

**UCLA EXTENSION PUBLIC POLICY PROGRAM
Annual Symposium Series on
THE TRANSPORTATION, LAND USE, AIR QUALITY CONNECTION**

Inter-Regional Travel and Local Development

**October 24-26, 1999
UCLA Conference Center
Lake Arrowhead, California**

SUMMARY OF PROCEEDINGS

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Symposium Summary: The Transportation, Land Use, Air Quality Connection

THE FOLLOWING IS A LIST OF OTHER PUBLICATIONS IN THE UCLA EXTENSION PUBLIC POLICY PROGRAM'S SYMPOSIUM SERIES ON TRANSPORTATION, LAND USE, AIR QUALITY CONNECTION:

October 1998	Financing the Future
December 1997	Transportation and the Economy
December 1996	ISTEA Reauthorization: Will it Refine, Redefine, or Forge New Policy Linkages?
October 1995	Putting Advanced Technologies to Work: Promises, Prospects and Policy Issues
October 1994	Taking Strategies from Concept to Adoption to Implementation
November 1993	The Role of Land Use Strategies for Improving Transportation, and Air Quality
October 1992	The Role of Pricing and Market-Based Strategies
November 1991	Overview of Strategies for Making Connections Between Transportation, Land Use, Air Quality

FOREWORD

This report is a summary of proceedings from a policy and research symposium convened by the UCLA Extension Public Policy Program in October 1999 which examined the explosive growth in inter-regional passenger travel and goods movement, the need for expansion of inter-regional transportation facilities, and implications for surrounding communities.

The symposium was the ninth in an annual series being convened to address the connections between transportation, land use, and air quality. Each year a specific theme is selected for detailed examination relating to the interrelationships among these three areas.

Past programs in the Arrowhead symposium series have focused on assessing the relative effectiveness and feasibility of discrete strategies or approaches for improving congestion and air quality. The strategies examined have included pricing and market-based programs; travel demand management strategies; changes to land use policies and practices; and application of advanced transportation technologies.

In 1997 we departed from prior symposia by introducing the economy as a “fourth prong” in the transportation, land use and air quality connection, focusing on the way our national, state, and local economies affect transportation needs, air quality impacts, and land use patterns. And in 1998 we examined continued economic change expected into the 21st century, focusing on finance issues, specifically how to pay for the future development and operation of the transportation system, and how the system of finance we use affects travel choices, land development and air quality.

To ensure that the information and issues addressed in these programs are keyed to the needs of policymakers and practitioners, each annual program is developed with representatives of the cosponsoring and cooperating organizations, which include governmental, business, environmental, and public interest groups. These organizations are identified in Appendix D of this report.

It is the hope of the symposium organizers that this, as well as the previous symposia that have been held will contribute to ongoing policy dialogues, and also to implementation of efficacious strategies for solving our transportation, land use, and air quality problems.

Joanne Freilich, Program Director
LeRoy Graymer, Founding Director
UCLA Extension Public Policy Program

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I. INTRODUCTION

During October 24–26, 1999, policy leaders, practitioners from various levels of government, private business representatives, environmental advocates, and university scholars retreated to the UCLA Conference Center at Lake Arrowhead for the ninth annual *Transportation, Land Use and Air Quality Connection* invitational symposium. Organized by the Public Policy Program of UCLA Extension, participants occupying diverse roles were convened to consider the relationship between the increasing demand for inter-regional travel and impacts on communities and regions.

In an era marked by widespread intercity and international passenger travel, increasingly globalized goods movement, and an ever larger scale of freight operations, localities hoping to capture the economic benefits promised by these trends face a difficult balancing act: How can a city or region equip its transportation infrastructure to handle increasing volumes of passengers and freight and at the same time shield its neighborhoods and communities from the negative impacts that accompany increased transportation and expanded transport facilities?

The breadth of experience represented by symposium participants allowed many important dimensions of this issue to be addressed at the conference. Symposium speakers presented a general framework for the conference, sketching trends in inter-regional travel and trade, changes in the maritime and airline industries, environmental problems and land use conflicts implicit in growing inter-regional transportation, patterns of highway usage and metropolitan development, and the financing of transportation mega-projects. Invited speakers also used case studies of specific transportation facilities and proposals in California and beyond to explore the dynamic between the benefits and costs that arise from accommodating increased demand for inter-regional freight and passenger movement.

These symposium proceedings have been prepared to document the valuable information presented at the policy/research symposium; the questions raised and opinions offered by symposium panelists; and the thought-provoking discussions shared by all attendees. For each of the nine symposium sessions, a summary of the presentations is provided, and the major themes of the plenary dialogue sessions are recounted. If we have been successful, this summary will help conference participants to recall with greater clarity the contents of each session, as well as the threads of lively debates that followed. For those who did not attend but have an interest in the content, the proceedings should be useful as a stand-alone account of the symposium, and a point of reference for further inquiry and research.

Andrew Mondshein
Gian-Claudia Sciara
Conference Recorders

II. SYMPOSIUM PROCEEDINGS

BALANCING INTER-REGIONAL TRAVEL WITH LOCAL IMPACTS: A SYMPOSIUM OVERVIEW

Leroy Graymer, Founding Director of the UCLA Extension Public Policy Program, opened this year's *Transportation, Land Use, and Air Quality Connection* symposium by reminding participants of the purpose of the series. In its ninth year, the annual symposium at Lake Arrowhead addresses the complicated relationships among transportation, land use, and air quality issues. Graymer emphasized the series' role as a forum for research scholars and public policy makers to engage one another. The series opens a unique, two-way dialogue between researchers and people who make and implement public policy. Ideally, the symposium is a model for showcasing current research to inform public policy, and for allowing academics to see where their attention is needed and how they can direct their inquiries to problems that face contemporary decision makers. By convening elected/appointed officials, representatives from public agencies, land use specialists, environmentalists, and the private sector in a neutral environment and retreat setting, the series encourages lively discussion among all parties. It fosters the exchange of information and insights in a context that is distinct from pure advocacy and that invites reflective consideration of new information and points of view.

UCLA Extension Director, Joanne Freilich, welcomed attendees and briefly reflected on the symposium's history. The series' examination of connections among transportation, land use and air quality has not wanted for topics, noted Freilich. In previous years, the conference has addressed market mechanisms, land use strategies, new technologies, alternative fuels, and more. Two years ago, the conference on transportation and the economy looked at the relationship between economic growth and mobility. Last year, participants addressed issues surrounding transportation and finance.

Freilich introduced the conference theme for 1999: inter-regional travel and local development. Participants would address trends in medium and long distance travel between metropolitan areas, as well as international travel. She previewed some of the questions and issues that speakers would address, such as inter-regional transportation facilities like ports, transit stations, highways, and airports. Speakers would also consider the effects of growing demand for inter-regional travel on movement *within* regions, as well as effects on local and regional development patterns, air quality, and environmental quality.

She thanked symposium sponsors, observing that sponsors and cooperating organizations who worked on the Steering Committee helped make the conference possible. Freilich also applauded the close working relationship between UCLA Extension's Public Policy Program and the UCLA School of Public Policy and Social Research, which has been facilitated by Professors Martin Wachs and Brian Taylor.

Professor Brian Taylor of UCLA's Urban Planning Department and Institution of Transportation Studies extended further welcome to attendees and provided an interpretive summary of the weekend's topics and debates. He described several developments that have

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placed inter-regional travel and local development issues on the radar screens of public officials, and observed that airport, seaport, railroad and highway expansions have all become hot topics in this context. An increasingly global economy, revolutionary changes in the movement of people and goods brought by the Internet, and a growing emphasis on the temporal precision of departures and arrivals make a consideration of complex systems of inter-regional travel a timely issue.

Mapping the symposium agenda for the next three days, Taylor said Sunday's sessions would provide an overview of inter-regional passenger travel and trade, focusing on trips that do not follow a regular daily pattern. Participants would engage a variety of mode specific questions, including:

- How to accommodate expected increases in air traffic?
- How should policy makers know whether additional infrastructure such as airports, freeways, or landside port facilities are necessary, and when is the best time to pursue such expansion?
- Will intense local opposition to such expansion affect metropolitan development patterns?
- What alternatives should planners consider for accommodating changes and growth in inter-regional travel?
- Are there better ways than freeways to collect and distribute inter-regional vehicle trips within metropolitan areas?
- How do we cope with growing environmental impacts from the larger expanding ports, while also trying to stem the decline in use of smaller ports?

Sessions on Monday and Tuesday would address the political institutions that govern such large scale transportation investments and would consider the prospects for building large scale projects such as new airports and high-speed rail corridors in today's political and financial environment. Later sessions would consider environmental planning in this context, including planning for air quality, for example, with its many governing bodies.

Taylor distilled four themes for the symposium discussions:

- 1) The role of forecasts in planning for inter-regional transportation facilities. Forecasts of increased plane, truck, and ship travel have infused consideration of new facilities with a sense of urgency. To what extent do planners heed forecasts? And if planners do heed them, does growth in travel and trade follow because planners wisely acknowledged the signals, or because the new facilities spurred growth themselves? How might current developments in inter-regional transportation be used to steer growth to some places rather than others?
- 2) What should be the priorities of long distance versus local travel?
- 3) How can we balance the dispersed, but clear economic benefits of trade and the facilities that serve trade with environmental costs that are often hard to measure and that fall largely on adjacent communities?

- 4) What role should government investments and taxpayer dollars play in the competition among modes for passengers? For example, to what extent should taxpayer dollars pay for new high-speed rail which would compete with airlines? To what extent are modes currently subsidized?

SESSION 1: EMERGING PATTERNS AND TRENDS IN INTER-REGIONAL TRAVEL AND TRADE

Brian Taylor (Moderator), Associate Director, UCLA Institute of Transportation Studies and Assistant Professor of Planning

Alan Pisarski, Consultant, Falls Church, VA

Paul O. Roberts, Former Vice President, Science Applications International Corporation, Fall Church, VA

Inter-regional passenger travel and goods movement have increased dramatically in the last two decades and projections say this trend will continue. States and regions that wish to capitalize on this growth will have to face the impacts of increased travel on the local environment and infrastructure. The opening session of the Lake Arrowhead conference explored current patterns and projected trends in inter-regional travel, both for passenger (including tourist) travel and for goods transport. The portraits provided a descriptive framework for inter-regional travel and set the stage for the discussions to come in later sessions.

Alan Pisarski described the prominent role that tourist travel plays in demand for inter-regional transportation. Tourists are persons travelling outside their usual environment for less than a year for activities not remunerated at their destination. Pisarski first discussed the general increase in tourism worldwide. The World Trade Organization lists tourism as the biggest industry in the world. It predicts international visitors will number 1.6 billion and international tourists receipts will total \$2 trillion by 2020. While tourism in East Asia and the Pacific is growing more rapidly than tourism in the United States, the U.S. is the dominant destination in the world in terms of tourist receipts. In the U.S., tourism yields a strong trade surplus and is the country's largest service export, according to Pisarski. Tourist travel is also a key component of inter-regional domestic travel in the United States.

Pisarski underscored the importance of inter-regional tourist travel for California, in particular. The state ranks twentieth in per capita travel, but people in California travel more miles than passengers within any other state. California also leads all states for outbound and domestic long distance travel. Fifty percent more people leave California than enter it for travel, and roughly 40 percent of California's outbound travel goes to Las Vegas. Traveller demographics were also a point of focus. Pisarski noted that women travel between cities less than men, and that women also travel far less for business than do men. However, the growth in trips made for caregiving, such as visits to elderly parents or grandparents, may mean long distance travel by women will increase, as family caregivers are more likely to be female. The American Association of Retired Persons (AARP) reports that caregivers commonly live up to 100 miles or more away from the family member(s) whom they assist; this has clear implications for inter-regional travel. Pisarski also observed

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that travel among older people has grown the most; the peak age for travel has moved from 35 to 45. Travel statistics also indicate that travel among minorities is growing and will continue to do so in coming years.

According to Pisarski, these trends strongly suggest that travel is only going to grow. The U.S. will maintain its position as a major world destination. Moreover, ever-increasing global linkages, especially those spawned by the rise of the Internet, will provide more people and businesses with global connections and reasons to travel. In the United States, the highly dispersed nature of the population makes inter-regional travel important, and large numbers of Americans are entering "high travel" age groups and income ranges. Cumulatively, these factors suggest a significant role for tourism in the next century, and may give transportation planners and decision makers pause about how to accommodate growing passenger numbers at airports, on intercity buses, as well as on inter-regional roadways.

Paul Roberts' presentation complemented the passenger travel discussion by illustrating trends in inter-regional goods movement in the United States. Focusing largely on the trucking industry, Roberts grounded his views on goods movement with the contention that freight is fundamental to the functioning of a modern economy and is a precondition for economic development. Efficient goods movement allows regions to specialize, and facilitates greater productivity and economies of scale in industry. The market economy has driven the changes in freight movement today, according to Roberts, and has encouraged producers, shippers and retailers alike to operate at increasingly larger scales.

Four factors strongly influence the direction of freight logistics developments today:

1. Changes in the freight industry. The past two decades have seen significant changes in the nature of shipments and the regulation of freight carriers. Today, not only are significantly more products shipped, but the items themselves generally have a higher value per pound. Also, increasing product differentiation means greater variety among goods shipped.

The regulatory environment has undergone radical transformations since 1980, when the Reagan Administration ushered in deregulation of the transportation industry. Previously, *less-than-truckload* carriers dominated the industry, costs were high, and producers commonly had their own fleets for distribution to save money. Deregulation opened up the industry in many ways and allowed for dramatic growth in non-Teamster, *truckload* trucking, which depends on the economies of scale furnished by large shipments. By liberalizing the transportation sector, deregulation has allowed the logistics costs of firms to drop by one-third since 1980. While logistics accounted for 16 percent of the Gross Domestic Product (GDP) in 1980, by 1990 it made up only 10 percent. Today, *less-than-truckload* trucking is ten times more expensive per pound than *truckload* shipping. Also, the shipping of large quantities of goods in truck-rail containers has grown dramatically.

Roberts briefly characterized truck trips in the U.S., noting that trips of 50-miles or less account for an incredible 81 percent of truck trips. These short urban hauls also are

responsible for 74 percent of tons carried, 66 percent of revenue earned, and 36 percent of vehicle miles traveled (VMT) by trucks in the U.S. Regional trips between 50 and 200 miles in distance along with intercity trips above 200 miles are far fewer in number although they naturally contribute greater VMT.

Although the trucking industry is the center of freight movement in the U.S., deregulation has allowed rail to exit unprofitable markets and this mode now is capturing an increasing amount of long haul shipments. The rapid growth of intermodal shipping in the last two decades has contributed to rail freight activity.

2. *Increasing market competition drives producers to minimize total costs.* Producers seek to lower costs in both the acquisition and the inbound transportation of goods and materials. The production, storage, and distribution of goods are also areas where producers seek to economize.

When transporting materials or finished goods, whether by rail, truck or ship, the best way to secure a cheap rate is to ship in large quantities. The dramatic reduction in shipment costs with increased shipment size encourages both producers and retailers to order more than they need. Also, shipment size notches upward as producers and retailers keep safety stocks to counter supply interruptions. Indeed, Roberts explained, the use of stock-keeping units has grown explosively. Large inventories can cause problems at the point of sale, however, unless usage rates are high. This practice encourages big stores (e.g. Costco) and big operations to capitalize on economies of scale. On the whole, producers and retailers must balance numerous trade-offs in different scales of acquisition, production, storage and distribution; clear economies of scale can be achieved by doing any of these things in large quantities, but individual circumstances determine the most profitable production and shipment strategies.

3. *Supply chain integration is occurring in most industries.* The increasing use of logistics modeling has allowed producers to determine the number of distribution centers as well as the connections to suppliers and outlets that optimize efficiency. The use of sophisticated logistics models will continue to shape the shipping industry, predicted Roberts.

4. *E-commerce revolution will increase trade and freight movement.* Roberts anticipated that electronic commerce via the Internet will fundamentally change retailing and carry significant geographic implications. While Web-based trade may decrease the need for stores, it will increase the need for warehouses and generate an enormous amount of new logistics problems. Now more than ever, Roberts claimed, business can locate anywhere that requisite services are available, and efficient freight movement will be even more crucial to regional economies.

DISCUSSION

Participants used the discussion period to revisit several themes touched upon in the presentations: 1) the environmental and social externalities brought by increased freight and passenger travel; 2) the subsidization of transportation infrastructure that benefits private commerce; and 3) the effects of trucking deregulation and market imperatives.

Alan Pisarski acknowledged the conflict between encouraging tourist visits and preserving the natural environment, noting that the foreign exchange brought by tourists often comes at the cost of a country's environment. In the U.S., tourism is the number one industry in 6 states and among the top three in almost all of them. Clearly, future leaders will have to balance increased tourism and the negative impacts it can bring, said Pisarski. Norman King of the San Diego Association of Governments (SANDAG) expressed dissatisfaction with the panelists' failure to address the environmental costs of increased trucking, and the industry's failure to acknowledge the problem of reliance on diesel fuel. Increasingly, King contended, cities are facing environmental degradation as well as rising financial costs for maintaining truck and rail infrastructure. The problem is especially prominent in Southern California and the Inland Empire due to the high concentration of port-related trucking activity.

Ron Bates of the League of California Cities and Southern California Association of Governments also noted the increasing costs imposed on citizens by trucking and airport infrastructure. Ironically, while the cost of goods delivery has decreased, contended Bates, the costs to the public—in terms of infrastructure costs, congestion and declining air quality—have risen. Paul Roberts replied that if local municipalities failed to accommodate the increased freight movement, other cities would be eager to absorb the business. He also suggested that the impacts of truck traffic are exaggerated, as it accounts for only 2 percent of traffic volumes. One audience member challenged this assertion, particularly in the Southern Californian context. Alan Pisarski observed that in the United States public investment in infrastructure was very small compared to private investment.

Asked to elaborate on the significance of trucking deregulation, the panelists explained that in 1980 the Interstate Commerce Commission for the first time granted truckers authority to carry general goods *without* having to prove "convenience and necessity." Previously, truckers had to request numerous operating grants in order to take truckloads at low prices, and they also had to file cumbersome individual rate packages. Large companies and their lawyers were able to work around the laws back then, but now deregulation has allowed truckers to carry anything for any price. Also, the seemingly infinite number of tariffs published by the Interstate Commerce Commission (ICC) back then contributed to the collapse of the regulatory system, noted Pisarski.

**SESSION 2: CHANGE AND GROWTH IN THE AIRLINE INDUSTRY:
IMPLICATIONS FOR AIRPORT PLANNING AND LAND USE CONFLICT**

Brian Taylor (Moderator)

Mark Hansen, Associate Professor of Civil and Environmental Engineering, UC Berkeley

Steven Erie, Associate Professor of Political Science, UC San Diego

David Lewis, President, HLB Decision Economics Inc., Ottawa, Canada

Steven Howards, Executive Director, Clean Airport Partnership, Lakewood, CO

Metropolitan airports are often unpopular with their residential neighbors. Airports significantly impact the surrounding physical and social environments, adjacent development, and regional development patterns. Proposals to increase capacity at existing airports, to build new airports, or to convert dormant military airports are inevitably at the center of heated local land use conflicts. Mark Hansen explored the rapidly evolving airline industry and the implications of this evolution for airports. As explained by Steven Erie, while growth in the air cargo and passenger airline industries continues to explode, requiring new airport capacity, local governments and communities near airports are often unwilling to allow airport expansion in their backyards. David Lewis and Steven Howards addressed how, by including the community in a clearer, more politically sensitive airport development process, and by introducing new technologies that could make airport and air traffic expansion more palatable to communities, the airline industry just might be able to continue its phenomenal growth.

Mark Hansen began the session by underscoring the tremendous growth in air traffic in his presentation on “Changing Airlines, Changing Airports: Industry Trends and their Airport Implications.” While air traffic and airport usage have grown impressively over the past twenty-five years, the traditional methods air carriers have used to expand - making better use of existing airports - are reaching their limits. Hansen predicted that as existing airports hit their capacities, pressure will grow to open new airports in California, and nationwide.

Hansen presented the basic statistics on air traffic. Passenger carrier trends indicate that commercial airlines are reaching the limits of the techniques they have used until now to increase capacity. Enplanements - passenger boardings on commercial flights - have tripled since 1976. However, flight operations - take-offs and landings - have only gone up seventy-six percent since 1976. In other words, air carriers have mostly increased boardings by squeezing more passengers onto the same flights, not by substantially increasing the number of planes or flights on their schedules.

As a result of this squeezing, Hansen said, the number of passengers per flight has increased by sixty percent since 1976. Until now, the result has lowered costs for passengers, if also a lower quality of service. Airlines have also gotten much better at using inventory control and pricing to fill every seat. However, an airplane can't be filled beyond 100 percent capacity, and airlines are rapidly approaching this limit.

Air cargo has grown even faster than passenger boardings: The weight of goods has tripled in only fifteen years, since the mid-1980's. While this growth may be tremendous, it may

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also have been accommodated in unsustainable ways, according to Hansen. Seventy percent of California exports by value are now shipped by air. However, companies like Federal Express and United Parcel Service have not worried about airport capacity constraints because most cargo has been shipped during the night, when passenger airlines place little demand on airport capacity. However, as air cargo continues to grow, companies are finding markets for daytime cargo shipments, bringing their growth strategies into direct conflict with passenger carriers who are currently maximizing their use of daytime airport capacity.

Hansen explained that the hub-and-spoke system used by airlines has also placed a barrier in the path of further growth. Because most flights either take off or land at a limited number of hubs, and because airlines often schedule many flights to land simultaneously (during desirable time slots), the national air traffic control system has grown very fragile. Whenever problems crop up at one hub, the entire national system can be thrown into chaos. However, airlines seem unwilling to expand into multiple airports within one region, or stagger flight schedules. Therefore, the problem of “scheduled peaking” will continue.

Hansen described some technological solutions being introduced to help airlines continue expansion. For example, Communication Navigation Surveillance Technology can increase airport capacity by focusing flight paths more tightly through regional airspace. However, the preferred flight path for airlines is becoming harder and harder to accommodate. The pressure to expand existing airports, and in some cases open new airports, will only increase.

Steven Erie explained why expanding existing airports, or even opening new airports, is not such a simple proposition. Focusing on Southern California, Professor Erie outlined the political and economic forces preventing airport growth in the region. Including general aviation and military airports, Southern California is not truly lacking in airport capacity for either airline passengers or air cargo. Furthermore, the contribution which airlines make to the regional economy is tremendous. Los Angeles International Airport alone generates about \$45 billion yearly in economic development for Southern California. Given the regional economic boost airports and airlines provide, one might expect local politicians and communities to support airport expansion in order to accommodate the projected growth in air traffic over the next several decades, Erie suggested.

The challenge of airport development, however, is the classic dilemma of dispersed benefits and concentrated costs. While airports may be economic boons, the benefit they provide is spread across many businesses and individuals all over a region. The costs of airports and air traffic, however, are localized around the airports themselves. Noise, traffic, air quality, and even safety impacts are concentrated tightly around airport sites. Therefore, Erie explained, the expansion of existing airports or the opening of new ones in settled areas often incites intense oppositional coalitions, usually composed of the communities and local governments based right around the airports. Because the benefits of airport expansion are dispersed, pro-airport coalitions are hard to organize. Compounding the dilemma of concentrated costs is the “free rider” problem. Many municipalities are happy to accept the economic growth within their cities – facilitated by airports in neighboring cities. However, when new airports are needed, these cities rarely want to shoulder the burden of housing a

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new airport. Every city hopes that its neighbor will bear the noise, traffic, and air quality burdens of a new airport while it can reap the benefits in new economic development.

Other barriers prevent California cities from expanding their airports – or opening new ones inside urbanized areas. Erie pointed out that planning and constructing a new or expanded airport takes a decade or more, but term limits make it harder to get local and state elected officials interested in and supportive of airport developments. The political will to develop a new airport does not have time to gel. Also, because of Proposition 13, many California cities have lost their traditional revenue source, property taxes. Therefore, they have at times looked to self-supporting city bureaus such as airports, harbors, water, and power to make up the fiscal difference. This prevents city airport departments from reinvesting revenues into the airports, leaving not enough money for expansion.

While national air traffic is bursting at the seams of its existing network, and local governments seem unable or unwilling to accommodate growth through new or expanded airports, David Lewis pointed out how conflict mitigation strategies can muster the municipal and community grass-roots support needed to get airports built. The conflict mitigation model presented by Lewis builds on a traditional cost-benefit analysis. However, instead of considering only financial factors in this cost-benefit analysis, the model allows the “subjective” factors (such as traffic and proximity to housing) that the public often values most highly to enter into the decision-making process when siting and planning for airport expansion.

Cost-benefit analyses are often used to help decisionmakers select between alternative strategies. In this case, Lewis proposed that his expanded form of analysis can help communities deal with conflicts such as:

- Multiple vs. a single regional airport
- Allocation of limited resources
- NIMBY (Not-in-my-backyard)-ism
- Procurement of goods and services

According to Lewis, the key is to bring the public’s beliefs into the traditional cost-benefit analysis. The alternatives under consideration must be presented in terms the public can understand. The process must assign values in terms of tangible and intangible factors that people accept as real and value as important. Finally, not only must the public be included in a process of review in order to build consensus, but the community must be engaged in the final decision. Of course, the analysis must not be purely subjective. Outside experts should be brought into public meetings to explain financial, technical, and environmental realities. If people understand how the airport expansion process really works, and what’s at stake in terms of economic development, the environment, and other factors, then they will be able to adjust their opinions during the process. Recent airport expansions in Vancouver and Denver have been accompanied by this type of inclusive cost-benefit analysis, Lewis noted.

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Steven Howards concluded the session by suggesting that if the federal government, along with state and local authorities, begin to focus on making airports cleaner, many of the barriers to expansion, whether political or administrative, will begin to fall away. Many of the problems in cleaning up airports stem from the fact that while the issue is national, little guidance comes from the federal government. National guidance is necessary to set uniform standards for the emissions and noise that result from airport operations and expansions. However, the EPA has little legal authority to deal with the issue and the FAA doesn't realize the scope of the problem because of its focus on airport operations. In some cases, the airlines have found regional solutions to environmental problems. For example, in the Boston area, Southwest Airlines began operation out of Rhode Island, taking much of the expansion pressure off of Boston's Logan Airport.

Solutions that can be applied nationally are also necessary, Howards suggested. Airports should be treated by emissions regulators as "single source" sites. In other words, airports should be able to generate their air quality improvements however they like within the airport instead of being told exactly how to reduce their emissions. Also, ticket prices should reflect the external environmental costs of flying. Airports might even consider using some of their revenues to purchase land in their flight paths in order to reduce community exposure to emissions. However, without a more clearly-defined constituency supporting cleaner airports on a national scale, it will be difficult to make these issues important to Congress.

DISCUSSION

One issue of particular relevance to California, brought up by Barbara Goodwin, Fresno Council of Governments, is the lack of growth, or even attrition, in service to medium-sized, non-hub markets. Mark Hansen explained that service hasn't grown in cities like Fresno to some degree because larger carriers have bought out the smaller carriers that used to serve places like Fresno. In the rush to expand at key markets, these larger carriers have tended to move assets out of smaller markets. Also, some airline industry labor unions have been unwilling to let major carriers delegate jet flights to regional affiliates, who often pay less to their employees than the large carriers.

Dean Taylor of Southern California Edison asked whether increasing airplane size would alleviate the pressure to expand airports. Mark Hansen replied that airlines just don't seem to be interested in taking that route to expansion. However, they may be operating under the flawed assumption that the airports in which they operate will eventually expand, in one way or another.

Finally, Norm King asked if any regions have used economic incentives to alter the behavior of airlines in locating their flights. David Lewis explained that around Toronto, the Canadian government has set up a system of differential use fees and landing fees for air cargo, going a long way towards reducing conflicts with other air traffic. Steven Howards added that in Boston, the airport authority is requiring airlines to pay more for landing dirty aircraft in the area. The effect has been to get airlines to move dirty aircraft to other parts of the country.

SESSION 3: HIGH-SPEED RAIL: PLANS, PROSPECTS, AND IMPLICATIONS FOR METROPOLITAN DEVELOPMENT

Martin Wachs (Moderator), Director, Institute of Transportation Studies; and Professor of City and Regional Planning and Civil and Environmental Engineering, UC Berkeley

Ronald Mauri, Chief, Center for Transportation Information, John A. Volpe National Transportation Systems Center, U.S. Department of Transportation

Dan Leavitt, Deputy Director, California High-Speed Rail Authority

Norm King, Executive Director, San Bernardino Associated Governments

High-speed rail is one proposal for addressing the growth in population and inter-regional passenger travel demand anticipated in California in coming decades, particularly in the Central Valley corridor between Los Angeles and San Francisco. This session examined current proposals for high-speed rail in California while looking for insights on such proposals from other regions - both domestic and abroad - that have instituted high-speed passenger rail service. The panelists discussed what factors can make high-speed rail (HSR) successful, and what risks make such a costly public expenditure controversial for California.

Ronald Mauri of the Volpe Center, the research arm of the U.S. Department of Transportation (USDOT), opened the panel by describing high-speed rail systems in general and reviewing the experiences of other regions in the U.S. with this technology. Mauri briefly discussed the Center's current work on a high-speed locomotive that can travel at 150 mph, and explained that the federal government wishes to create an environment that fosters the development of high-speed rail systems.

Fundamentally, the high-speeds at which they can travel separate HSR systems from ordinary passenger rail. HSR systems travel at least 90 mph, make at least 5 runs per day, use highly modern equipment, and can run on fossil fuels or electricity. For simple comparison, Mauri noted that Amtrak generally runs at 79 mph or less, due to equipment limitations. High-speed trains require better control. Moreover, the removal of at-grade crossings is strongly encouraged for 110-mph systems and is required for systems operating at 125-mph and above. To distinguish between HSR and magnetic levitation trains, or MagLev, Mauri explained that MagLev is guided ground transportation that has no physical contact with rails; it is levitated, pulled along, and guided by magnets. Electricity to the vehicle is supplied via magnetic fields as well. In 1998, TEA-21 legislation approved \$950 million for the development of seven MagLev proposals; from the seven grantees, a finalist project would be selected for implementation. Nevertheless, it is uncertain whether Congress will actually appropriate the money once the project is selected.

Mauri's overview of current HSR applications included reference to Amtrak's Northeast Corridor serving New York to Boston, as well as other lines. While the project has electrified the tracks between New Haven and Boston, problematic wheelsets on the special accelerating trains have delayed the upgrade from 125-mph to 150-mph service. Ultimately, the travel time will be reduced from 5 hours to 3 hours. HSR service between New York City and Albany travels at 110-mph but has avoided electrification because of its high costs.

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In the Pacific Northwest, Talgo Tilt Trains run at 79-mph, but may be able to increase speeds once train control issues are resolved. Ridership has grown dramatically on this line. Mauri also mentioned HSR plans that are on the drawing board in other parts of the U.S., including the Southeast Corridor between Charlotte, North Carolina, and Washington, D.C.; a Midwestern hub and spoke system radiating from Chicago; and the Pennsylvania Keystone Corridor. Currently, California's AmTrak corridors run at 79-mph, and efforts are being explored to increase the speeds.

Mauri concluded his overview of HSR by reflecting on proposals that have failed in Florida, Texas, Nevada, and several other places. HSR plans that were ultimately shelved offer lessons on what is necessary for such a project to be built. First, public support is essential. Second, HSR plans need a strong champion who is willing to build support and lead efforts for the project for as long as it takes. Federico Pena's role in the Denver Airport project illustrates how a lead figure can help to make big projects happen. Finally, Mauri noted, major projects commonly have very long life spans, making it necessary to ensure the project is ready to be launched when a sponsor is found.

The Volpe Center completed a commercial feasibility study in 1997 to assess the potential for partnerships on high-speed rail projects. The study concluded that projects have "partnership potential" when they are attractive to both the private and public sectors. It is also essential that the total benefits of HSR exceed total costs and that annual revenue from such projects exceed their annual cost.

Echoing Mauri's assessment that HSR proposals have a long life span, Dan Leavitt introduced discussion of the California High-speed Rail Authority's (CHSRA) proposal by cautioning that any discussion of putting HSR into place in California *today* was not feasible. Instead, Leavitt noted that it would take at least ten to fifteen years to implement the authority's proposal and emphasized that HSR was oriented toward a long-term view of the state's development. "What kind of state do we want to have 20 to 50 years from now," Leavitt asked rhetorically.

Leavitt introduced the Authority as a public agency established in 1997 to develop a HSR proposal for the state. Leavitt furnished growth forecasts for California in framing his presentation of the Authority's proposal for a HSR system potentially connecting San Diego, Los Angeles, the Central Valley, and San Francisco. He cited projections that California's population will increase from 33.5 million in 1999 to 45.7 million in 2020. Much of the growth, Leavitt predicted, will be in Southern California—in the Inland Empire, Santa Clarita, and the Antelope Valley. Population in the Central Valley is also expected to grow considerably during that time, increasing to 5 million people by the year 2020.

While the Authority will disclose its proposed system route and other important details in its December 1999 Business Plan, Leavitt offered a progress report on the Authority's workplan. The agency is focusing on a route that will provide the highest projected return on the investment. Although MagLev is also under consideration, pending the results of MagLev projects in Germany and Japan, the system would likely use high-speed steel wheels on steel rails and would travel up to 220-mph like the French TGV trains. It would

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be a double-track, grade-separated system that is isolated and fenced. Noise and vibration impacts would be felt primarily in rural areas where trains would go full speed. Leavitt explained that some trains will likely be express, some skip-stop, and some local, and noted that express travel times between San Diego and Los Angeles would be one hour, and between San Francisco and Fresno, one hour and fifteen minutes. The high-speed trains would also carry passengers between the downtowns of Los Angeles and San Francisco in 2.5 hours. To attract more riders, trips would generally be priced at half the price of airfare for the same destinations.

Needed are additional ridership forecasts, corridor evaluations, and financial analysis, Leavitt noted. Nonetheless, current projections list the capital cost of the statewide system at \$25 billion. The Authority anticipates \$888 million in operating revenue per year, and \$551 million in annual operating and maintenance costs from the system, and by 2020, ridership is projected to reach 32 million passengers each year.

The high capital cost of CHSRA's proposed system would require public finance, Leavitt observed. For example, a $\frac{1}{4}$ ¢ sales tax for 20 years could fund the system. Anticipating that this point would fuel considerable debate later in the session, Leavitt advanced two arguments. First, when air travel and highway motoring were new modes, they too required tremendous initial subsidy. Second, while the Authority acknowledges that generous public subsidy is needed to build HSR, Leavitt asserted that it was in the best interest of the state to supply this new mode of travel.

Norm King, the final speaker, responded to Leavitt with a strong critique of the HSR proposal for California. In opening statements, he argued that high-speed rail does not achieve its purported objectives and also questioned the equity of tremendous subsidies that will benefit the most wealthy travellers—air and train users. King called the economics of the Authority's proposal shaky and claimed they have worsened over time. While the premise of high-speed rail is most appealing, he asserted, it would increase sales taxes on all Californians to provide travel to a few and would do little for the highway mobility of the many.

King argued that HSR is feasible only if one adopts the assumptions of the Authority's feasibility study. He contended that the system's expected time savings are exaggerated and that only 5 percent of intercity trips would be diverted to rail. With such insignificant congestion relief, any statement made that HSR will help highway travel is fallacious, countered King. Instead, he noted, airports stand to gain the greatest congestion relief from the proposal, supplying two-thirds of the projected benefits to affluent air travellers.

King questioned the feasibility study's assumption that there will be no airport expansion. Even if the state cannot expand its air system, he argued that alleged air congestion relief is overstated. He explained that only 15 percent of total California air traffic would fall in the HSR corridor. If 35 percent of air travel was diverted to rail, the reduction in air passengers equals roughly 5 percent—a minuscule amount. To close his discussion, King said it was intuitively obvious that the proposal does not deliver purported benefits. It makes no sense to subsidize a mode that leaves highway congestion unaffected and that costs more per

passenger mile than any other mode. There are more productive ways to spend \$25 billion, he concluded.

Moderator Martin Wachs offered Leavitt an opportunity to rebut King's comments. Leavitt countered King's claim that HSR would not address air congestion; he asserted that it would make a difference for air travel in the state, which currently has the worst air traffic congestion in the country. Leavitt's response also focused on the long term benefits of HSR, arguing that it would increase Californians' mobility, facilitate intercity travel, and attract increasing numbers of passengers beyond 2020. HSR would not be a panacea, Leavitt said. He acknowledged that it would not solve Southern California's highway congestion problems, but asked, "What will?" The system will increase mobility, if not decrease congestion, he concluded.

DISCUSSION

A lively discussion followed the presentations. Participants pursued several threads throughout the question and answer period. Many comments focused on the costs and financing aspects of the proposed system. Lewison Lem of the U.S. Environmental Protection Agency asked why the \$25 billion price tag was higher than previous estimates. Dan Leavitt explained that the newer alignment proposed by the Authority was more costly, but noted that additional ridership on the route would offset the increase. Norm King offered an alternative explanation, saying excess revenue was projected to pay for the higher capital cost of the newer alignment. Brian Taylor questioned why sales tax should be used to finance the proposed system. Sales taxes are income regressive, burdening people with lower incomes more, noted Taylor, but the air travellers who would benefit from HSR tend to be more affluent. Moreover, high income people tend to travel longer distances. Taylor asked how the proposal would address the equity questions surrounding who pays and who benefits. Leavitt responded that sales tax provided a steady revenue stream and suggested it was appropriate because HSR will benefit all Californians. It will benefit the users of some transportation modes by providing time savings to all modes. Norm King also added that sales tax was generally the most acceptable funding source for a project like this. While the system's operating revenue will cover operating costs, only one-fifth of the capital costs and debt service will be paid for by users of the system. He later added that the key to any transportation financing problem, whether rail or highways, is to attach the cost of the system to the system user—something the current HSR proposal does not do.

Several participants criticized the planning process for the HSR project. David Levinson of the University of Minnesota observed that the project's proponents seemed to be planning in reverse. First and foremost, he said, planners should ask how \$25 billion could best be spent. Instead of a real alternatives analysis, however, the current process seems to justify why the money should be spent on high-speed rail. Martin Wachs noted that such a criticism should be directed toward the California State Legislature, which directed the study's focus specifically to high-speed rail. Dean Taylor of Southern California Edison wondered what the highway alternative would be if HSR is not built through the Central Valley, but Norm King countered that continuing to build freeways would not help; only better pricing of the current system would address congestion.

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David Lewis of Save the Bay pointed out that land use considerations seem to have been ignored in the planning discussion. Growth forecasts for certain regions are not inevitable, he argued; transportation investments like this one could be used to shape where California's new population will settle. Martin Wachs noted that the federal and state government have the power to influence this issue, but that such discussions were absent. Wachs also added that HSR could be construed as another force of decentralization.

One participant asked the panelists to clarify the difference between inter- and intra-regional high-speed rail. Mauri explained that intra-regional referred to commuter rail within one metropolitan region. It is generally easier to generate political support for financing commuter rail because voters recognize it as an investment that is close to home. Leavitt suggested that the CHSRA has not excluded intra-city services from its consideration; an intra-city link to LAX could be a first phase in Southern California for the statewide HSR project. Peter Hall added that demand for commuter rail in the future will increase. He explained that economic activity will not filter down as fast from current centers as will population growth, bolstering demand for long distance commuting. Dan Leavitt and Norm King concluded with a final debate over the veracity of the CHSRA's benefit projections for the HSR proposal. King acknowledged the Southern California Association of Governments (SCAG) and the Metropolitan Transportation Commission (MTC) based growth forecasts used by the Authority, but rejected the agency's benefit calculations as faulty.

SESSION 4: HIGH-SPEED RAIL AND/OR INCREASED AIR TRAVEL: COMPLEMENTARY OR COMPETITIVE?

Martin Wachs (Moderator)

Sir Peter Hall, Professor of Planning, University of London

Adib Kanafani, Professor and Chair, Department of Civil and Environmental Engineering, UC Berkeley

Peter Hall and Adib Kanafani each provided thorough reviews of one of the major issues facing inter-regional transportation today: Will increased airport capacity or high-speed rail best accommodate today and tomorrow's increasing passenger travel demand? Marty Wachs, introducing these two speakers, explained that Peter Hall has the perspective of a geographer, and Adib Kanafani the perspective of a civil engineer. However, the balanced argument made by both speakers showed no allegiance to any profession. Rather, both argued that rail can be as viable as air travel, and the two can be used in concert successfully. Underlying the session was a pointed question: Will high-speed rail ever work in California? Hall and Kanafani made clear that rail could hypothetically be successful in California, but major prerequisites must be in place if rail is to be a cost-effective alternative to air travel.

Peter Hall began by describing the multiple high-speed rail (HSR) systems in place across the globe. Other than Magnetic-Levitation (Maglev) systems, all of the high-speed rail schemes operating around the globe are based on the classic rail gauge. Some countries, such as Japan, have built all new, dedicated alignments to support HSR, while countries like Great Britain run their high-speed trains on old alignments they share with other trains. The

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speeds of today's HSR systems vary from 125 to 168 mph, although speeds of up to 218 mph are anticipated on lines being planned in France. According to Hall, by 2010, almost all the major cities of Europe will be linked by some form of high-speed rail, either through upgrades of existing track or new, dedicated lines.

The result of the expansion of HSR in Europe will be a considerable reduction in the travel times between the core urban cities of the European Union. However, just because Europe will be almost entirely linked by HSR in a decade, one should not assume that people will use the system to get from one corner of the continent to the other. Instead, Professor Hall provided theoretical "break even" distances at which rail's utility equals that of flying in the eyes of a traveler, based on cost and travel time for the two modes.

- Traveling at 125 mph, a person could go 330 miles before switching from rail to air.
- Traveling at 188 mph, a person could go 600 miles before switching from rail to air.

Currently, the air corridors between major European cities are some of the densest in the world. When high-speed rail opened between Paris and Marseilles, there was a steep decline in air traffic between the cities. Hall suggested that one might expect similar declines in air traffic in other corridors of about 200 to 250 miles in length. Significantly, however, many of the airports in the region are busy building not only rail connections, but HSR connections to their air terminals.

The major European airlines are going to develop multimodal operations, joining rail with air. Similar to the situation in the United States, European airports are reaching a capacity crisis. As in the United States, the air-based solutions being considered, from adding more terminals to building a runway in the North Sea, inevitably stir up political storms, Hall explained. High-speed rail seems set to replace much short-haul air traffic, trips up to 200 miles long.

High-speed rail has impacted development and land use around Europe. Back office functions for major corporations have been moved out of London to cities like Redding which have HSR stations and cheaper land and living costs. Charles de Gaulle Airport has a high-speed rail link, and is becoming almost a city of its own. Similarly, a huge development in Lille, France is being based on the linking of several nations' HSR systems. The same types of developments occur around HSR stations in Japan.

High-speed rail has not only impacted air travel in Europe, but has provided a focus for urban development on the continent. Because of the airport capacity crisis in Europe, airlines have been supportive of this transformation, and are operating their air routes in conjunction with high-speed rail. Would this work in California? Hall asked, "who will be the Henry Huntington of HSR?" recalling the owner of the Pacific Electric Railroad who built the network of streetcars that linked the towns of Southern California at the beginning of the 20th century.

Adib Kanafani picked up the discussion where Peter Hall left off. While high-speed rail seems to be successful in Japan and Europe, why can't HSR get started here? Why do

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projections for a high-speed rail network in California never garner the ridership that rail attracts in Japan? Kanafani answered the question with HSR “Ingredients for Success,” key criteria without which high-speed rail will not work:

- Concentrated demand
- Competitive costs
- Efficient local distribution
- Network effects (the cumulative effect of HSR linkages between multiple cities)
- Institutions
- Large population base
- High trip generation rates
- Dense distribution of cities

Judged by these criteria, California is not a prime market for high-speed rail. For example, there is an order of magnitude of difference in the population densities of Japan and California. The costs of high-speed rail are more competitive in countries where automobiles are taxed more highly, including gas, parking, and licensing costs. Compared to Japan or France, driving a automobile is extremely inexpensive in California.

As Kanafani explained, despite its speed, the complexity of transferring to and from other modes to access HSR can make it slower than door to door trips of automobiles; therefore, a good distribution system must exist to transport people between stations and their homes. In Paris, the Metro transit network allows people to be deposited within 500 meters of almost any point in the city. In California, it is unlikely that HSR stations will be as well distributed through a metropolitan region as airports already are. If you can reduce access time to the HSR network, then it could be competitive with air. In California, no network of feeder markets exists along the line haul between Southern California and the Bay Area to encourage use of HSR. Also, HSR connections at airports would be needed, as are being built in Europe. The system planned for California doesn't include those airport connections.

Kanafani compared not only California to Europe but also the costs of high-speed rail to those of air and auto travel. To what extent can the large subsidy required to build and operate HSR be justified on the basis of rail's reduced external costs, as compared to air travel and automobile travel? In California, the aviation balance sheet, including national expenditures, generates a surplus of \$86 million yearly, just counting monetary costs and benefits. The California highway system generates a huge fiscal surplus, at \$3.7 billion per year.

Although both air and auto travel seem to operate at a surplus, adding in their social costs means that these modes are subsidized as well. Including social costs, auto travel is subsidized at about 0.1 cents per passenger kilometer, and air travel at 0.4 cents per passenger kilometer. However, HSR would need to be subsidized by 9 to 10 cents per passenger kilometer. In other words, the subsidy required to especially build, but also to run high-speed rail in California is enormous compared to subsidies of air and auto travel, even including social costs.

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Professor Kanafani said that measures of social costs are uncertain, and one could increase them to a point at which rail would be competitive with air or automobile travel. However, if increasing the value of social costs, one must assume that the external cost of the electricity needed to operate a high-speed rail line is included in the price of electricity. One could cut much of the subsidy for HSR by taking advantage of the development potential at rail stations, using that revenue to fund the rail lines. Even so, comparing the cost of HSR to other modes, or the demographic and development conditions of California to that of other countries, high-speed rail seems to have an uphill struggle to become a viable travel mode in California.

DISCUSSION

In discussion, participants had questions about both the financial feasibility of high-speed rail and its effectiveness as a transportation option in California. Steven Howards asked how high-speed rail developers might capture the revenue generated by development around high-speed rail stations. Professor Kanafani explained that in most rail privatization schemes, the investors are given the development rights around rail stations in order to recoup their investment, and high-speed rail investments could work similarly. Dan Leavitt of the California High-Speed Rail Authority asked about the costs of building new freeways, compared to HSR construction costs. Professor Kanafani responded that while it is prohibitively expensive to build freeways in urban areas today, along the line haul portion of the planned HSR through the Central Valley, the cost of building a freeway is actually quite low.

Some participants wondered whether high-speed rail might operate better as commuter rail in California than an inter-regional travel mode. Peter Hall explained that the balance between making enough stops on a rail line to pick up sufficient passengers but making few enough stops to maintain high average speeds can be complex. However, rail planners in Japan and elsewhere have developed schedules including skip-stops and express lines that allow that balance to be made. Peter Hall also suggested that other countries have differing policies on the use of HSR for commuting. France discourages it while Britain allows it. Adib Kanafani added that you need to consider the access to the main stations, both in the suburbs and downtown, if HSR is to be used for commuting. It would not be a problem to start building an HSR system incrementally as commuter rail, if voters and the government were to want that. Connecting nodes in a polycentric urban region would be a very attractive solution to relieving congestion.

SESSION 5: HIGHWAYS AND METROPOLITAN DEVELOPMENT: PAST EXPERIENCE AND FUTURE PROSPECTS

Donald Shoup (Moderator), Professor and Chair, Department of Urban Planning, UCLA School of Public Policy and Social Research

Brian Taylor

John S. Adams, Professor of Geography and Public Affairs & Planning, University of Minnesota

Judith Corbett, Executive Director, Local Government Commission

Randall Crane, Associate Professor of Urban Planning, UCLA

It would be difficult to overstate the impacts of the Interstate Highway System on urban development. Much of the planned highway system in this country has already been built, but Brian Taylor suggested that the highway plans of the past, both realized and unrealized, indicate that today's urban environments could have been different if highway builders had been more cognizant of the urban fabric when they were designing and constructing these roads. According to John Adams, however, the relationship between transportation and land use over the past decades is still poorly understood and requires more study. Because of political and fiscal constraints, suggested Judith Corbett, highways and freeways are no longer being built today at the fast pace of several decades ago. This has provided governments and researchers with a chance to rethink the transportation and land use connection, as outlined by Randall Crane, and how transportation infrastructure can enhance the urban environment, not degrade it.

Brian Taylor began by giving an overview of interstate freeways and local travel. Freeways today make up only one half of one percent of all road miles in the nation. However, freeways accommodate about one third of all travel inside metropolitan areas and one quarter of all travel outside metropolitan areas. Early freeway plans came from several places – municipalities, states, and the federal Bureau of Public Roads. Each viewed the purpose of an expressway system differently, and each had a different vision of how they would be built. In the end, the preponderance of federal and state money funding freeway construction ensured that the plans of these echelons of government would win out. Today's result is an Interstate system that links all major cities in the country, from downtown to downtown, with the same basic design standards used in rural areas governing the urban freeways as well.

As Brian Taylor described, early local freeway plans for cities sought to reduce traffic congestion, especially in central areas of the city, and preserve the viability of business districts. The typical metropolitan expressway plan included smaller facilities, lower design speeds, and simpler interchanges than today's freeways. Furthermore, these plans envisioned denser networks, were closely tied to existing boulevards, were linked to adjacent land uses, and accommodated several modes in some cases. Many of these plans appear surprisingly relevant today, especially their redevelopment and multimodal components. For example, the 1939 Los Angeles Plan prepared by City Engineer Lloyd Aldrich was explicitly multimodal, outlining a regional busway system to be built in concert with the auto freeways.

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The federal Bureau of Public Roads and the Division of Highways in California were more concerned with stimulating intercity travel than building regional networks inside cities. Early, rural freeway plans were intended to stimulate farm-to-market travel and revive depressed rural economies. However, federal and state highway planners knew that in order to justify the expense of this inter-regional and national road network, the roads would have to connect major cities. According to Taylor, data show that most travel was local, so putting the freeways *through* cities would provide another justification for their construction. A 1939 report comparing toll roads and free roads predicted that only one percent of the system would be financially self-sufficient. The report concluded that high quality, high design-speed, grade-separated roads would be needed in order to attract people to the tolled system. But when the tolled system was deemed financially infeasible, the report's authors argued for the same high design standards for the alternate, free highway system, despite the fact that overcoming the disincentive of tolls was no longer an issue.

Today's freeway system, whether in Los Angeles or elsewhere, more resembles the federal and state vision, than the early local plans for freeways. Looking at the funding sources for freeways helps to explain what got built, indicated Taylor. During the Great Depression and World War II, Los Angeles had no money to build its road network. Once the federal highway program was initiated in the 1950s, it matched state or local funds at a ratio of 9 to 1, and state governments were put in charge of construction. Also, because the Interstate system was fixed in mileage but not cost, states were encouraged to design ever larger, higher capacity systems. In California, the state's highway plan resembled the federal system, where only one criteria out of ten for a road acknowledged intracity travel, even though planners and engineers knew that most traffic occurred within cities.

In the end, the predictions for today's freeway system overestimated rural travel by a third and underestimated intracity travel by eighty percent. Most travel is still local, even after the construction of freeways whose main purpose was ostensibly to connect cities across the country. One can only speculate how today's cities would be different if the early, locally-developed freeway plans had been built instead. These plans didn't seek to banish autos from the urban environment, but they did pay far more attention to integrating them into the urban fabric.

John S. Adams continued the discussion of transportation and land use by focusing on the more recent past. He described an ongoing analysis of the connection between highways and development using empirical road construction and land use data. Politicians often seek transportation projects in their areas, but do such projects actually encourage economic growth, Adams asked? Another question Adams has sought to answer is the "chicken-or-the-egg" dilemma: Does land development promote transportation improvements or do transportation improvements promote land development?

Adams used a twenty-four county study area in Minnesota to build a database of development and highway construction over a period of thirty years to the present day. Areas were classified based on land use and "location." Location accounts for key characteristics of a place such as distance from the urban core and level of existing development. The correlation between transportation improvements and the level of

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development was analyzed, as well as the lead or lag time between a development and a transportation improvement. In this way, Adams hoped to unearth whether developments were driving transportation improvements, or whether road building encouraged more development.

The results of this analysis are not obvious, nor easily explained, admitted Adams. The highest correlation between transportation and development appears to have occurred in the middle 1980s. Industrial development appears to have been most correlated to transportation improvements during the late 1970s and early 80s. In general, the 1990s have shown a far less predictable relationship between transportation and development. According to Adams, industrial developments may depend particularly on location and proximity to transportation improvements. Offices also appear to depend on transportation improvements. In general, Adams hopes that further analysis will improve our understanding of how transportation and development interact at the local level.

Judith Corbett moved the discussion into the present with a discussion of how transportation and development interact in the political sphere. The trends seem to indicate that local governments are reclaiming some of the control they once had over the transportation / land use connection. Corbett explained that today, highway construction is a political act, and touches on issues such as sprawl, traffic congestion, and preservation of open space and agricultural land. Communities and politicians have expressed concern for these issues nationally, as well as in California.

In 1991, the Local Government Commission brought together leading “New Urbanists” such as Peter Calthorpe and Andres Duany to develop fifteen principles for new developments. Corbett listed these principles, including infill housing, mixed land uses to promote walking, a concentration of development around transit, a strong downtown, and urban boundaries. The Local Government Commission took these principles to California local elected officials, and by and large the officials have supported them. One hundred twenty counties and cities have adopted these principles in their general plans.

Elsewhere in the nation, land use and transportation policies are beginning to reflect New Urbanist principles as well. In the Atlanta area, local governments weren’t engaging in comprehensive land use planning, and sprawl and congestion have become a major problem. Investors, Corbett claimed, were losing interest in the region, and business leaders became frustrated. In response, the governor of Georgia has taken control of land use planning around Atlanta, and has begun to implement policies that connect land use and transportation. Cities like Addison, Texas (near Dallas) and San Diego are also building dense, mixed use neighborhoods. In the process, Corbett suggests that freeways have become less important, and the transportation / land use connection can presently be seen in sidewalks, local streets, and transit.

Randall Crane finished the session by looking towards the future. He asked a series of questions that planners, government officials, and other people involved in transportation must be answer or at least think about if there is to be a better balance between the transportation network and development in the future. These are some of his questions:

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- How did we arrive at our current situation?
- What explains the current situation?
- What do we know about transportation and its relationship to development?
- What do these facts mean?
- Which are good, which are bad?
- What does this imply for policy?
- What does New Urbanism really imply about where people want to travel?
- What types of travel do we value?
- How important are different kinds of access relative to each other (jobs, people, shopping, work, etc.)?
- What is accessibility and how is it different from mobility?
- Who should plan transportation investments?
- Should they emphasize regulation or market influence?

The key, Crane explained, is that the transportation plans we develop in the future should be well informed. For local plans, local knowledge will be crucial. Good local knowledge requires collaboration. It is too soon to say whether New Urbanism will have the positive effect on land use and transportation which its proponents ascribe to it. However, transportation and land use can work in concert if people are thoughtful about what they plan and build.

DISCUSSION

Brian Taylor and Norm King pointed out that both land use and transportation decisions are influenced by user costs, whether those are the costs of using a road or moving into a new subdivision far from the central city. For transportation, any investment we make in the road system will lower costs for users, thus increasing travel. John Adams suggested that sprawl could be controlled by making people pay the true costs of new subdivisions far out in the suburbs by limiting federal and state subsidies to new communities.

Rusty Selix of the California Association of Councils of Government (CALCOG) questioned why, even with few new freeways being built, development continues expanding on urban fringes. Judith Corbett pointed out that much growth is natural, and infill housing can't fill all of the need. By following New Urbanist principles, however, there is potential for making new developments balanced and sustainable.

SESSION 6: THE RESTRUCTURING OF MARITIME TRADE: MEGA-SHIPS, MEGA-PORTS, MEGA-IMPACTS

Randall Crane (Moderator), Associate Professor of Urban Planning, UCLA School of Public Policy & Social Research

John Vickerman, Principal and Executive Vice President, Trans System Corporation, Reston, VA

Lillian Borrone, Director, Port Commerce Department, The Port Authority of New York & New Jersey

John Husing, Principal, Economics & Politics, Inc., Highland, CA

John Boesel, Executive Vice President, CALSTART

Symposium participants directed attention in this session to the significant changes reshaping the maritime trade industry today. The growth in ship size, the nearly universal use of containers, and the concentration of maritime activity at fewer, larger ports place major pressures on port operations as well as on local and regional landside transportation infrastructure. This session first explored the general intermodal and logistics environment in which maritime trade functions today. Subsequent presentations examined responses to current challenges to port facilities and landside goods distribution through the experiences of the New York - New Jersey Ports, and ports at Los Angeles and Long Beach. Throughout the session, panelists strove also to address the environmental impacts brought by trends in the shipping industry and port development.

John Vickerman outlined changes and trends in maritime trade, setting the stage for location-specific experiences by the panelists to follow him. He described the maritime industry as an integral part of intermodal freight movement, and asserted that intermodal shipping was growing, becoming increasingly competitive, and aligning itself to optimize efficiency and to improve modal integration. The result for carriers, he claimed, was increased globalization, tougher competition, greater emphasis on strategic planning, and growing information exchange, all which promise an intermodal goods movement system that is highly efficient.

Vickerman also offered some observations on the logistics industry. He noted that shipping customers want more service but seek to pay less. He also pointed out that the inland leg of a product's journey from manufacture to market represents a remarkable 75 percent of the total cost of its transportation. This makes large consumption centers like Southern California and the New York-New Jersey metropolitan region—and consequently their respective ports—attractive to shippers. According to Vickerman, the logistics industry has grown increasingly concentrated, with the top twenty-odd carriers controlling more and more of the container slots in the global shipping system. Several global alliances among shippers as well as increasing integration in goods movement in general have created a virtually seamless worldwide logistics system.

Vickerman focused his final comments on the growth of container shipping and its consequences for port activities in the U.S. Worldwide, freight movement is growing 9 percent annually, and in the United States, freight tonnage that is shipped in large steel

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containers (transferable to rail or truck) is growing 6 percent to 7 percent annually. By any planning horizon, Vickerman maintained, every American port that identifies itself as a port serving containerized traffic will have to double or triple in size by 2020. Ports will have to handle ever larger ships, as maritime shippers turn to ever larger vessels. The more containers and twenty-foot equivalent units (TEUs) a ship can carry, the lower the cost per slot on the ship; this favors gigantism in ocean vessels. Ships are commonly larger than 4,000 TEUs, and a 6,000 TEU vessel can barely squeeze through the Panama Canal, but one German firm is building a 12,000 TEU boat and a 14,000 TEU ship is on the drawing board. Ports will need to accept increasing numbers of containers and respond to growing demand for connections to local landside transportation. The Port of New York /New Jersey will need more deep (50 ft.) channel capacity to accommodate deep draft vessels, for example, and much of the growth at Los Angeles/ Long Beach Harbor will be in intermodal, ship to rail transport. Vickerman predicted that the U.S. port industry will respond to these market conditions by expanding capacity for huge ships, by acquiring more cranes—as Singapore has—to load and unload containers, and by shifting to 24-hour operations. Another way ports may increase terminal productivity, he noted, is to decrease the amount of time that containers dwell landside, between modes.

Vickerman briefly alluded to the environmental concerns of increasing the scale of port activities. He noted that the California Coastal Commission has ruled against the development of any new ports. But, Vickerman asked, how will state ports keep up with demand otherwise? He emphasized port survival as a high priority, and advised the port industry to increase terminal productivity, drive down terminal costs, and improve landside access in order to remain competitive.

Panelist Lillian Borrone discussed the challenges faced by the Port Authority of New York and New Jersey in the new maritime shipping environment. By way of introduction, the bi-state and self-financing agency was created in 1921 to stem conflict between New York and New Jersey over control of the harbor. The Authority is a "landlord port" that strives to carry out its mandates as a private business to the greatest extent possible, Borrone said, and the port accounts for 2.3 percent of the gross domestic product of the NY-NJ area.

Borrone acknowledged the general pressures on U.S. ports to lower costs and increase efficiency. Ports, she observed, have tremendous potential for creating the largest bottleneck in the intermodal goods movement system. If ports define their goal as moving goods as seamlessly and quickly as possible, they must invest in the right equipment, use the most sophisticated operating technologies, and improve landside connections.

According to Borrone, there is an environmental rationale for expanding port operations. Increasing port capacity can protect not only jobs and economic activity, she contended, but also environmental quality. Borrone constructed her argument on the premise that if the New York/New Jersey port does not meet demands for deeper channels, greater landside area, and so on, port traffic could be diverted to Baltimore. But because the New York-New Jersey metropolitan area would remain the final destination of most goods, vessel shipments diverted to Baltimore would only have to be trucked north. Trucking goods from the Baltimore port to the 18 million consumers within the 40-mile radius of the Statue of

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Liberty as well as the 80 million consumers in the wider NJ-NJ metro region would add significant time and money costs. The needless trucking would also harm the communities through which the goods were carried; in terms of pollution and congestion, the consequences of trucking cargo from Maryland up the Jersey Turnpike would be disastrous, she cautioned. Moreover, rail would be cost prohibitive. The "do nothing" alternative, therefore, promises serious adverse environmental impacts for the region, Borrone claimed.

While the Port Authority wants to achieve growth, it also aims to incorporate community needs and concerns. Providing waterfront access for recreation and redevelopment, designing facilities that are compatible with local objectives, supplying job opportunities, and promoting economic development that could drive ports growth are all among the agency's goals, noted Borrone.

Borrone closed her presentation by outlining the ways the port is looking to improve its infrastructure. First, deeper water is extremely important. Borrone recounted when the Regina Maersk, a 6,000 TEU ship, called at the port. The ship came to NY-NJ to make a point: at over 1,000 feet long and 137 feet wide and with a 47' draft, she needed more depth. Second, the agency is looking toward greater investment in port facilities such as cranes with greater weight-bearing capacity and improved container storage and stacking systems. Third, landside additions are needed to boost the number of containers the port can serve each year. Borrone argued that increasing operational efficiency via lease negotiations and round the clock port activity will only go so far. The port plans to reuse old facilities in Bayonne, NJ, and on Staten Island but the port will still need to create new land, by using old brownfields or landfills or by building new land out in the water. To mitigate such projects, the Authority is considering harbor and wetland restoration plans. Finally, Borrone observed the importance of shippers' distribution needs. As a gateway port to a 10-state market, the port needs to enable containers to move as quickly as possible from the port facility into the distribution network. Truck and short-haul rail connections are two areas of critical focus for the port.

Panelist John Husing revisited the discussion of distribution networks for ports. Husing observed with dismay that growing numbers of warehouses and distribution facilities are being built in Southern California's Inland Empire, even though most materials land at the Los Angeles International Airport or at the Ports of Los Angeles/Long Beach. This trend contributes to poor geographic organization of freight networks in Southern California, he asserted, and raises grave concerns about the increase in trucking activity that Inland Empire communities can anticipate.

Husing explained how low land costs and Southern Californians' lust for horizontal living have fueled housing development in places like Ontario, Rancho Cucamonga, and Corona, where land was available. Low housing costs have made it difficult to deter home buyers from settling there, although local jobs are scarce. Following the lead of housing developments, boxy manufacturing and warehouse facilities have also been lured by low costs. Lower labor costs have also attracted employers in the freight distribution industry. Local job creation may stem long distance commuting typically required of Inland Empire residents working in job-rich areas further west. Nonetheless, Husing predicted, the rise of

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distribution centers in the area will generate new problems from the associated truck traffic. Ferrying goods from coastal areas to the Inland Empire and back will exacerbate already grave congestion and air pollution problems. Husing used his conclusion to propose a cargo distribution system that would not require goods to be distributed from the Inland Empire by freeway; an "Alameda Corridor East" could move goods without creating overwhelming smog in the area.

DISCUSSION

Commentator John Boesel encouraged the panelists to discuss further the conflicts with environmental and community interests that can be created by increased port activity. Husing asserted that the Port of Los Angeles/Long Beach should assist the Inland Empire with constructing a second Alameda Corridor. Vickerman observed that communities surrounding ports often loudly oppose port expansion and that many want quality of life improvements to compensate for being a pass-through port. Vickerman suggested that amenities like waterfront improvements, parks, and bike paths are within reach. Borrone added that buffer areas are needed between 24-hour ports and adjacent residential communities to reduce disturbances from port noise and pollution.

Boesel asked how the port industry is responding to growing opposition to diesel fuel use, noting that the California Air Resources Board lists diesel particulates as a carcinogen. Borrone explained that the NY-NJ Port Authority is reevaluating how it can better manage every aspect of facility operations, from waste handling to emissions. The port is trying to use compressed natural gas for its vehicles and is also looking at new engine technologies. William Kleindienst later underscored concern over harmful diesel pollution, asking at what price we should continue to allow diesel trucks, forklifts and other machinery to pollute, regardless of the benefits ports bring. He suggested that shippers and manufacturers absorb the cost of environmental degradation, even if it is reflected in higher prices on consumer goods. Boesel added that clean fuels are becoming more common and that in California many funding opportunities exist to use them.

Boesel also asked the panelists about proposals for truck-only lanes to accommodate the major increase in truck traffic. Vickerman opined that truck lanes make sense, but that funding is problematic. There is no money for removing a commuter lane and devoting it only to trucks. Borrone noted that the Port Authority's truck-only "Portway" idea would involve a fee or toll.

Financing port improvements was a final topic touched upon in the discussion. Noting that almost every port in the U.S. is subsidized (Los Angeles / Long Beach is the exception), David Luberoff asked if ports can make the investments needed to upgrade their facilities under the current institutional structure. Borrone said the Port Authority taps capital markets by using the capital streams from other Port Authority NY-NJ businesses. The agency also looks at public/private and equity partnerships to get the capital needed for investments. An earlier comment by Vickerman explained how ports are compelled to provide improvements. Carriers use the competition between states for port industry jobs both to get concessions and better facilities. Competition for jobs between states is very high, even with

zero-unemployment economies, and no politician wants to give away jobs. Equipping the ports to meet current demands of the shipping industry becomes the only way.

SESSION 7: THE POLITICS OF RECENT MEGA-PROJECTS: LESSONS FROM THE SUCCESSES AND FAILURES OF MAJOR INTER-REGIONAL TRANSPORTATION PROJECTS

LeRoy Graymer (Moderator), Founding Director, UCLA Extension Public Policy Program

David Luberoff, Associate Director, Taubman Center for State and Local Government, Kennedy School of Government, Harvard University

Inter-regional "mega" transportation projects are among the most visible, expensive, and contentious of all public investments. New freeways, airports, and rail systems can have transformative effects, generating significant public benefit but also generating huge social, economic, and environmental impacts. Their money costs can be staggering, as witnessed by the \$12 billion Central Artery Project in Boston, and community organizations and interest groups have become increasingly well organized and vocal in their opposition to and their demands from these behemoth undertakings. In this session, speaker David Luberoff examined the history of mega-projects in the postwar period through the present. He discussed the phenomenon of large-scale transportation projects in the context of the postwar building boom and the construction slowdown of the 1970s, and described the new approaches to such projects that have been adopted today. Focusing on the changing role of community interests and project mitigation, the unique lifecycle of large-scale projects, and their complicated financing, he also contemplated what role mega-projects will play in the future.

An interesting story explains the genesis of the research underlying Luberoff's talk. When he and his colleagues began looking into Boston's "Big Dig," they observed that some of the same figures who fought for Central Artery funding in the 1990s had in fact been staunch anti-highway and anti-airport activists in the 1960s and early '70s. This odd alignment prompted questions about the dynamics of the Central Artery and other big infrastructure projects, and here the story begins.

Luberoff examined the beginnings of mega-projects in the building boom that followed World War II. The period from the mid-1950s to the mid-1960s saw the construction of Boston's original elevated Central Artery, as well as other extremely disruptive urban freeway projects in New Haven, Baltimore, Los Angeles, and other cities. The scale of these projects inevitably made them extremely disruptive to the existing urban fabric as they sliced through and sometimes obliterated entire neighborhoods. According to Luberoff, the prevailing ethos at the time looked favorably on new technologies like the automobile and airplane, and political leaders eagerly worked to retrofit their cities to accommodate these modes of transportation. Updated infrastructure, as well as larger office buildings and new housing developments, were viewed as keys to urban renewal at a time when American cities were fearful of decline.

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Other factors also contributed to the building boom. The country's emergence from the New Deal and World War II inspired tremendous optimism in the federal government as the best motor for change. Generous federal funding for urban renewal projects made such endeavors attractive, especially airports, which by the late 1950s had become largely self-financing from lease revenue. Not surprisingly, local officials were happy to exchange unfunded public parkways for federally funded urban highways. Moreover, these large investments could be made without having to submit proposals to the voters and ask their permission; this led to burgeoning construction. The emergence of new national political coalitions—such as the highway coalition composed of automobile manufacturers and oil companies—also drove the mega-projects of the postwar.

By the mid-60s, Luberoff explained, growing skepticism toward urban renewal projects emerged, accompanied by a noticeable slowdown in the construction of large-scale projects. The slowdown reflected several rising trends in thinking about American cities. First, people became increasingly aware of and concerned about the serious disruption produced by such projects. Urban renewal programs had displaced up to 400,000 city residents, and this fact was viewed poorly to say the least. Urban riots and the community power movement were dramatic, as were vocal expressions of inner-city mistrust and hatred of urban renewal. Second, figures like Jane Jacobs and Lewis Mumford led an intellectual rediscovery of the city, emphasizing the urban vitality found in humanly-scaled urban spaces and seemingly chaotic neighborhoods, and casting large-scale disruption in a bad light. Third, the remarkable burst of environmental awareness and legislation, such as National Environmental Protection Act (NEPA), made it conceivable to sue the implementing agencies behind such projects for environmental violations and to require them to address the environmental impacts of their activities. New York City's Westway battle was emblematic of the power of these new protections as well as the community activists who championed them. Finally, fiscal pressures along with federal policy changes that replaced urban renewal with community development block grants contributed to the tremendous slowdown in construction in the 1970s.

The slowdown prompted several responses. Some urged that projects be built underground: the last portion of the Central Artery was buried in the cut and cover method. Other projects, like Los Angeles' Century Freeway—the project that Caltrans sought as replacement for San Francisco's nixed Embarcadero—hovered in a horrible limbo, noted Luberoff. Transit construction, however, remained unaffected by the boom and bust of projects, as few transit projects were being built at the time. Also, moving away from transportation projects, cities began to turn their attention to infrastructure rehabilitation as well as new stadium and convention center construction in abandoned industrial areas.

Today, numerous high-profile, large scale projects beg the question whether we have entered a new era of mega-projects, argued Luberoff. In Boston, the Central Artery is being submerged in a tunnel. When complete, the massive project will replace the highway with a surface-level linear park. Luberoff took participants through a series of slides showing the tunnel construction process as well as how the finished product will look. Luberoff also pointed to the construction of the Century Freeway in Los Angeles as a sign of the mega-project's chastened reemergence. Finally approved in 1979, the project carried conditions

that highway money be used to replace 3,700 units of housing as well as to finance a massive job training effort for the local community. Another recent project noted by Luberoff was the 47-square-mile Denver International Airport. By moving its airport 25 miles east of the city center, Luberoff explained, the city was able to develop an incredibly expanded site in open farmland, where community opposition could not threaten the project. The airport is farther from its city center than is any other major American airport except Dulles, in the Virginia suburbs of the national capital.

While the Boston Central Artery, Los Angeles' Century Freeway and Denver Airport are distinct projects, Luberoff argued that they share many of the same attributes. The commonalities reflect not only characteristics of mega-projects today but also the past experience of similar projects: **1) All three projects were seen as tremendously economically significant in their respective regions**, and place-based interests including the local business community, downtown interests, and real estate speculators mobilized accordingly to support them. In Denver, for example, major landowners near the new airport site decided that with time and a reasonable growth strategy, commercial and even residential development would spring up near the airport. **2) Unlike the earlier generation of mega-projects, the newer projects are environmentally and socially sensitive**, Luberoff argued, symbolizing a paradigm shift to "no harm" planning. They minimized environmental impacts where possible, and supplied mitigation where not possible. Describing the economist's principle of *pareto optimality*, Luberoff noted that an accepted *sine qua non* of newer projects was that their construction can leave no one worse off. Indeed, well-organized, impacted constituencies have argued to ensure that their needs are met or to guarantee they are somehow compensated—with job training and neighborhood amenities, for example. **3) Finally, while these projects delivered very localized benefits, their financing distributed costs widely.** The Central Artery, for example, was part of the Interstate Highway System, and the tunnel project received 70 percent of its funding as such. Airline fees financed Denver's airport, and the local citizenry voted for it largely because it would not cost them anything.

The lifecycles of these projects are also unique, contended Luberoff. Although cities have continued to demonstrate demand for mega-projects, project sponsors face significant hurdles if they wish to deliver the project. The difficult and distinct lifecycle of mega-projects expose proposals to multiple veto points, making a "policy entrepreneur" who will shepherd the project through many rounds of authorizations an essential ingredient. Such entrepreneurs have tended to be well connected and very skilled politically. Federico Pena and Fred Salvucci performed this role in, respectively, Denver and Boston. Additionally, project costs can escalate dramatically from initial estimates. While costs may be deliberately underestimated in some cases to increase a project's appeal, in other cases mitigation becomes tremendously expensive. Because project planning aims to "do no harm," these projects can involve enormous mitigation that significantly changes the project's scope and price tag. Luberoff suggested that interest groups that can make a credible case that they have a problem, even if it is only tangential to the project, can receive funding. The Artery project, for example, agreed to fund \$2 billion in transit commitments that were unrelated to the project, Luberoff said. While estimated at \$2.5

billion in the early 1970s, cost projections currently place the Big Dig's final bill at \$12 billion to \$13 billion.

Reflecting on these trends, Luberoff concluded his talk by sifting out meaning for the future. He anticipates inter-regional competition for high-value businesses will not only persist, but also intensify. Place-based interests with large, fixed investments in cities will continue to push for the mega-projects, seeing such projects as keys to their area's future economic development and success. Luberoff also believes that financing wildly expensive projects will continue to be problematic. Future mega-projects consequently will be fewer in number, more strategically located, and creatively financed.

DISCUSSION

Participants used the discussion session to revisit the Denver Airport project, to think more about behind-the-scene politicking for mega-projects, and to speculate about mega-projects in the future. Bev Perry, Mayor Pro Tem, City of Brea, raised the point that relocating the Denver Airport from the city to undeveloped farmland just shifts the problem geographically. She argued that retail and commercial development would soon follow the new airport, disregarding concerns about smart growth and open space preservation. Luberoff conceded this was a problem, but noted that almost no one lived near the new site. At the same time, residents near Stapleton, the old facility, complained bitterly of noise and traffic. Unfortunately, officials responded to those voices and not to land use issues. Larry Magid, California Alternative Energy & Advanced Transportation Financing Authority, observed that Stapleton's proximity to central Denver made it seem a far more convenient site for an airport. Why then was the old airport torn up and not retained for potential future use? Luberoff reminded participants that the recession in the late 1980s hit Denver extremely hard, and that in times of economic trouble, development advocates often take control of the Chamber of Commerce. In the case of Denver, in the early 1980s people could argue that Stapleton was too congested, and in the late 1980s, that a new airport would resurrect the economy. Travel time to the airport was not a present concern, but an issue for "tomorrow," when traffic grew; thus, there was little pressure to address potential congestion. Finally, the plan had always called for Stapleton to close; to attempt to keep it open would have opened a Pandora's Box.

Mel Webber, Professor Emeritus, University of California Transportation Center, asked Luberoff whether corruption problems surrounded these projects. "You didn't say who was getting paid off," he remarked. Luberoff argued that interest group politics had replaced the political machine in the United States. Interest groups compete for attention, and when there is the perception that the cost of a project doesn't matter—as there was with the Central Artery—some groups become extremely vocal. In the case of the Denver Airport, real estate interests infused Pena's campaign coffers with the cash that helped him mount a reelection fight in 1987. Luberoff noted the ethical ambiguity of such "legal" contributions. In a final note about the airport, Mike Armstrong of the Southern California Association of Governments, added that federal support for the Denver project was based at least in part on claims that a new airport would reduce national air traffic delays and it could allow quick responses in inclement weather conditions. To date, none of this has materialized, he said.

Al Perdon, JE Everdrup Corporation, asked whether we need to do things differently now in order to realize large projects. Luberoff maintained that some projects, such as the San Francisco Airport runway extension, were currently within grasp. Nonetheless, while transportation spending is high, it is used primarily for maintenance and some development at the city's urban fringe. Asked how he would counsel the high-speed-rail proponents, Luberoff emphasized that high-speed supporters will have trouble convincing the people of California that the project is necessary. One strategy is to convince the Los Angeles and San Francisco chambers of commerce that the project is crucial to their survival, and to then hire the best public relations people to assist. A second strategy would be to put the project on the ballot repeatedly until everything is promised to everyone in the tradition of extensive mitigation. A third way would be to remove the decision from the voters and to have the state legislature approve it.

SESSION 8: THE ENVIRONMENT: CHALLENGES TO AIR QUALITY PLANNING AND MITIGATION IN AND AROUND INTER-REGIONAL TRANSPORT FACILITIES

Joanne Freilich (Moderator), Program Director, UCLA Extension Public Policy Program
Tim Carmichael, Executive Director, Coalition for Clean Air
Jack Driscoll, Former Executive Director, Los Angeles World Airports
Jim McGrath, Environmental Planning Manager, Port of Oakland
Lynn Terry, Deputy Executive Officer, California Air Resources Board

Whether caused by cars, trucks, ships, or airplanes, the emissions generated in and around inter-regional transport facilities make them environmental hot spots. Environmental regulations are making expansion of these facilities ever more difficult, while inter-regional and international passenger and goods movement grows. Simultaneously, communities are voicing their concerns, whether they are wary of more pollution, or fighting to retain jobs. The result is a tremendous challenge to transportation planners and elected officials. How do we balance environmental mitigation with growth? The speakers in this panel addressed these issues, while suggesting constructive solutions drawn from their experiences.

Lynn Terry began by pointing out the wide scope of the issue. California already fails to meet many of its air quality goals, and growth in inter-regional traffic will only compound existing problems. However, there have been successes. Vehicle pollution has been significantly reduced, but technology is not advancing fast enough to counter the increase in traffic. Also, federal Congestion Management Air Quality (CMAQ) funds have ironically been hard to secure for air quality projects; this money usually gets spent on traditional transportation investments.

The regulation of aircraft emissions has been a particular stumbling block for CARB, noted Terry. CARB lacks the authority to regulate aircraft emissions, and the Environmental Protection Agency (EPA) has been loathe to take the lead on cleaning up airplanes. In the end, Terry suggested that partnerships between communities, government agencies, and airlines will be necessary to overcome competing regional interests and to implement productive emission mitigation strategies at airports.

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Jim McGrath explained that economic growth and a clean environment need not be mutually exclusive. However, in order to get expansion projects quickly approved and accepted, it may be necessary to spend more money to satisfy all the constituencies involved. McGrath used the example of building an intermodal rail yard in the Oakland Inner Harbor to illustrate his point. The Port of Oakland is responsible for one percent of Bay Area emissions, designating it as an emissions hot spot, McGrath explained. The West Oakland neighborhood by the harbor recognizes the Port as a major source of local pollution, as well as a source of truck-based traffic congestion. In order to meet the concerns of the community, the Port paid for the conversion from diesel to alternative fuels of half the trucks which serve the Port. Furthermore, the Port paid \$30,000 to hire an environmental consultant of the community's choice.

Although working with the community has enabled the Port of Oakland to build its railyard, McGrath warned that more challenges loom. Regional transportation plans do not take into account all the growth that will occur around the port, or the economic restructuring currently underway in the shipping industry. Trucks continue to be a major source of pollution, but they can only be regulated so much before restrictions hurt the local economy as well as the port itself. New coalitions, perhaps between truckers, the Port, and regulators, will be necessary in the future as well. Coalitions provide the political support that allow inter-regional facilities to move quickly on projects, providing substantial economic value.

Jack Driscoll described the comprehensive approach which Los Angeles World Airports has taken to reducing emissions, while struggling to meet colossal growth in air traffic. The dilemma of airports, particularly in Los Angeles, is that while they are a significant source of pollution, they are also huge economic engines. The number of air passengers has doubled over the past fifteen years, and is likely to double again over the next fifteen years. Between aircraft engines, which are barely regulated in terms of emissions, and the huge numbers of vehicle trips to and from airports, airports are major environmental hot spots.

In terms of cleaning up airplane engines, noise and air quality are tightly related, Driscoll observed. Cleaner and quieter engines tend to have less power. Therefore, Los Angeles World Airports has taken some novel approaches to mitigating noise and air impacts. The airport will soundproof 27,000 homes as a part of a noise mitigation effort. The airport will purchase some severely impacted homes outright because the community has requested it. In terms of air quality, instead of just focusing on aircraft engines, the airports are converting on-site land vehicles to clean fuel. This clean fuel infrastructure will also be made available to travelers who park at the airports. All of the gates at LAX will be electrified, meaning airplanes will not need to burn diesel while sitting at the gate.

Shuttle van fleets in the Los Angeles area will all need to switch over to compressed or liquid natural gas in the next three years. An Electric Vehicle (EV) rental car program has been initiated with Budget Rental. Los Angeles World Airports has one of the largest employee rideshare programs in the region. Furthermore, the authority is enhancing bus transit between its airports. According to Driscoll, all of these small efforts have allowed Los Angeles World Airports to incrementally clean up its facilities without impinging on the growth of their major business - air travel.

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Nevertheless, Driscoll admitted that challenges do remain. Truck emissions and traffic congestion are an intractable problem. One solution would be to push a lot of the cargo flights out of Los Angeles International Airport (LAX) to other airports in the region, such as Ontario and Victorville. The LAX Master Plan also calls for a ring road around the airport to disperse emissions. Eventually, the focus must shift to the aircraft themselves to achieve adequate emissions reductions, argued Driscoll. The technology does exist to make cleaner and quieter engines, but regulating agencies have set standards too low, he said. Also, expansion of LAX to accommodate growth will not be easy. Environmental interests must be included in a coalition with the airports and the surrounding community if these projects are to succeed.

Driscoll concluded by warning that the air quality standards for aircraft being proposed at the international level are unacceptably weak. Tim Carmichael continued by discussing the environmental impacts of inter-regional travel at the national and global scales. Carmichael observed that for most of the conference, no one had questioned whether inexorable economic growth, fostered by increased travel and goods movement, was a good thing. Global capitalism and global trade trends are troubling not only to the environment but cultures around the globe, he noted. While this increase in trade has benefits, the impacts are serious as well.

Carmichael pointed out that in truth, Los Angeles World Airports has done more than any other airport to improve air quality, by engaging in a comprehensive mitigation program involving ground surface equipment, aircraft, and traffic to and from the airport. However, at a national level, scant progress has been made. Carmichael suggested that the Federal Aviation Administration holds a trump card over the EPA in developing standards, preferring to facilitate airline growth. Also, environmental agencies have been pointing their fingers at each other in terms of who has the responsibility for cleaning up airports. On the international level, the EPA is practically alone in promoting stricter global aircraft emissions standards.

According to Carmichael, airports are toxic hotspots. Kerosene and diesel, solvents and other chemicals used in maintenance all contribute to the problem. The public has become particularly concerned about the toxic, carcinogenic nature of diesel. Even so, the Carl Moyer Fund, Carmichael notes, which has been set up to ease the transition from diesel trucks to clean-fueled trucks, has had its funding reduced while it should be increasing. Furthermore, the effects of aircraft emissions in the upper atmosphere, released while in flight, are unknown. The prospect of damaging the atmosphere is truly disturbing, said Carmichael, and may drive aircraft standards in the future. Also, air traffic is not the only inter-regional mode of transport with little leadership on environmental issues. The International Maritime Organization hasn't done much to clean up ocean vessel transportation.

Carmichael finished by pointing out that smart growth and inter-regional transport are related. Southern California is the "Great American Funnel" with many Asian-produced goods coming into the Ports of Los Angeles and Long Beach and being transported by train or truck to the rest of the nation. At the same time, there aren't enough safe sites for new

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schools in the region because industrial sites are so polluted. There must be a balance. Not all goods movement must pass through Southern California. It may be environmentally beneficial to spread some of the traffic around to avoid devastating any one region.

DISCUSSION

Joanne Freilich asked the panelists what the prospects were for developing technologies for cleaner ships and airplanes. Jack Driscoll suggested that the technology for cleaner aircraft engines does exist, but it may take 5 to 10 years to see it implemented in new airplanes. Jim McGrath explained the real problem with ships is the existing fleet. Ships have incredibly long useful lives, and turnover to cleaner ships will be very slow. As for trucks, the first priority is to deal with the NO_x emissions, then other aspects of diesel emissions, such as particulates can be taken care of.

The panelists continued to discuss trucks. Although California diesel is the cleanest grade available in the United States, it is a known carcinogen. Furthermore, trucks idle not only at ports, but also at distribution centers and delivery points, releasing toxins everywhere. Paul Roberts, however, noted that 71 percent of trucks have regional, not interstate travel patterns, and therefore return frequently to a common distribution and maintenance yard. These local-trip trucks could be easily converted to alternative fuels. Jim McGrath agreed; that's what they intend to do at the Port of Oakland, soon. Tim Carmichael reinforced the point, noting that because the local delivery trucks are centrally fueled, switching them to alternatives fuels will not be difficult.

Brad McAllester of the Los Angeles Metropolitan Transportation Authority asked how inter-regional transportation planners and officials should respond when air quality strategies expand beyond ozone, NO_x, and particulates into the issue of global warming. The panel acknowledged that there is still a long way to go before the transportation community will be able to deal with global warming. Tim Carmichael pointed out that we have a carbon-based economy, and only moving away from carbon-based fuels will solve the global warming challenge.

William Kleindienst, Mayor of Palm Springs, asked how a community like his, which tries to use alternative fuels as much as possible, can expand its economic base without increasing the use of diesel trucks in the area. Tim Carmichael said that part of the problem is that the trucking and engine industry both think diesel is just fine. It will take some time before the industry provides cleaner options. Jim McGrath suggested that perhaps some kind of incentive program based on mitigation fees would encourage operators to use cleaner trucks in the area.

SESSION 9: FORGING INTER-AGENCY STRATEGIES FOR ADDRESSING INTER-REGIONAL TRAVEL AND DEVELOPMENT

Elizabeth Deakin (Moderator), Director, University of California Transportation Center and Associate Professor of City & Regional Planning, UC Berkeley

Barbara Goodwin, Executive Director, Fresno Council of Governments

Jose Medina, Director, California Department of Transportation

Honorable Bev Perry, Mayor Pro Tem, City of Brea and Regional Council Member, Southern California Association of Governments

Fredrick C. Skaer, Director, Office of NEPA Facilitation, Office of Environment and Planning, Federal Highway Administration

Moderator Elizabeth Deakin introduced the session. As inter-regional travel and trade expands, pressure has increased for inter-regional transportation providers to be accountable for the impacts of their services. In California, new options are being proposed and investigated, such as high-speed rail, new truck logistics, and highway systems. The way governments and companies think about transportation projects is changing, Deakin suggested, requiring new strategies:

- Involvement of different, formerly underrepresented groups,
- Quick incorporation of new technologies into the transportation network,
- Recognition of the importance of intermodalism, and
- Integration of environmental concerns into the system instead of simply relying on after-the-fact mitigation.

The question remains, according to Professor Deakin, can our current institutions deal with these challenges? Are current transportation planning processes structured to deal with these new issues, or must these institutions and processes be restructured?

Fredrick C. Skaer underlined the importance of and difficulty in overcoming the planning challenges described by Professor Deakin. Skaer described the logjam of today's current transportation planning process, focusing on the environmental clearance process for transportation projects. The environmental clearance process, as it exists today, is incredibly complicated. From beginning to end, this process can take eight years. Congress has directed that environmental clearance for transportation projects be streamlined. However, citing David Luberoff's talk the previous night, Skaer emphasized that no one step in the process can be ignored. To proceed with a project, every last approval must be received.

Underlying the seeming maze of approvals is a fairly logical planning process: Determine needs, figure out the concept of scope of the project, find a location, design the project, build it, and open the facility. However, at each point in this process, NEPA decisions and other environmental approvals can "tie you in knots," Skaer said. On the federal level alone, the transportation projects can be encumbered by actions such as NEPA decisions, federal permits, federal land transfers, and funding authorizations.

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Skaer posed the question, how do you organize all of these actions so they're not a bunch of unrelated decision points? In terms of federal actions, Skaer recommends using the NEPA environmental clearance process as the organizing principle for lining up all of the other federal players. Nevertheless, even if federal processes are streamlined, state, local, and private actions must also be coordinated. Furthermore, the clearance process should be streamlined, but not by shortcutting the environmental and local communities. Good models of collaborative approaches will be necessary if these challenges are to be surmounted.

Barbara Goodwin, Executive Director of the Fresno Council of Governments, spoke next, describing examples of successful collaborative institutions and transportation planning processes in the Fresno area. Some institutional arrangements are actually working well. Specifically, Goodwin suggests that Councils of Governments (COGs), particularly those that are also the Metropolitan Planning Organizations (MPOs) for the transportation planning process, are well suited to dealing with some of the difficulties in interagency, inter-regional transportation planning. For example, because COGs are composed of cities, they also bring a land use perspective to the table. Furthermore, because COGs collaborate with air quality boards, they also incorporate an environmental perspective.

Councils of Government are not only regional. They also encompass the statewide, inter-regional level with bodies such as the California Transportation Commission. At this level, as well as at the regional level, COGs must work with Caltrans to develop their plans. Because funding so often comes from the federal and state governments, these groups must be incorporated into the transportation planning process. The major flaw in today's planning process may be that most agencies, unlike COGs, that are involved in the planning process are "single purpose" agencies, charged with only one task, such as transportation or air quality. If large scale issues are to be better understood, the single purpose focus of most agencies will need to be modified.

Goodwin cited the Yosemite Area Regional Transportation Study as an example of how successful collaborative transportation planning can be on an inter-regional level. The Yosemite study sought to find methods to accommodate ever increasing traffic into the national park without damaging the pristine environment. Five counties and the National Park System worked together to solve the problem. Furthermore, Caltrans, the Sierra Club, community groups, and local Chambers of Commerce were included in this process. The results of the study are positive. A bus transit system into Yosemite will be instituted, and vacationers will be provided with a financial incentive, in the form of lower park use fees, to use the system. Because they were all included in the process, the Park System, the counties, and Caltrans are all willing to provide funding to implement the plan.

On a broader inter-regional level, Goodwin described the new challenges developing in California. The population of the Central Valley will double in the next twenty to twenty-five years. Currently, the Central Valley views itself as its own region. However, the San Francisco and Los Angeles regions are beginning to creep into the Central Valley. New institutional relationships across extremely wide distances will need to be formed if the growth issues facing the Central Valley are to be adequately addressed. One solution may be to institute federal and state incentives to encourage cooperation among local governments. For example, because local officials are concerned with bottom line fiscal

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priorities, land fiscalization may act as a strong incentive for regional and inter-regional cooperation.

The Honorable Bev Perry, Mayor Pro Tem of the City of Brea and Regional Council Member of the Southern California Association of Governments (SCAG), provided a rather unique example of regional collaboration in transportation. The “Four Corners” area of Southern California is the area where Los Angeles, Orange, Riverside, and San Bernardino Counties meet. Brea, a city in Orange County, lies within the region. Although there is a great deal of open space in the Four Corners area, significant commuter traffic passes through the area, moving between bedroom communities in the east and jobs in Orange County. Because of hilly topography, this traffic passes through only a few, highly congested corridors. Furthermore, urban growth in this relatively undeveloped area is likely to continue. Because the area lies in four separate counties, the area tends to be overlooked by county authorities. Cities in the area were “sniping” at each other, blaming each other and expecting outside solutions for their traffic problems.

The solution to the Four Corners’ impasse was a collaborative planning process. SCAG contributed the money for the process, and the Orange County Transportation Authority (OCTA) was named project manager because of its sophisticated transportation modeling capabilities. However, federal authorities, Caltrans, other state agencies, local cities, county Councils of Governments, landowners, and community groups such as businesses, residents, and environmental groups were all brought to the table. According to Perry, the ground rules of the collaboration specified that nobody could unilaterally rule out another stakeholder’s suggestion. Options were winnowed first on technical grounds, then on the basis of public comments. Based on this process, a set of recommendations for the Four Corners area has been developed.

Perry listed several key issues that had to be addressed to make the planning process viable. First, money had to be recognized as a decision-making factor. Viable plans must be fiscally constrained. Second, the solution to transportation problems is not always to “build your way out of the problem.” Latent demand will always fill up new facilities. Furthermore, if a new facility does meet air quality or community approval, it should not be built. For the Four Corners region, the collaboratively agreed upon solution is to expand and improve the transportation facilities that already exist. Transit is a major component of the plan. Eventually, the Four Corners area, and all of Southern California, will need to tackle the jobs / housing imbalance in the region. Although no one group was 100% happy with the collaborative planning process, no group walked away from the process.

Jose Medina, Director of the California Department of Transportation (Caltrans), finished the session by describing some of the collaborative efforts that Caltrans is beginning to make. Senate Bill 45, recently passed in California, requires Caltrans to forge “new relationships” to deal with inter-regional travel. Medina described some of the efforts he has been making to open up Caltrans to outside stakeholders. Some of the efforts have been to reach out to local governments and communities, by holding town meetings across California. Caltrans has also been trying to open communication between the different offices which comprise the Department. For example, Caltrans offices focusing on different transportation modes have met at retreats. Caltrans has also invited representatives from

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outside groups to contribute at these retreats. Medina also described efforts by Caltrans to establish relationships with other state agencies, such as Environmental Protection, Agriculture, Trade and Commerce.

DISCUSSION

Moderator Betty Deakin opened the discussion by describing the new planning landscape that emerged in the session presentations. The speakers' experiences all bear witness to a new style of planning—one distinguished by the participation of increasing numbers of agencies and stakeholders, by a necessary willingness to work together, and by a readiness to stub toes and learn from errors in the planning process. Speakers contributed further reflections on the challenges and opportunities presented by the new planning landscape.

Fred Skaer emphasized trust and open communication among parties as the foundation of complex planning processes today. He noted that in his experience the projects where trust had been violated or communications failed were the most problematic and messy.

Barbara Goodwin underscored the importance of trust in reference to regional governance efforts. In recent years, the Fresno Councils of Governments has seen its esteem increase significantly among the 560,000 people in the Fresno area. Goodwin explained that it is extremely important for the agency to keep its credibility high and to continue earning local respect. A highly regarded COG is better positioned to overcome local resistance to regional approaches to land use planning, Goodwin reasoned. One participant argued that for localities, losing control over land use was a significant fear, as regional processes often seem obscure. Bev Perry responded that 'losing control' was the wrong way to view the regional planning process; regional planning can be empowering for localities, she suggested, because regional governance bodies are composed of local elected officials. The process involves localities working together; local leaders set priorities and make decisions as a group, which is far preferable to having things legislated from above by a higher authority.

A brief discussion initiated by Dean Taylor redirected attention to transportation planning for mega-projects in California. Taylor asked Jose Medina to comment on what is being done at the state level within Caltrans to assess the need for large scale transportation projects or expansions, such as ports, railroad, highways, and airports. Medina responded that under the Davis Administration, Caltrans would be looking into precisely these issues, and that the agency hoped to keep these discussions open to other participants. Final comments by two participants remarked on the shortcomings of the typical course of federal involvement in large scale transportation projects. Alan Hendrix of Caltrans bemoaned that federal agencies were involved only at the project approval phase, where they often act as spoilers. It would be more productive, he suggested, if federal agencies got involved earlier in project planning, so they could help to shape projects rather than have to reject them downstream. Fred Skaer explained that Congress has not chosen to force federal agencies into the planning process, but that a model of voluntary participation by federal agencies could offer one solution. By being involved from the start of a project's development, federal agencies can better inform stakeholders what consequences the

proposal might have rather than simply being a "downstream spoiler," which, Skaer agreed, was tremendously problematic.

Conclusion

Collectively, symposium panelists revealed two seemingly self-contradictory tendencies within inter-regional travel and transportation: While trade and travel become ever more global, the leadership and policies guiding the development of inter-regional transportation are increasingly local. Inter-regional and international trade and travel have grown tremendously in the past two decades, and many panelists expected these trends to continue. Simultaneously, cities and neighborhoods have maintained and increased their control of transportation planning. To a large degree, the unprecedented power that local communities have to impede or modify a major transportation investment is due to environmental legislation – as much a factor in California as anywhere in the nation. Panelists also pointed out that localities influence transportation investments through their traditional control of land uses.

The negative impacts of inter-regional travel (emissions, noise, congestion, capital and operating costs) are generally localized, but benefits (economic growth, lower prices) are often broadly dispersed. Therefore, large transportation investments can rarely be made in the United States without becoming embroiled in some kind of controversy over equity, whether environmental, fiscal or political. The federal government does have some responsibility for managing the balance between global growth and local justice, but many of its efforts, such as smart growth policy, air quality regulation, and “do no harm” mitigation of mega-projects are either not fully implemented or essentially unsustainable. Furthermore, deregulation of industries such as trucking, rail, and airlines has also reduced federal control.

The most successful examples of transportation improvements described by participants often involved coalition building at the local level. Transportation agencies cannot plan for new investments by themselves. They must include local government, businesses, and community groups at the outset if the process is not to be stonewalled later on. The process of reaching agreement on transportation investments today is inherently political and somewhat chaotic. However, the result may be a transportation network that can both accommodate huge volumes of trade and travel without degrading the localities that harbor it.

APPENDIX A:

SYMPOSIUM PROGRAM

INTER-REGIONAL TRAVEL AND LOCAL DEVELOPMENT: THE TRANSPORTATION/LAND USE/AIR QUALITY CONNECTION
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<i>October 24-26, 1999</i>

UCLA Conference Center at Lake Arrowhead 850 Willow Creek Road Lake Arrowhead, California

SUNDAY AFTERNOON, OCTOBER 24

1:30 pm **Balancing Inter-Regional Travel with Local Impacts: A Symposium Overview**

Brian Taylor, Associate Director, Institute of Transportation Studies and Assistant Professor of Urban Planning, UCLA School of Public Policy & Social Research

2:00 pm **The Context: Emerging Patterns and Trends in Inter-Regional Travel and Trade – Implications for Metropolitan Areas**

This session examines the current patterns and projected future trends in inter-regional travel. Two presentations examine inter-regional passenger travel and goods movement, with a focus on California's role as a nexus of travel on both the Pacific Rim and in the Western U.S. Presentations and subsequent discussion begin to explore the implications of projected changes in inter-regional travel on metropolitan growth patterns and, more specifically, the implications for inter-regional transportation facilities, such as highways, airports, seaports, and rail lines.

Moderator: Brian Taylor

- **Trends in International and Regional Passenger Travel**

Alan Pisarski, Consultant, Falls Church, VA

- **Trends in Inter-Regional Goods Movement**

Paul O. Roberts, Former Vice President, Science Applications International Corporation, Falls Church, VA

Dialogue Among All Participants

3:30 pm Break

3:45 pm **Change and Growth in the Airline Industry: Implications for Airport Planning and Land Use Conflict**

Metropolitan airports are often unpopular with their residential neighbors. Wherever they are located, airports significantly affect the surrounding physical and social environments, adjacent development, and regional development patterns. Proposals to increase capacity at existing airports, to build new airports, or to convert dormant military airports are inevitably at the center of heated local land use conflicts. This session explores the rapidly evolving airline industry and the implications of this evolution for airports. Local and regional planning efforts to mitigate airport expansions and resolve local land use conflicts over new or expanded airport capacity will be discussed.

Moderator: Brian Taylor

▪ **Changing Airlines, Changing Airports**

Mark Hansen, Associate Professor of Civil and Environmental Engineering, UC Berkeley

▪ **The Challenges of Airport Development in Southern California**

Steven Erie, Associate Professor of Political Science, UC San Diego

▪ **Mitigating Land Use Conflicts Around Airports**

David Lewis, President, HLB Decision Economics Inc., Ottawa, Canada

▪ **Comment: Developing Cleaner Airports**

Steven Howards, Executive Director, Clean Airport Partnership, Lakewood, CO

Dialogue Among All Participants

5:15 pm Reception

6:00 pm Dinner

SUNDAY EVENING, OCTOBER 24

7:30 pm **High-Speed Rail: Plans, Prospects, and Implications for Metropolitan Development**

Over several decades, high-speed passenger rail service has gradually developed in Europe and Asia, along major conurbations of urban development. In the U.S., plans for inter-regional high-speed rail are on the table in several regions around the country, including California. This session provides an overview of current high-speed plans with a focus on their potential for shaping and directing new growth in

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California and elsewhere. The presentations will focus on identifying the situations where high-speed rail is most effective, and on the effect of these systems on local and regional land use, and vice versa.

Moderator: Martin Wachs, Director, Institute for Transportation Studies; and Professor of City & Regional Planning and Civil & Environmental Engineering, UC Berkeley

- **Evaluating the Feasibility of High-Speed Rail in the U.S.**

Ronald Mauri, Chief, Center for Transportation Information, John A. Volpe National Transportation Systems Center, U.S. Department of Transportation

- **Current Plans for High-Speed Rail in California**

Dan Leavitt, Deputy Director, California High-Speed Railway Authority

- **Comment: The Feasibility of High-Speed Rail in California**

Norm King, Executive Director, San Bernardino Associated Governments

Dialogue Among All Participants

9:00 pm Informal Reception and Continued Dialogue

MONDAY MORNING, OCTOBER 25

7:30 am Breakfast

8:45 am **High-Speed Rail and/or Increased Air Travel: Complementary or Competitive?**

While there is little disagreement that ongoing growth, development, and trade will significantly increase inter-regional travel in the coming years, significant disagreement arises over the best way to accommodate increased passenger travel demand. Some experts argue that increased airport capacity is the most cost-effective approach while others contend that high-speed rail offers long-term land use and environmental benefits over the expansion of airports and air travel. This session analyzes the respective roles of these two modes of passenger travel.

Moderator: Martin Wachs

Sir Peter Hall, Professor of Planning, University of London

Adib Kanafani, Professor and Chair, Department of Civil and Environmental Engineering, UC Berkeley

Dialogue Among All Participants

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10:15 am Break

10:30 am **Highways and Metropolitan Development: Past Experience and Future Prospects**

The Interstate Highway System is the largest public works project in world history, and the California highway system, taken as a whole, is the largest public works project ever built by a single organization. The influence of these highway investments on goods movement between cities, automobile use within cities, and suburban development around cities can hardly be overstated. While freeway systems are largely complete, they continue to exert enormous influence over travel and development. Currently expansions and extensions of existing highways are planned in most metropolitan areas. Presenters in this session explore the role of highways in inter-regional travel and local development and commenters debate the merits of new highway developments on the suburban fringe of metropolitan areas.

Moderator: Donald Shoup, Professor of Urban Planning, UCLA School of Public Policy & Social Research

- **Overview: Interstate Freeways and Local Travel**

Brian Taylor

- **Within Regions: The Influence of Highways on Patterns of Development**

John S. Adams, Professor of Geography, and Public Affairs & Planning, University of Minnesota

- **Comments: The Future of Freeways Within and Between Metropolitan Areas**

Judith Corbett, Executive Director, Local Government Commission

Randall Crane, Associate Professor of Urban Planning, UCLA

Dialogue Among All Participants

12:00 noon Lunch

MONDAY AFTERNOON, OCTOBER 25

1:30 pm **The Restructuring of Maritime Trade: Mega-Ships, Mega-Ports, Mega-Impacts**

The maritime industry is in the midst of significant change. Ships have significantly increased in size, and larger ships are calling on fewer ports. As a result, maritime trade is concentrating at fewer, larger ports. These larger ports, in turn, place major impacts on local and regional landside transportation infrastructure, especially

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highways carrying trucks and railroads carrying train traffic. This session examines (1) ongoing changes in shipping and its implication for ports and port development, (2) how large ports propose to significantly increase landside trucking and rail capacity, and (3) how these proposed increases in capacity affect adjacent communities and concentrate environmental impacts.

Moderator: Randall Crane

- **Changes and Trends in Maritime Trade and Ports**

John Vickerman, Principal and Executive Vice President, TranSystems Corporation, Reston, VA

- **Landside Issues in U.S. Port Planning**

Lillian Borrone, Director, Port Commerce Department, The Port Authority of New York & New Jersey

- **Long Beach/Los Angeles: Ports: Development and Transportation Issues in the Inland Empire**

John Husing, Principal, Economics & Politics, Inc., Highland, CA

- **Comment: Mega-Ships, Mega-Ports, Mega-Impacts**

John Boesel, Executive Vice President, CALSTART

Dialogue Among All Participants

3:00 pm Free Time

5:15 pm Reception

6:00 pm Dinner

MONDAY EVENING, OCTOBER 25

7:30 pm **The Politics: Lessons from the Successes and Failures of Major Inter-Regional Transportation Projects**

Inter-regional “mega“ transportation projects are among the most visible, expensive, and contentious of all public investments. New freeways or airports can generate substantial public benefit, but inevitably generate significant social, economic, and environmental costs requiring substantial mitigation. This session explores the recent history of several major projects, such as the Central Artery in Boston, the new Denver International Airport, and the Century Freeway in Los Angeles, to draw lessons on the political opportunities and constraints to major project development.

Moderator: LeRoy Graymer, Founding Director, UCLA Extension Public Policy Program

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David Luberoff, Associate Director, Taubman Center for State and Local Government, Kennedy School of Government, Harvard University

Dialogue Among All Participants

9:00 pm Informal Reception and Continued Dialogue

TUESDAY MORNING, OCTOBER 26

7:30 am Breakfast

8:45 am **The Environment: Challenges to Air Quality Planning and Mitigation In and Around Inter-Regional Transport Facilities**

Airports, seaports, rail yards, and inter-regional highways pose special challenges to air quality planners. The rapid growth and concentration of activity at such facilities can create emissions hot spots and contribute significantly to regional air pollution. Airports generate emissions from planes, ground support vehicles, and substantial landside vehicular travel. Seaports and railyards concentrate diesel emissions from a variety of modes -- trucks, locomotives, and in ports, vessels calling from many nations. Highways concentrate mobile source emissions under frequently congested conditions. This session addresses the significant progress made in recent years and the challenges ahead for air quality planning and mitigation in the logistically complex, modally diverse, and institutionally varied settings that inter-regional facilities occupy.

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

Panel:

Tim Carmichael, Executive Director, Coalition for Clean Air

Jack Driscoll, Former Executive Director, Los Angeles World Airports

Jim McGrath, Environmental Planning Manager, Port of Oakland

Lynn Terry, Deputy Executive Officer, California Air Resources Board

Dialogue Among All Participants

10:15 am Break

10:30 am **Forging Inter-Agency Strategies for Addressing Inter-Regional Travel and Development**

Dramatic growth in the volume and velocity of inter-regional travel and trade poses daunting challenges for local, regional, state, and federal leaders. To what modes should public investments in inter-regional travel be targeted? How will these

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investments affect the patterns of growth in established California cities and in rapidly growing places like the San Joaquin Valley, the Central Coast, and western Riverside and San Bernardino Counties? What is the appropriate federal role in planning and funding intermodal facilities of national significance? What new inducements does TEA-21 offer for interjurisdictional planning? How does devolution under SB-45 affect Caltrans' role in planning for and managing statewide travel? How can local governments, which operate many key inter-regional transportation facilities, make land use decisions function most effectively with regional, state, and federal authorities in planning for these growing demands? How do we address air quality attainment issues in a context that connects effectively with transportation and land use decisions? These and related issues are tackled in this closing, moderated roundtable discussion among policy leaders and planners.

Overview and Moderator: Elizabeth Deakin, Director, University of California Transportation Center and Associate Professor of City & Regional Planning, UC Berkeley

Policy Panel:

Barbara Goodwin, Executive Director, Fresno Council of Governments

José Medina, Director, California Department of Transportation

Honorable Bev Perry, Mayor Pro Tem, City of Brea and Regional Council Member, Southern California Association of Governments

Fredrick C. Skaer, Director, Office of NEPA Facilitation, Office of Environment & Planning, Federal Highway Administration

12:00 noon Concluding Lunch
Steering Committee Meeting

APPENDIX B:

SPEAKER BIOGRAPHIES

John S. Adams is Professor of Geography, Planning & Public Affairs, and Chair of the Department of Geography, University of Minnesota. His publications focus on the American city, regional economic development, intra-urban migration, housing markets, urban transportation and urban development in the US and states of the former USSR. Courses and seminars address methods for analyzing population and housing, land use and transportation, and the metropolitan economy; the Twin Cities of Minneapolis – St. Paul; and Russia Environs. He currently works with the Center for Transportation Studies at Minnesota, receiving continuing support from the Minnesota Department of Transportation for research on land use and transportation issues in Minnesota's major urban areas.

John Boesel is the Executive Vice President of CALSTART. He began his professional career in the California Legislature as a legislative aide to then Assemblyman Sam Farr (now Congressman Sam Farr). John worked as a commercial banker in Wells Fargo's Corporate Headquarters offices in San Francisco. John has worked at CALSTART since 1993, helping to launch over \$120 million in clean transportation programs.

Lillian C. Borrone is the Director of the Port Commerce Department of the Port Authority of New York and New Jersey. She oversees the management of the major marine terminal facilities within the Port of New York and New Jersey and is also responsible for the port authority's waterfront development projects. In addition, Lillian oversees work to strengthen the role of the New York-New Jersey region as a center for international trade and business. Key programs and projects under Lillian's direction include new capital development and construction at the marine terminal facilities, implementation of key policies in such diverse areas as dredged material disposal within the port, new business development and long range strategic planning. She is also responsible for the management and financial performance of agency assets. Lillian is a Board Member of the International Association of Ports and Harbors, the North Atlantic Ports Association, the Regional Business Partnership in Newark, New Jersey, and immediate past chairman of the American Association of Port Authorities.

Tim Carmichael is Executive Director of the Coalition for Clean Air. He serves as the coalition's principal spokesperson and manages day-to-day operations. Prior to becoming Executive Director, Tim was the Policy Director, representing the Coalition at conferences, symposiums and in negotiations with the South Coast Air Quality Management District, the California Air Resources Board, and the U.S. Environmental Protection Agency. Tim has worked for the Coalition since November 1995. From 1992-1995, he worked for an environmental consulting firm, educating the public on a variety of environmental issues including recycling, water pollution, advanced transportation systems and air pollution reduction strategies. From 1989 - 1992, Tim worked in the aerospace industry.

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Judith A. Corbett is the founder and for the past 20 years has served as Executive Director of the Local Government Commission, a nonprofit membership organization made up of almost 1,000 mayors, city councilmembers, county supervisors and local government staff from throughout California and the Western States. The Commission is committed to developing local government solutions to environmental, social and economic problems. With Michael Corbett, Judith planned and developed the 70 acre, Village Homes mixed-use neighborhood in Davis, California. This highly successful development has received international attention, has been the topic of numerous documentaries, and has been the site of official visits by many dignitaries including French President Francois Mitterand and First Lady Rosaline Carter. Judith served for eight years as a part-time consultant to the California State Assembly. She has lectured at universities, conferences and workshops throughout the United States, Canada, Europe and Mexico. She also has served as a Boardmember of the Congress for the New Urbanism since 1995. In 1999, she was named a "Hero of the Planet" by *Time* magazine.

Randall Crane (Moderator) is an Associate Professor at the UCLA School of Public Policy and Social Research specializing in transportation, environmental policy, and urban development. He studies urban development problems - including housing, public finance, the provision of urban services in less developed countries, and costs and benefits of government activity, and aspects of environmental policy that include amenity valuation and water policy. Randy's current projects focus on the impacts of suburban sprawl on travel behavior, and vice-versa. His book with Marlon Boarnet, *Travel by Design: The Influence of Urban Form on Travel*, is forthcoming from Oxford University Press.

Elizabeth Deakin (Moderator) is Director of the University of California Transportation Research Center and a member of the City and Regional Planning Faculty at UC Berkeley. Her research focuses on land use and transportation issues.

Jack J. Driscoll recently formed a consulting business, *The Driscoll Company*, specializing in local government, transportation and aviation related issues. He previously served as the Executive Director of Los Angeles World Airports (LAWA) for over 6½ years, responsible for a regional system of four airports in Southern California: Los Angeles International (LAX), Ontario International Airport, Palmdale Regional Airport, and Van Nuys Airport. Under his leadership were all capital development projects, including what is considered one of the region's most important transportation infrastructure planning and development projects, the LAX Master Plan. Additionally, he initiated the successful \$270 million 2-terminal project at Ontario Airport that was completed in 1998. During his tenure, LAWA grew to be the third busiest passenger airport (61.2 MAP) and second busiest (2 million tons) air cargo airport in the world. LAWA has received numerous awards in recognition of its environmental efforts and innovations including recognition from the South Coast Air Quality Management District for electric vehicle charging stations at LAX, and the development of a major food-waste recycling program.

Steven P. Erie is an Associate Professor of Political Science at the University of California, San Diego, and a Senior Fellow at the Southern California Studies Center, University of Southern California. An authority on Southern California's trade infrastructure, Steven

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recently has published: (a) *International Trade and Job Creation in Southern California: Facilitating Los Angeles/Long Beach Port, Rail, and Airport Development* (1996); (b) *Facing the Challenges of Expanding Southern California's Global Gateways* (with Edward Rodriguez, 1998); (c) *A New Orange County Airport at El Toro: An Economic Benefits Study* (with John Kasarda and Andrew McKenzie, 1998); (d) *Toward a Trade Infrastructure Strategy for the San Diego/Tijuana Region* (1999); and (e) *Planning Airport Expansion: A Survey of Best Practices at Nine Leading International Airports* (with Harold Brackman and Gregory Freeman, 1999). Steven is a member of the Governor's Commission on Building for the 21st Century, the Pacific Council on International Policy, and San Diego Dialogue.

Joanne Freilich (*Symposium Co-Coordinator*) is Program Director of the Public Policy Program at UCLA Extension where she develops and implements conferences, seminars, and courses for policy leaders and professionals in areas including: urban policy planning, land use, governance, transportation, economic development, environmental quality, mediation, public infrastructure finance, and international public policy. She has been with the UCLA Extension Public Policy Program for 10 years. She previously served as a principal planner with the Southern California Association of Governments from 1973 through 1989 where she specialized in air and water quality, transportation, and land use planning.

Barbara Goodwin became the Executive Director for the Fresno COG in June of 1994. She has a 27-year history with Fresno's Council of Governments and extensive experience with the responsibilities and functions of a Metropolitan Planning Organization and Regional Transportation Planning Agency. Goodwin is the immediate past-chair of the COG Directors Association of California. She also served as the 1994-95 Chairman for California's Regional Transportation Planning Agencies representing the group before the California Transportation Commission. She is currently Vice-Chair of the San Joaquin Valley COG Directors Association, and serves as lead for the eight agencies in the area of air quality issues. Goodwin has served on numerous statewide committees over the years, and is often asked by state agencies to represent the Valley on transportation issues.

LeRoy Graymer (*Symposium Co-Coordinator*) is Founding Director of the Public Policy Program at UCLA Extension, which he established in 1979. The program addresses public policy issues of state, national and international importance through numerous conferences, seminars, workshops, and facilitation activities. Graymer was formerly Associate Dean of the Graduate School of Public Policy at the University of California, Berkeley, and Vice President and Professor of Political Science at California State University, Dominguez Hills. Recent work includes a special research project for the Hewlett Foundation on California governance reform options.

Sir Peter Hall is Professor of Planning at the Bartlett School of Architecture and Planning, University College London. From 1991-94 he was Special Adviser on Strategic Planning to the Secretary of State for the Environment, with special reference to issues of London and South East regional planning including the East Thames Corridor and the Channel Tunnel Rail Link. He is a member of the Deputy Prime Minister's Urban Task Force, established in May 1998. He has taught at the London School of Economics; at the University of Reading (1968-88), where he was Dean of the Faculty of Urban and Regional Studies; and at the University of

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California at Berkeley (1980-92), where he is Professor Emeritus of City and Regional Planning. He is author or editor of nearly thirty books on urban and regional planning and related topics. He has received the Founder's Medal of the Royal Geographical Society for distinction in research, and is an honorary member of the Royal Town Planning Institute. He is a Fellow of the British Academy. He is currently Chairman of the Town and Country Planning Association.

Mark Hansen is an Associate Professor of Transportation Engineering at the University of California, Berkeley and Assistant Director the National Center of Excellence in Aviation Operations Research--NEXTOR. He teaches courses in transportation planning, transportation economics, air transport, and transportation data analysis. His research interests include the measurement and valuation of aviation infrastructure performance, airline adaptation to capacity constraints, airline network traffic flow modeling, aviation security, and valuation of intercity travel time. He leads NEXTOR's program in Fundamental Research in Air Traffic Management as well as its West Coast Airport Partners program, and recently participated in a Congressionally-mandated study on the feasibility of Positive Passenger Bag Match as an domestic airline security measure. Hansen also does work in urban transportation, focusing on econometric modeling of the relationships between road supply, land development, and vehicle traffic.

Steven Howards is Executive Director of the Clean Airport Partnership, a national non-profit organization based in Colorado that focuses on environmental issues associated with airport operations. His work includes advocating policy and practices that expand the use of alternative fuel vehicles, funding for transit, and rewards for efficient vehicle and aircraft operations. Prior to founding CAP, Howards was President of Environmental Strategies, serving as a consultant to federal agencies, state governments, and the private sector on air quality, energy efficiency, and alternative fuel issues. Before heading ES, he was Executive Director of the Denver Metro Air Pollution Control Agency, where he focused upon issues of air quality, transportation, and sprawl. Prior to Denver, Howards lived in Washington, D.C. for eight years, covering similar issues as a senior lobbyist for the National Wildlife Federation.

Dr. John Husing is a leading authority on the Inland Empire's city and county economies, a topic he first began studying in 1964 with his doctoral thesis at Claremont Graduate School. For most of the past 33 years Dr. Husing has worked variously as the President of the Inland Empire Economic Partnership, editor and writer of the Inland Empire Quarterly Economic Report, a college professor and a political campaign consultant. Today, he is a principal with Economics & Politics, Inc., a firm whose clientele includes over 20 Southern California cities and counties, and major firms like GTE, Roadway Express and the California Speedway. His commentary on the Inland Empire has appeared in *the Wall Street Journal*, *New York Times*, *Los Angeles Times*, and local newspapers. He is a monthly front page columnist for *The Business Press*.

Adib Kanafani is Professor of Civil Engineering in the Dept. of Civil and Environmental Engineering at the University of California, Berkeley. Since joining the UC Berkeley faculty, he has taught and conducted research on transportation systems, transportation

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engineering, airport planning and design, and air transportation economics. He has served on a number of national and international advisory panels to government and industry. He is currently Chairman of the Department of Civil and Environmental Engineering at Berkeley, and Co-Director of the National Center of Excellence in Aviation Operations Research. He has recently completed a research study comparing the social costs of high-speed rail, air, and highway transportation in the context of the California Corridor. He has also conducted extensive studies of the economics of air transportation networks. Professor Kanafani has authored over 170 publications on transportation, including a book on Transportation Demand Analysis, and one on National Transportation Planning.

Norm King serves as Executive Director of San Bernardino Associated Governments (SANBAG)/San Bernardino County Transportation Commission and the three additional SANBAG related authorities. He was a City Manager for 20 years serving the Cities of Claremont, Palm Springs and Moreno Valley, and served on the staff of the U.S. Conference of Mayors and the National League of Cities in Washington, D.C. King has been the President of the International City/County Management Association (ICMA) and the City Manager's Department of the League of California Cities. He is presently moderator of the California Self-Help Counties Coalition and is a Fellow of the National Academy of Public Administration. He teaches part-time at Claremont McKenna College. Mr. King's articles on the management and economics of local government have appeared in several professional journals and books. He is considered a leading proponent of "demand management" and "market-based" public policies.

Daniel Leavitt is Deputy Director for the California High-speed Rail Authority (CHSRA), managing several consultant contracts and directing Southern California operations. In 1995, he was appointed by Governor Wilson as the Executive Director of the newly created California Intercity High-speed Rail Commission - the predecessor organization to the CHSRA. He directly provided the oversight for the Commission's technical studies to investigate the feasibility of high-speed rail. He represented the Commission and led all public outreach efforts. The Commission's unanimously approved Final Report was submitted to the Governor and Legislature, and led to the passage of Senate Bill 1420 creating the new CHSRA to implement the findings of the Commission. Dan moved on to serve as Interim Executive Director of the Authority when it was first created in January 1997 until August 1998. He previously served as Deputy Project Manager at Parsons Brinckerhoff for the *High-speed Rail Corridor Evaluation and Environmental Constraints Analysis* and the *Los Angeles-Bakersfield High-speed Rail Preliminary Engineering and Feasibility Study*.

David Lewis is President and CEO of HLB Decision Economics Inc. of Washington DC, Sacramento, and Ottawa. Dr. Lewis is an economist specializing in the assessment of investment and risk, and the brokerage of multi-stakeholder consensus for governments, corporations and public-private partnerships in transportation, information technology and telecommunications. He was formerly Principal at the Congressional Budget Office and Chief Economist of the Office of the Auditor General of Canada. His new book, *Policy and Planning as Public Choice: Mass Transit in the United States*, was published by Ashgate in September, 1999.

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David Luberoff is Associate Director of the A. Alfred Taubman Center for State and Local Government at Harvard University's Kennedy School of Government and is a visiting lecturer at Harvard University's Graduate School of Design. He is also a columnist on infrastructure issues for *Governing* magazine. His research and writing focus on the political economy of infrastructure and land use policies and he is the author of several articles, case studies, and reports on infrastructure finance, decision-making on major public projects, and land-use planning. Before joining the Taubman Center, David worked as an editor for the Boston Redevelopment Authority and as editor-in-chief of *The Tab*, greater Boston's largest group of weekly newspapers.

Ronald Mauri is Chief of the Center for Transportation Information at the U.S. Department of Transportation's John A. Volpe National Transportation System Center (Volpe Center) in Cambridge, MA. Mr. Mauri has been studying transportation economics at the Volpe Center for over 25 years, and taught Economics at the University of Delaware for five years before that. He has published several journal articles on railroad economics and is the author of many government reports, principally in the areas of railroad economics and inter-city passenger transportation. He was a contributor and Principal Study Advisor for the Federal Railroad Administration's 1997 Report to Congress on High-Speed Ground Transportation for America, a comprehensive exploration of the commercial feasibility of inter-city passenger services in the U.S.

Jim McGrath has been environmental manager at the Port of Oakland since 1990. Before that, he spent 14 years at the California Coastal Commission and 6 years with the US Environmental Protection Agency. The Environmental Planning Department at the Port of Oakland is responsible for environmental analysis and permitting for activities at the seaport and airport in Oakland. In the past nine years, the Port has successfully undertaken two harbor deepening projects, developed a new container terminal and expanded another, and is starting construction on two new large container terminals that raise important air quality issues.

José Medina is Director of the California Department of Transportation, which has a budget of more than \$6 billion, 18,000 employees, and oversees the state's 15,200 mile highway system. He has spent over thirty years working to build and improve the San Francisco communities by focusing on quality-of-life issues that affect quality of life. Three San Francisco mayors have sought his counsel on issues such as safe neighborhoods, employment opportunities, and urban planning. Mr. Medina is the founding member of La Raza Centro Legal, The Progressive Way, the Latino Contractor Association, La Raza Graphics Center, and the Coalition for Immigrant and Refugee Rights and Services. In this role, Mr. Medina founded Instituto Laboral de la Raza, a labor advocacy non-profit organization. He has been appointed twice to the Police Commission. Mr. Medina has been the recipient of several prestigious awards including the Robert F. Kennedy Fellowship, and the United Way of the Bay Area Leadership Award. He served as a board-member of the San Francisco County Transportation Authority and was a San Francisco County Supervisor, where he served on the Economic Development, Transportation & Technology, and Housing & Neighborhood Services Committees.

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Bev Perry is serving her second term on the Brea City Council after having been elected in November of 1992 and 1996. She was Mayor in 1995. Perry has just completed two terms as President of the Orange County Division of the League of California Cities. Her activities have included being a member of housing & economic development policy committees at the regional and state levels, as well as Chair of the National League of Cities' Community & Economic Development Policy Committee and a Board member for the Local Government Commission. Perry has delved into the arena of transportation and land use as a member of the Four Corners Transportation Policy Group, Vice Chair of the Orange County Council of Governments (OCCOG), Regional Councilmember at the Southern California Association of Governments (SCAG) and President of the California Association of Councils of Governments (CALCOG). She is an Associate with the firm of Greer/Dailey Public Affairs Consulting

Alan Pisarski has been involved in the national transportation policy scene, from positions in the Office of the Secretary, U.S. DOT, or in a consulting capacity, addressing travel behavior issues. He serves on a number of international bodies that guide tourism analysis and statistical systems in the world, including: Chair of the WTO Committee on Tourism Statistical Definitions, which has coordinated the restructuring of world tourism statistical standards; and serves as a member of the United Nations Group of Experts in International Classification Systems. In the U.S., he prepared the inter-city travel chapter for the Institute of Transportation Engineers Planning Manual; chaired the TRB Task Force on Scenic Byways which affected national legislation regarding travel and tourism; and serves as on-going advisor on the conduct of the American Travel Survey. Mr. Pisarski presently serves as Chair of the TRB Committee on National Transportation Statistics and the Committee on Transportation History. He delivered the Distinguished Lecture at TRB's annual meeting earlier this year.

Dr. Paul O. Roberts served on the faculties of the Harvard Business School, where he was Associate Professor of Industrial Logistics and Transportation Management, the Harvard Department of Economics, where he taught Transportation Economics and served as the Director of Research of a major research program, and the Massachusetts Institute of Technology where as a full professor he served as the first director of the MIT Center for Transportation Studies. Roberts has been in full-time management consulting since 1980, when he joined the Transportation Consulting Division of Booz, Allen and Hamilton in Bethesda, Maryland. From 1983 to 1995 Paul was President of Transmode Consultants, Inc. in Washington, DC., served as Vice President and Manager of the Transportation Consulting Division of Science Applications International Corporation. He has directed more than 100 major assignments in freight transportation and logistics, developing a variety of databases concerning freight transportation which have been applied in dozens of projects ranging from rail merger applications to the Surface Transportation Board to urban goods movement planning.

Donald Shoup (Moderator) is chair of the Department of Urban Planning and director of the Institute of Transportation Studies at UCLA, where he teaches courses on public finance, urban economics, and program evaluation. He received his bachelor's degree in

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electrical engineering and his Ph.D. in economics at Yale. His long-term research has focused on parking as a link between transportation and land use.

Frederick Skaer is the Director of the Federal Highway Administration's Office of National Environmental Policy Act Facilitation, which has responsibilities for establishing national environmental policy and for providing national level oversight to FHWA's most complex and controversial projects. Frederick has been with FHWA since 1974 during which time he has served in three field divisions and in headquarters in a variety of planning, environmental, and engineering positions.

Brian Taylor (Symposium Co-Coordinator) is Associate Director of the UCLA Institute of Transportation Studies and an Assistant Professor of Urban Planning in the School of Public Policy and Social Research. At UCLA he teaches courses in transportation policy and planning, and urban public policy. His current research is on the politics of transportation finance and planning, including the history of highway finance and the effect of public transit subsidy programs system performance and social equity. Taylor has also examined the relationships between transportation and urban form, including the effects of suburbanization on employment access and the evolving commuting patterns of women, minority, disabled, and low-income workers. Prior to coming to UCLA, he was an Assistant Professor in the Department of City and Regional Planning at the University of North Carolina at Chapel Hill and a transportation analyst for the San Francisco Bay Area Metropolitan Transportation Commission.

Lynn Terry is a Deputy Executive Officer of the California Air Resources Board. She oversees programs including the development of clean air plans for meeting state and federal air quality standards, and technical programs for quantifying air pollutant emissions, air quality modeling, data analysis, and emissions trading. Over the past 14 years, Ms. Terry has worked on a variety of programs at the Air Resources Board including air quality planning, air toxics regulation, risk assessment, and stationary source permitting.

John Vickerman is a Principal at TranSystems Corporation, a national planning and engineering firm. TranSystems has become an internationally recognized firm known for providing innovative solutions to the many operational, planning and design issues that currently confront the transportation industry. Vickerman specializes in the planning and design of port and intermodal facilities. Much of his work focuses on assisting ports and shipping companies to recognize and prepare for future technological change. He is the Chairman of PIANC Permanent Technical Committee II, Working Group 37, "Marine Container and Intermodal Rail Technologies and Practices." He has served on three major policy Committees of the Transportation Research Board of the National Research Council.

Martin Wachs (Moderator) is Director of the Institute of Transportation Studies at the University of California, Berkeley, where he also holds faculty appointments as Professor of City and Regional Planning and of Civil and Environmental Engineering. Until July, 1996, he was Professor of Urban Planning and Director of the Institute of Transportation Studies at UCLA, where he had been a member of the faculty since 1971, and where he served three terms as Head of the Urban Planning Program. Before joining UCLA he was an Assistant

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Professor at Northwestern University and the University of Illinois at Chicago. He has been a visiting professor at Oxford University, Rutgers University, The University of Iowa, and The Technion. In 1986 he received an award for being a “Distinguished Planning Educator” from the California Planning Foundation, and a Distinguished Teaching Award from the UCLA Alumni Association. Wachs is the author or editor of four books and has written over one hundred published articles on transportation planning and policy. He is Vice Chairman of the Executive Committee of the Transportation Research Board and recently completed a term as a member of the California Commission on Transportation Investment. He is also a member of the Advisory Committee on Research and Development for the California Department of Transportation.

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Southern California Association of Governments
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Southern California Gas Company
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