

## **TACKLING TRAFFIC CONGESTION: THE TRANSPORTATION/LAND USE/ENVIRONMENT CONNECTION**

*October 20-22, 2002*

*UCLA Conference Center at Lake Arrowhead*

850 Willow Creek Road

Lake Arrowhead, California

Traffic congestion is among the most enduring and vexing public issues. Congestion was the focus of the first American planning conference in the early 1900s, and public opinion polls today consistently rank congestion as one of the most significant problems of metropolitan life. Many believe that chronic traffic congestion – on streets and highways, and at airports and seaports – is a significant drag on the economy, costing American households and businesses billions of dollars each year. Vehicles stuck in traffic increase emissions, exacerbating air quality problems. And some argue that time spent in congestion exacts a psychological toll on travelers, which may contribute to stress-related health problems.

The 2002 UCLA Lake Arrowhead Symposium focuses on traffic congestion: How is it defined? What are its causes? What are its economic, social, and environmental consequences? And, importantly, what are its remedies? This last question will be given particular attention because the proposed solutions to chronic congestion are many, though consensus about which to pursue has proven elusive. The most obvious solution has been to increase the capacity of the transportation system – more highway lanes, more parking spaces, more harbor berths, more runways, and so on. But a growing number of critics of such “supply-side” solutions argue that increasing capacity encourages more travel, and does little to reduce congestion in the long run. Others call for transportation capacity expansion, but of alternative travel modes: increase public transit instead of highways, add high-speed rail instead of expanding airports, etc. Some see the congestion problem rooted in patterns of development, and the solution in changing those patterns. Finally, others argue that congestion results from the economically and environmentally inappropriate pricing of scarce transportation capacity.

The presentations and discussions at this symposium focus primarily on metropolitan traffic with an emphasis on the potential, and limits, of a wide range of congestion mitigation strategies in a variety of settings.

**SUNDAY AFTERNOON, OCTOBER 20, 2002**

2:00 pm      **TRAFFIC CONGESTION: INTRODUCTION AND SYMPOSIUM  
OVERVIEW**

This overview lays out the issues framing the sessions to follow by exploring many of the perspectives on the causes and consequences of congestion. Deciding on which congestion mitigation efforts to pursue, and the resources devoted to them, depends largely on one's perspective. Many believe that congestion exacts high economic, environmental and psychological tolls on our quality of life, while others think such claims are exaggerated, that congestion is simply an unfortunate, but self-regulating, consequence of urban growth, development and prosperity. These perspectives, and others, are explored in this opening presentation.

*Brian D. Taylor*, Associate Professor of Urban Planning and Director, Institute of Transportation Studies, UCLA School of Public Policy and Social Research

2:30 pm      **DAMN THIS TRAFFIC JAM: DEFINING, MEASURING, AND  
UNDERSTANDING TRAFFIC CONGESTION**

Definitions of congestion and the perceived seriousness of traffic problems vary significantly from person to person and from place to place. This session builds a common working understanding of traffic congestion, its definition, and its measurement. The first presentation explores the history of metropolitan traffic congestion, with a focus on trends in personal and commercial travel and transportation capacity and their implications for traffic congestion in the coming years. The second presentation discusses the traffic flow dynamics that underlie congestion, ways of measuring congestion, and common misperceptions about the causes of and solutions to congestion.

*Moderator: Brian D. Taylor, UCLA*

**Congestion in Cities: Where? When? What Kind? How Much?**

*Martin Wachs*, Roy W. Carlson Distinguished Professor in Civil and Environmental Engineering, Professor of City & Regional Planning, and Director, Institute of Transportation Studies, UC Berkeley

**Congestion 101: Transportation System Supply, Travel Demand, and Traffic Congestion**

*Kara M. Kockelman*, Clare Boothe Luce Assistant Professor of Civil Engineering, University of Texas, Austin

3:45 pm      Break

4:00 pm

## **THE ECONOMIC IMPLICATIONS OF TRAFFIC CONGESTION**

Does traffic congestion hurt the economy? And, if so, under what conditions and by how much? The answer to these questions is crucial to decision makers, who regularly justify transportation investments on their economic benefits. This presentation examines how traffic congestion affects the economy--reviewing the links between congestion and economic productivity, and presenting and critiquing some of the estimates (often quite large) of its impacts.

*Moderator: Brian D. Taylor, UCLA*

### **How Does Traffic Congestion Affect the Economy?**

*Glen Weisbrod*, President, Economic Development Research Group, Boston, MA, and co-author, NCHRP Report 463: *Economic Implication of Congestion* (2001)

### **Discussion Among All Participants**

4:45 pm

## **INDUCED DEMAND, LATENT DEMAND: WHAT REALLY HAPPENS WHEN WE EXPAND CAPACITY?**

Is chronic traffic congestion a sign of inadequate road capacity, or of inadequate transportation alternatives? If new or expanded transportation capacity re-congests after a short period of time, was the situation improved, made worse, or was nothing accomplished? In this session we examine the current debates over induced demand and what we know and don't know about the relationships between transportation capacity improvements and increased travel.

*Moderator: Genevieve Giuliano, Professor of Policy, Planning & Development, University of Southern California and Director, METRANS Transportation Center*

### **Induced Demand, Latent Demand: What Really Happens When We Expand Capacity**

*Don Pickrell*, Chief Economist, John A. Volpe National Transportation Systems Center, Cambridge, MA

### **The Case for NOT Adding Capacity: An Environmental Perspective**

*Michael Ropogle*, Transportation Director, Environmental Defense, Washington, D.C.

### **Discussion Among All Participants**

5:45 pm

## **Check-in and Opening Reception**

6:45 pm      **Dinner**

**SUNDAY EVENING, OCTOBER 20**

8:00 pm      **STUCK IN TRAFFIC: COPING WITH PEAK HOUR TRAFFIC CONGESTION**

Understanding the social, spatial, and economic causes of traffic congestion helps us to understand the likely effectiveness of short- and long term policy interventions. Effectively addressing traffic congestion requires both a clear understanding of the policies and programs most likely to reduce congestion, and of the political constraints on the implementation of these policies and programs. Put simply, some popular congestion relief strategies are ineffective because they do not address the causes of congestion, while other potential strategies are ineffective because they are unpopular and unlikely to be implemented. Hear the perspectives of our featured speaker, transportation scholar Anthony Downs, at this evening session.

*Anthony Downs*, Senior Fellow, The Brookings Institution, Washington, D.C.

**Discussion Among All Participants**

9:30 pm      **Informal Reception and Continued Discussion**

**MONDAY MORNING, OCTOBER 21**

7:30 am      Breakfast

8:45 am      **THE ENVIRONMENTAL COSTS OF CONGESTION**

What are the environmental costs of traffic congestion? How do different congestion relief strategies compare with respect to their short- and long- term effects on the environment? Does metropolitan street and highway congestion worsen air quality and energy consumption, and do capacity expansions to relieve congestion benefit air quality and energy usage? These and related questions are addressed in this session.

*Moderator: Joanne Freilich*, Director, UCLA Extension Public Policy Program

**Congestion Mitigation Strategies: Which Produce the Most Environmental Benefit and/or the Least Environmental Cost?**

*Robert B. Noland*, Lecturer in Transport and the Environment, Centre for Transport Studies, Imperial College, London

**Expanding the Metropolitan Highways and Implementing Other Traffic Flow Improvements: An Update on Implications for Air Quality and Energy Use**

*Rick Dowling*, President, Dowling Associates, Oakland, CA

**The CMAQ Program: Has it Been Effective? Has it Helped Air Quality?**

*Kenneth Adler*, Senate Environment & Public Works Committee Detailee from U.S. Environmental Protection Agency, Washington, D.C.

**Discussion Among All Participants**

10:15 am **Break**

10:30 am **URBAN FORM: IF IT'S PART OF THE PROBLEM, CAN IT BE PART OF THE SOLUTION?**

Sprawling suburban development is often cited as a principal of auto dependence and chronic traffic congestion. Is traffic congestion really worse in suburbs than in central cities? Do less-congested suburbs exacerbate central city and/or regional congestion? If poor land use and development planning are at the root of metropolitan traffic congestion, can better land use and development planning significantly relieve congestion? What urban form patterns work best for relieving congestion?

*Moderator: Elizabeth Deakin*, Associate Professor of City & Regional Planning and Director, UC Transportation Center

**Does Suburbanization Cause or Relieve Congestion? The Congestion Consequences of Development**

*Randall Crane*, Professor of Urban Planning, UCLA

**Commentaries: Can Local Land Use Planning Change Travel Behavior to Reduce Congestion?**

*The Honorable Mark DeSaulnier*, Supervisor, Contra Costa County and Boardmember, Metropolitan Transportation Commission and California Air Resources Board

*John Holtzclaw*, Chair, Transportation Committee, Sierra Club, San Francisco, CA

**Discussion Among All Participants**

12:00 pm **Lunch**

## **MONDAY AFTERNOON, OCTOBER 21**

1:30 pm      **CAN WE PRICE OUR WAY OUT OF CONGESTION?**

Better pricing of the transportation system, especially highways, has been cited for decades as a panacea for otherwise intractable traffic congestion. Why does pricing continue to be touted by so many transportation researchers when the concept is so unpopular among the general population and elected officials? Here we specifically examine the results of recent efforts to price road use to reduce delay, and whether current proposals to adopt congestion pricing more broadly are a harbinger of increasing public and political acceptance of congestion pricing.

*Moderator: Donald Shoup, Professor of Urban Planning, UCLA*

**Congestion Pricing in Practice: What Have We Learned?**

*Robert W. Poole Jr.*, Director of Transportation Studies and Founder, The Reason Foundation, Los Angeles, CA

**A Very Big Experiment: Congestion Pricing In London**

*Peter Jones*, Professor of Transport Policy and Behavioural Analysis and Director, Transport Studies Group, University of Westminster, London

**The Politics of Congestion Pricing: What Does it Take to Implement?**

*Steve Heminger*, Executive Director, Metropolitan Transportation Commission, Oakland, CA

**Discussion Among All Participants**

3:00 pm      **Free Time**

5:30 pm      **Reception**

6:30 pm      **Dinner**

## **MONDAY EVENING, OCTOBER 21**

7:45 pm      **USING INTELLIGENT TRANSPORTATION SYSTEMS (ITS) FOR HIGH-TECH TRAFFIC MANAGEMENT**

Rapid technological advancement is changing every facet of life, including the management and operation of transportation systems. With respect to traffic congestion, new technologies have long been touted as a cost-effective means to squeeze more performance out of existing transportation systems. Are technological innovations the key to solving congestion problems? Presenters

evaluate recent efforts to use technology to better manage traffic flow and reduce delay.

*Moderator: Michael D. Meyer, Professor of Civil & Environmental Engineering, Georgia Institute of Technology, Atlanta, GA*

**ITS Applications to Improve Surface Transportation Systems Performance: The State of the Practice**

*Tarek Hatata*, President, System Metrics Group, Inc., San Francisco, CA

**Ramp Metering as a Freeway Traffic Management Tool**

*David Levinson*, Assistant Professor of Civil Engineering, University of Minnesota

**Using Information to Influence Behavior and Reduce Delay: The PEMS Program (Performance, Evaluation, and Management)**

*Pravin Varaiya*, Nortel Networks Distinguished Professor of Electrical Engineering and Computer Science, UC Berkeley

**Discussion Among All Participants**

9:30 pm **Informal Reception/Discussion**

**TUESDAY MORNING, OCTOBER 22, 2002**

7:30 am **Breakfast**

8:45 am **MANAGING REGIONAL CONGESTION: PUTTING IDEAS INTO PRACTICE**

The final day of the symposium begins with four short presentations evaluating recent efforts to put congestion management ideas into practice. What have we learned from these efforts to manage and mitigate traffic in congested areas?

*Moderator: Joanne Freilich, UCLA Extension*

**Transit Investments: How Do They Impact Congestion?**

*Jarrett Walker*, Partner, Nelson\Nygaard Consulting Associates, Portland, OR

## **The El Monte HOV/Busway: A Policy-Driven Experiment in Congestion Management, and HOV Lanes in General: Are they Working?**

*Frank Quon*, Deputy District Director of Operations, District 7, California Department of Transportation

## **Recent Innovations in Transportation Demand Management**

*Peter Valk*, President, Transportation Management Services, Pasadena, CA

## **Mitigating Goods Movement Traffic Congestion in Metropolitan Areas**

*Gill V. Hicks*, Gill V. Hicks and Associates, Los Angeles, CA

## **Discussion Among All Participants**

10:30 am **Break**

11:00 am **PUTTING IT ALL TOGETHER: RECONCILING TECHNICAL AND POLITICAL CONSIDERATIONS IN EVALUATING CONGESTION MITIGATION STRATEGIES**

The closing session synthesizes what we have learned about the operational, behavioural, developmental, and environmental dimensions of traffic congestion, and then analyzes the economic, institutional, and political constraints on its mitigation. In particular, the session explores: (1) how popular perceptions of congestion drive transportation planning processes and affect policy innovation, (2) the most and least effective strategies to reduce traffic congestion and improve transportation system performance, (3) the effectiveness of local, regional, and state roles in managing congestion, and (4) the steps needed to more effectively address metropolitan traffic congestion in the coming years.

*Moderator: Brian D. Taylor, UCLA*

*Michael D. Meyer*, Professor of Civil & Environmental Engineering, Georgia Institute of Technology, Atlanta, GA

## **Discussion Among All Participants**

12:15 pm **Concluding Lunch  
Steering Committee Meeting**