investments;
- Recognizing that many unique and diverse livable communities lie within rural, suburban, and urban areas; and
- Helping create quality places.

Research has provided important data and methods that form a basis for changes that align practice more closely with these principles. But more research is needed; and where practice has often pushed ahead of research, a need for rigorous evaluation of both successes and failures is called for. A rich focused dialogue between researchers and practitioners will contribute to the development of a research agenda directed toward achieving livability.

—Lisa Aultman-Hall

*Conference Planning Team Chair*
*University of Vermont*
Monday, October 18

7:30 a.m.–8:30 a.m., Keck 109
Breakout Group Leaders Meeting (invitation only)

7:45 a.m.–8:30 a.m., Served Outside Keck 100 and on 2nd Floor Landing
Breakfast
(Seating with tables also available in Keck 101 and 3rd Floor Atrium)

8:30 a.m.–10:30 a.m., Keck 100 (Overflow seating for Keck 100 will be located in Keck 101)
Opening Session
Lisa Aultman-Hall, Director, University of Vermont Transportation Research Center, presiding

Developing a Working Definition of Livability
Lisa Aultman-Hall, Director, University of Vermont Transportation Research Center

The conference will start with a group exercise to develop a working definition of transportation systems for livable communities.

Welcome
Peter H. Appel, Administrator, Research and Innovative Technology Administration

A U.S. DOT Vision of Transportation for Livable Communities
Beth Osborne, Deputy Assistant Secretary for Transportation Policy, U.S. Department of Transportation

10:30 a.m.–11:00 a.m., Served Outside Keck 100 and on 2nd Floor Landing
Break
(Seating with tables also available in 3rd Floor Atrium and Keck 101)

11:00 a.m.–12:30 p.m., Keck 100 (Overflow seating for Keck 100 will be located in Keck 101)
Integrating Transportation and Livability: Perspectives from Practitioners
Roderick B. Diaz, Planning Manager, Los Angeles County Metropolitan Transportation Authority, presiding

Implementing transportation systems to support livability involves multiple entities, agencies, and stakeholders. The challenges to making places more livable most often reflect the need for integration—integration of different sensibilities (transportation, land use, development) in system design; integration of planning processes and work efforts; and integration of actual transportation facilities and services. In addition to discussing particular physical and planning challenges, each speaker will discuss institutional issues that arise in addressing those challenges.

Integrating Transportation with Land Use and Development Plans
Joseph Alfandre, President, Joseph Alfandre Homebuilding Company and the Kentlands Company

Prioritizing Physical Space
Marcy McInelly, Associate Principal, SERA

Balancing Transit and Alternative Modes for Livability
Gabe Klein, Director, District Department of Transportation

12:30 p.m.–1:30 p.m., Served Outside Keck 100 and on 2nd Floor Landing
Lunch
(Seating with tables also available in 3rd Floor Atrium, Keck 101 and 208)

1:30 p.m.–3:00 p.m., Keck 100 (Overflow seating for Keck 100 will be located in Keck 101)
Livability Research Across Disciplines
Diana J. Bauer, Policy Analyst, U.S. Department of Energy, presiding

This panel will present livability case studies illustrating methods and results from several different disciplinary perspectives, touching on drivers and motivators, models, and co-benefits of livability. The session will provide new food for thought for transportation professionals as well as illustrate the complex interplay among diverse factors that set the context for designing livable communities.
What Would a Livable—and Intergenerational—Community Really Look Like?
Sandra Rosenbloom, Professor, University of Arizona

Livability and Active Transportation
Angie Cradock, Research Scientist, Deputy Director, Harvard Prevention Research Center, Harvard University

Metropolitan Accessibility and Transportation Sustainability
Jonathan Levine, Academic Program Chair and Professor of Urban Planning, University of Michigan

Harnessing Co-benefits of Urban Adaption to Climate Change
Matthias Ruth, Roy F. Weston Chair of Natural Economics Professor and Director, University of Maryland

3:00 p.m.–3:30 p.m., Served Outside Keck 100 and on 2nd Floor Landing
Break

3:30 p.m.–5:00 p.m., Keck 100 (Overflow seating for Keck 100 will be located in Keck 101)
Research on Transportation for Livable Communities: Recent Findings and Research Needs
Shawn Turner, Senior Research Engineer, Texas Transportation Institute, presiding

Several presentations will focus on how community and street design affects safety, traveler behavior, and trip-making characteristics. The topic of measuring livability will be addressed, and quantitative metrics will be discussed as a way to measure progress toward livable communities. The concluding speaker will discuss how research findings are being implemented through the update of various planning and design guidelines and manuals.

The Impact of Community Design on Traveler Behavior
Susan L. Handy, Professor, University of California, Davis

Measuring Livability: How Do We Measure Progress and Success?
Harvey J. Miller, Professor, Department of Geography, University of Utah

Rewriting the Playbook: Updating Traffic Engineering and Planning Manuals to Reflect Livability Principles
Reid Ewing, Professor, Department of City and Metropolitan Planning, University of Utah

Looking Ahead to Tuesday’s Breakout Groups

5:00 p.m.–6:30 p.m., 3rd Floor Atrium
Poster Session and Reception

Promises and Pitfalls of Senate Bill 375 as a Model for Regional Planning Coordination
Elisa Barbour and Elizabeth Deakin, Department of City and Regional Planning, University of California, Berkeley

Penny Wise, Pound Fuelish: New Measures of Housing and Transportation Affordability
Scott Bernstein, Bridget Torres, and Maria Choco Urban, The Center for Neighborhood Technology

Freight and Livability: Does Economic Sustainability Still Matter for Transportation Decision Making?
Jason Bittner, University of Wisconsin–Madison, National Center for Freight and Infrastructure Research and Education; Josh Levine, University of Wisconsin

Four Decades of Planning for Livable Communities: Insights from Freiburg, Germany
Ralph Buehler, Urban Affairs and Planning Department, Virginia Tech University

TOD 3.0: Aligning Partners in Real Estate Development and Transit Implementation
Ian Carlton, Private Consulting; Will Fleissig, Communitas Development

Reversing Urban Sprawl: A Reclaimability Approach to Reviving Downtown Brownfields
Maria Chrysochoou, Norman Garrick, Kweku Brown, and Geeta Dahal, University of Connecticut

Real-Time Ridesharing for Livable Communities
Jason Conley, Avego Corporation
The Strategy of Alternative Fuels for Urban Transit: Phase 1: Life-Cycle Assessment of Alternative Fuel Buses
Elaine Croft McKenzie and Pablo Durango-Cohen, Northwestern University

Understanding the Impact of Different (and New) Housing Choices on Older Adults' Mobility in the Community
Lisa D'Ambrosio, Philipp Osl, Dick Myrick, and Joseph Coughlin, MIT AgeLab and New England University Transportation Center

Implementation of Active Living Policies by Land Use and Transportation Agencies
Jennifer Dill, Oregon Transportation Research and Education Consortium, Portland State University; Deborah Howe, Temple University

Urban Design Strategies for Integrating Safety and Livability
Eric Dumbaugh, Texas A&M University; Robert Rae, Kimley-Horn and Associates, Inc.

Multimodal Corridors: Making Transit and Nonmotorized Modes Work in Highway Corridors
Christopher Ferrell and Michael Carroll, Dowling Associates, Inc.; Herbert Levinson, Herbert Levinson Consulting

Rating Urban Street for Pedestrian Facilities Based on User's Perception
Aimee Flannery, George Mason University; Asma Ali, T3 Design; Cerasela Cristei, Dewberry and Davis

Multiobjective Optimization Model for Complete Street Design
Aimee Flannery, George Mason University; Cerasela Cristei, Dewberry and Davis

The Pedestrian and Bicycling Survey (PABS) Approach
Ann Forsyth, Cornell University; Kevin Krizek, University of Colorado; Asha Weinstein Agrawal, San Jose State University

ITNAmerica: Network Connectivity Through Social Enterprise and Information Technology
Katherine Freund, Alan Fried, and Jackie Vine, ITNAmerica; Richard Fortinsky, University of Connecticut Center on Aging

Effectiveness of Traffic Calming for Speed Management to Enhance Safety and Quality of Life in Small Rural Communities
Shauna Hallmark and Neal Hawkins, Iowa State University

Programs That Match Seniors with Volunteer Drivers
Sara Hendricks, Center for Urban Transportation Research, University of South Florida

Using Open Data to Develop Multimodal Trip Planners for Livable Communities
Edward Hillsman and Sean Barbeau, Center for Urban Transportation Research, University of South Florida

Issues in Data Collection, Methodology, and Analysis of Transportation-Based Economic Development: The District of Columbia and the Great Streets Development
Christopher Hooton and Peggy Tadej, District of Columbia Department of Transportation

Effect of Roadway and Roadside Design Features on Observed Vehicle Speeds
John Ivan, University of Connecticut

The Cast Walkability Audits: A Citizen-Powered Neighborhood Assessment of Walking and Biking Safety
Deborah Johnson-Shelton and Jason Blair, Oregon Research Institute; Christo Brehm, University of Oregon

Eagle River (Alaska) Central Business District and Residential Core Study: A Case Study of Applied Livability Principles
Gary Katsion, Phill Worth, and Chris Tiesler, Kittelson & Associates, Inc.; Vivian Underwood, Municipality of Anchorage

Lower Don Lands Waterfront Redevelopment
Tessa Knox-Grant and Varanesh Singh, Arup
Driving Smart: Car2Go in Austin and Beyond  
Katherine Kortum, University of Texas at Austin

How to Define Community Context and Translate the Information into Indicators to Evaluate Different Transportation Solutions  
Leigh Lane and Ann Hartell, Center for Transportation and the Environment, North Carolina State University

Yes, They Do Walk in Suburbia: Suburban Multifamily Housing and Trips to Strips  
Nico Larco, University of Oregon

What Makes a “Complete Street” Complete? Defining Completeness Based on Context and Public Participation  
Mike Lowry and Mike Dixon, National Institute for Advanced Transportation Technology, University of Idaho; Kevin Kingsbury, University of Idaho

Effect of Suburban Transit-Oriented Developments on Residential Property Values  
Shishir Mathur, San Jose State University; Christopher Ferrell, Dowling and Associates

Implementing Complete Streets: Lessons Learned  
Barbara McCann, National Complete Streets Coalition; Suzanne Rynne, American Planning Association

Green Modes of Transportation for the Delivery of Fast Food in Connecticut’s Mixed-Use Developments  
Peter Miniutti, University of Connecticut

Value of Transit: Paying for Place-Making  
Abigail Osei-Asamoah, Nicholas Lownes and Garrett Bolella, University of Connecticut

Sustainable Public Transit Investments: Increasing Nonmotorized Access and Multiple Trip Type Usage  
Laurel Paget-Seekins, Georgia Institute of Technology

Methodology for Citing an Intermodal Transit Facility in the Upper Valley Region of Vermont and New Hampshire  
David Saladino, Resource Systems Group

Performance Measures for Complete Streets: Measuring Pedestrian and Bicyclist Safety and Mobility in California  
Rebecca Sanders and Jill Cooper, Safe Transportation Research and Education Center, University of California, Berkeley; Alia Anderson, University of California, Berkeley

“Fix This Tool”: Empowering Citizens to Spatially Assess their Active Transportation Environment  
Marc Schlossberg, Ken Kato, Christo Brehm, and Dana Maher, University of Oregon

Universities as Catalysts for Retrofitting Communities Toward Livability: The Sustainable Cities Initiative  
Marc Schlossberg and Nico Larco, Sustainable Cities Initiative

Moving from “Complete Streets” to “Complete Communities”: A Study of Customer Mode Choice at 20 San Francisco Bay Area Retail Pharmacy Stores  
Robert Schneider, University of California, Berkeley

Neighborhood Walking  
Reginald Souleyrette and Mike Martello, Iowa State University

New Approaches to Quantifying Livability Using State-of-the-Art Survey and Analysis Methods  
Greg Spitz, Elizabeth Greene, and Margaret Campbell, Resource Systems Group

How to Define and Measure Livability Factors  
Elizabeth Sanford, Cambridge Systematics

Bicycling and Transit—A Marriage Unrealized  
Eric Stonebraker and Kevin Krizek, University of Colorado Denver
Highway 92 Corridor Livable Centers Initiative: A Case Study in Implementing Viable, Livable Multimodal Networks
Kevin Tilbury, Gresham, Smith & Partners

Coordinating Accessibility, Mobility, and Livability in Rural Communities: What Works?
Hannah Twaddell, Renaissance Planning Group

District Policies as Barriers to Walking and Bicycling to School
Leigh Ann Von Hagen, Alan M. Voorhees Transportation Center at Rutgers, The State University of New Jersey

A Travel Demand Forecasting Framework for Assessing Smart Growth Strategies
Qian Wang and Peng Su, University at Buffalo, State University of New York

Achieving Transit-Friendly Development in Chicago: Station Area Typology
David Whyte, Kimley-Horn and Associates, Inc.

Methodology for Assessing and Reporting the Impacts of Transit Investment on Community Sustainability and Liveability
Peta Wolmarans and Desmond Bliek, Halcrow Consulting Inc.

Moving Goods and People in Urban Centers: Reducing Transportation Impacts with Shared-Use Services
Erica Wygonik and Anne Goodchild, University of Washington

Assessing the Economic Burden of Transportation
Jason Zheng, Norman Garrick, Carol Atkinson-Palombo, and Chris McCahill, University of Connecticut
Tuesday, October 19

7:30 a.m.–8:30 a.m., Keck 109
**Breakout Group Leaders Meeting (invitation only)**

7:45 a.m.–8:15 a.m., Served Outside Keck 100 and on 2nd Floor Landing
**Breakfast**
(Seating with tables also available in 3rd Floor Atrium)

8:15 a.m.–9:30 a.m., Keck 100
**Transportation Agency Perspectives on Research to Support Implementing Livable Systems**
Martin Tuttle, Deputy Director, Planning and Modal Programs, California Department of Transportation, presiding

- **Federal Transit Administration**
  - Kate Mattice, Director of Policy Review and Development, Federal Transit Administration

- **Washington Metropolitan Area Transit Authority**
  - Patricia Hendren, Director, Office of Performance, Washington Metropolitan Area Transit Authority

- **Maryland Department of Transportation**
  - Donald Halligan, Director, Office of Planning and Capital Programming

- **Federal Highway Administration**
  - Shana Baker, Community Planner, Federal Highways Administration, Office of Human Environment

**Charge to Breakout Groups**

9:30 a.m.–11:00 a.m.
**Identifying Research Needs: Livability and Transportation for All Communities**

The conference attendees break into groups to brainstorm research needs in transportation and livability based on jurisdiction size—rural, suburban, small cities, and urban. This work will be gathered for a research blueprint. *(Refer to your breakout group number on your badge to determine your assigned group)*

- **Breakout Group 1, Keck 100**
  - Leaders: Johanna Zmud, RAND Corporation; and Diana Bauer, U.S. Department of Energy

- **Breakout Group 2, Keck 109**
  - Leaders: Roderick Diaz, Los Angeles County Metropolitan Transportation Authority; and Reginald Souleyrette, Iowa State University

- **Breakout Group 3, Keck 205**
  - Leaders: Robert Dunphy, Urban Land Institute; and Jason Bittner, University of Wisconsin

- **Breakout Group 4, Keck 208**
  - Leaders: Steven Polzin, University of South Florida; and William Carr, District of Columbia Department of Transportation

- **Breakout Group 5, Keck C-800**
  - Leaders: Shawn Turner, Texas Transportation Institute; and Cynthia Burbank, PB Americas, Inc.

- **Breakout Group 6, Keck C-1100**
  - Leaders: Teresa Adams, University of Wisconsin-Madison; and Susan L. Handy, University of California, Davis

11:00 a.m.–11:30 a.m., Served Outside Keck 100 and on 2nd Floor Landing
**Break**
11:30 a.m.–1:00 p.m.
Identifying Research Needs: Measuring Performance with Livability and Transportation

In the second breakout time slot, the same groups brainstorm about how to measure livability for transportation projects and systems and how to disseminate good case studies.

**Breakout Group 1, Keck 100**
**Leaders:** Johanna Zmud, RAND Corporation; and Diana Bauer, U.S. Department of Energy

**Breakout Group 2, Keck 109**
**Leaders:** Roderick Diaz, Los Angeles County Metropolitan Transportation Authority; and Reginald Souleyrette, Iowa State University

**Breakout Group 3, Keck 205**
**Leaders:** Robert Dunphy, Urban Land Institute; and Jason Bittner, University of Wisconsin

**Breakout Group 4, Keck 208**
**Leaders:** Steven Polzin, University of South Florida; and William Carr, District of Columbia Department of Transportation

**Breakout Group 5, Keck C-800**
**Leaders:** Shawn Turner, Texas Transportation Institute; and Cynthia Burbank, PB Americas, Inc.

**Breakout Group 6, Keck C-1100**
**Leaders:** Teresa Adams, University of Wisconsin-Madison; and Susan L. Handy, University of California, Davis

1:00 p.m.–2:00 p.m., Served Outside Keck 100 and on 2nd Floor Landing
Lunch
(Seating with tables also available in Keck 205, 208, C-800, and C-1100)

2:00 p.m.–4:00 p.m., Keck 100
**Charting a Strategic Research Agenda for Livability and Transportation**
Roderick Diaz, Los Angeles County Metropolitan Transportation Authority, *presiding*

This highly interactive closing session will provide an opportunity for participants to help crystallize the essence of a research needs road map for developing transportation systems for livable communities in the years ahead. The conference planning committee and others will be taking the outcomes to the TRB Annual Meeting, *TR News* and a TRB webinar.

**Perspectives from University Transportation Centers**
Three UTC directors and the audience consider the role of UTCs in advancing these research needs.

Lisa Aultman-Hall, Director, University of Vermont Transportation Research Center; Susan L. Handy, University of California, Davis; and Joseph Schofer, Northwestern University

4:30 p.m.–6:30 p.m., Keck 109
**Planning Committee Meeting (by invitation)**
Breakout Exercise Instructions

Each breakout group will have up to 25 people, a flip chart, a computer with projector, one facilitator, and one “honest broker.” One of the leaders has served for many months on the conference planning committee; the other is a participant who volunteered. The honest broker has the role of reminding people that we are talking about research needs (not other important topics related to livability).

Breakout Task 1-A, Exploring Research Needs
What did you take away from the posters last evening about research needs? Main themes? Gaps? (honest broker takes notes on flip charts)

Breakout Task 1-B, Identifying Research Needs for Group Discussion
Choose four research needs for discussion and enter them as the column headings in the matrix provided.

Possible categories may include: access, relative locations, mobility, significance of other modes, transit type, nonmotorized transportation, travel behavior, telecommunications, street network design, street standards, alternative business models (car-sharing and bike-sharing), land use planning process, transportation planning process, governance and decision making, finance and funding, linkage to environmental goals, equity and provisions for underserved groups (minorities, poor, elderly, and children), barriers to livability, design guidelines and standards, and transportation planning guidelines and standards.
If other research needs arise, they may be listed in the “other topics” column.

Breakout Task 1-C, Brainstorming
As a group, brainstorm the research questions in each area and place them in the matrix cells, using check boxes to indicate the level of knowledge.

Breakout Task 2, Deciding on Performance Measurement
For each research category identified by your group, discuss how to measure (directly and indirectly) attributes of interest and progress toward desired livability outcomes. This list of needs may include data needs.
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