

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

**Transportation and the Economy**

**December 7-9, 1997  
UCLA Conference Center  
Lake Arrowhead, California**

***SUMMARY OF PROCEEDINGS***

***Summary Prepared by: D. Gregg Doyle, AICP, and Daniel Baldwin Hess  
UCLA School of Public Policy and Social Research***

***Edited by: Joanne Freilich, Assistant Director, UCLA Extension Public Policy  
Program***

UCLA Extension Public Policy Program  
10995 Le Conte Avenue #613, Los Angeles, CA 90024  
(310) 825-7885

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:**

- |               |   |
|---------------|---|
| 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, and Air Quality |

*Foreword*

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

This report is a summary of proceedings from a major symposium convened by the UCLA Extension Public Policy Program in December 1997 which examined relationships between Transportation and the Economy.

The symposium was the seventh 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.

This year's topic was a departure from previous symposia in that it introduced the economy as a "fourth prong" in the transportation, land use and air quality connection. In essence, the way our national, state, and local economies operate greatly affects transportation needs, air quality impacts, and land use patterns. To better understand these relationships was the goal of the 1997 symposium.

To ensure that the information and issues addressed in the program were keyed to the needs of policymakers and practitioners, the program was developed with representatives of the cosponsoring and cooperating organizations, which include governmental, business, environmental, and public interest groups.

It is the hope of the symposium organizers that this as well as other programs that have been held will contribute to ongoing policy dialogues, and also to increased knowledge about the most efficacious strategies for solving transportation and air quality problems while also recognizing the importance of the economy.

**LeRoy Graymer, Director**  
**Joanne Freilich, Assistant Director**  
**UCLA Extension Public Policy Program**

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

<b>I. OVERVIEW</b>	<b>1</b>
<b>II. SYMPOSIUM PROCEEDINGS</b>	<b>3</b>
Transporting The Economy: Connecting Ideas With Practice	3

<b>DAY ONE THEME</b> <b>Transportation Implications of Economic Growth and Restructuring</b>
---

The Restructuring of Economic Production: Implications for Transportation	4
Free Trade And The Future Of Local And Global Goods Movement	7

<b>DAY TWO THEME</b> <b>The Relationship Between Transportation Investment and Economic Benefit</b>
--

Evaluating Economic Benefits Of The Transportation System	10
Transportation Investments And Local Economic Development	12
Reconciling Growing Global Freight Movement And Air Quality Attainment	14
Roundtable: Effects Of New Economic Production And Distribution Technologies On Urban Form And Land Use	16

<b>DAY THREE THEME</b> <b>Linking Economic Consideration to Transportation Policy and Finance</b>
--

Linking Finance To The Economic Benefits Of Transportation Investments	18
Linkages To Federal Legislative And Regulatory Activity: ISTEA Reauthorization And New Air Quality Standards	20
<b>APPENDIX A: SYMPOSIUM PROGRAM</b>	<b>22</b>
<b>APPENDIX B: SPEAKER BIOGRAPHIES</b>	<b>31</b>
<b>APPENDIX C: PARTICIPANT ROSTER</b>	<b>39</b>
<b>APPENDIX D: SYMPOSIUM COSPONSORS</b>	<b>45</b>

## **I. OVERVIEW**

*Transportation and the Economy* was the topic of the 1997 UCLA Lake Arrowhead

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

Transportation/Land Use/Air Quality Connection symposium. Convened annually by the UCLA Public Policy Extension Program in collaboration with the UCLA School of Public Policy and Social Research, the invitational symposium was held at the UCLA Conference Center at Lake Arrowhead, California, on December 7-9, 1997. Over 100 policymakers, practitioners, and researchers from California and around the U.S. met to examine how transportation investments benefit the economy.

As with past Lake Arrowhead symposia, academic and research experts shared research results with public officials, business and environmental representatives, and other practitioners. The three day symposium provided a forum for in-depth discussion and exchange of information and viewpoints about transportation and the economy among all symposium participants, including assessment of political, social, and institutional issues. The presentations and discussions from the 1997 meeting are summarized here.

The core of the program focused on eight topics:

1. Transportation implications of economic growth and restructuring
2. Effects of new free trade agreements on international goods movement
3. Relationships between transportation investments and economic benefits
4. How transportation investments influence local economic development
5. Reconciling attainment of air quality standards with major growth in the movement of freight by truck, rail, air, and ship
6. How economic growth and restructuring are affecting development patterns
7. Who pays for, and who benefits from transportation investments
8. ISTEA reauthorization and new federal air quality standards as they relate to the economy and transportation

Over the course of the symposium several conclusions emerged. First, was that investments to improve the efficiency and effectiveness of the transportation system *must* first satisfy political concerns with the equitable distribution of public resources between areas. In other words, while economists may believe that transportation projects should be evaluated primarily on whether they improve economic productivity, elected officials are concerned much more with fairly allocating projects and funding among jurisdictions. Most agreed that this conflict between *transportation system efficiency* and *transportation program equity* was not easily resolved.

Second, there was general consensus (with a few vocal exceptions) that transportation infrastructure investment should no longer subsidize costly urban sprawl and its concomitant social and environmental ramifications, but that it should be carefully analyzed for its ability to create economic growth. Economic analysis of transportation projects can point to the beneficiaries who can best afford to finance projects, and who would be willing to, given the gains they will achieve. Infrastructure management strategy should emphasize more efficient use of existing capital stock rather than new projects whose costs are not clearly outweighed by the contributions offered by potential beneficiaries.

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

Third, there was a general feeling that while goods movement will continue to play a crucial role in the economic growth of Southern California, the benefits derived from local infrastructure investments are conferred on many regions of the country and world. It will be a challenge to find ways to make these external beneficiaries contribute more to financing local and regional transportation infrastructure investments, in order to better balance the costs and benefits. On a more localized scale, inner-city community development should be seen as a crucial component of a regional economic strategy, and therefore the costs and benefits should be more equitably shared throughout the region.

Fourth, and finally, most agreed that California leaders must develop an overall vision and strategy for economic development which clearly reflects the role of transportation infrastructure policy, and which integrates objectives for land use and air quality as well. This will enable a better assessment of whether the vision is being achieved. By the same token, planners in local communities must better coordinate public and private efforts to create places that are vibrant, pleasant, and sustainable. Both efficiency and quality of life must be reflected in regulatory and market-based approaches to densifying and integrating the use of land, improving air quality, and more equitably distributing the costs and benefits of transportation.

The program was developed by a Steering Committee of representatives from public and private agencies and organizations. Additionally, the program was supported by a broad cross-section of public and private co-sponsors. The UCLA Extension Public Policy Program gratefully acknowledges both the Steering Committee and the co-sponsors for their important contributions to this program and the overall symposium series.

This report summarizes key findings and discussions of the symposium. Part II presents the key points discussed in each of the eight sessions of the symposium. Part III contains a series of appendices which include the program agenda, a list of presenters and panelists, a roster of participants, and a list of the symposium co-sponsors and cooperating organizations.

## II. SYMPOSIUM PROCEEDINGS

### TRANSPORTING THE ECONOMY: CONNECTING IDEAS WITH PRACTICE

**Brian D. Taylor**, Assistant Professor of Urban Planning, University of California, Los Angeles

Professor Taylor described four interrelated themes of the conference, highlighting two sets of tensions he expected to run through the discussions, and describing the overall substance to be addressed over the three days of the symposium.

Professor Taylor described the four themes as follows:

1. GLOBAL TRADE PATTERNS AND TRANSPORT'S ROLE, including business trends toward Just-In-Time (JIT) delivery rather than storing inventory, a rapidly increasing role for telecommunications in goods movement, and the globalization of markets, labor, and materials;
2. THE FUTURE OF TRANSPORTATION IN THE ECONOMY, including ways to determine what is a good transportation investment, and the role for transportation in local and regional economic growth;
3. IMPLICATIONS FOR AIR QUALITY AND LAND USE, including changing market patterns and new regulatory approaches;
4. IMPLICATIONS FOR TRANSPORT POLICY AND FINANCE, including the role of economic analyses in decision-making and connecting the costs and benefits of financing transportation infrastructure.

The two tensions described by Professor Taylor were as follows:

A. CONSIDERING COSTS AND BENEFITS OF TRANSPORTATION INVESTMENTS *AT THE MARGIN*, vs. CONSIDERING COSTS AND BENEFITS *SYSTEMWIDE*. Project-based marginal analyses are used for clarity and parsimony, but over time, the sum of these analyses may miss important economic and environmental costs and benefits. Charles Lindblom's "Muddling Through" concept--which advocates incremental decision-making--supports the former, while the "Tipping Point" hypothesis, which argues that cumulative effects may be more important than any single project in the long run, underscores the importance of the latter.

B. ANALYZING TRANSPORTATION *SYSTEM PERFORMANCE* vs. ANALYZING

**TRANSPORTATION PROGRAM PERFORMANCE.** Economists often question whether policymakers recognize the distinction between overall benefits of efficiency and the transfer of benefits from "winners" to "losers." As an example, Professor Taylor described a North Carolina DOT official who described the objective of the state's transit funding to "put butts in seats" on buses, but who also quickly added that it was essential to ensure that every part of the state received a "fair share" of funding--whether cost-benefit analysis would warrant it or not. On the other hand, policy-makers question whether economists understand the political realities of transportation. In order to be stable and effective, he asserted that transportation programs have to achieve some economic and engineering efficiency, and at the same time maintain some measure of political equity.

Finally, Professor Taylor summarized the substance of the sessions to follow. He emphasized the prominent role of goods movement in the economy and its influence on air quality and land use patterns, and the growing interdependency among modes--air, sea, rail, and highway transport. He also highlighted an undercurrent concerning the relationships between who benefits, who pays, and the design of future transportation infrastructure projects.

## **DAY ONE THEME**

### **Transportation Implications of Economic Growth and Restructuring**

#### **THE RESTRUCTURING OF ECONOMIC PRODUCTION: IMPLICATIONS FOR TRANSPORTATION**

**John Kasarda**, Kenan Distinguished Professor of Business Administration and Director of the Frank Hawkins Kenan Institute of Private Enterprise, University of North Carolina at Chapel Hill  
**Steven Erie**, Associate Professor of Political Science, University of California, San Diego  
**Carl Guardino**, President, Santa Clara Valley Manufacturing Group  
**Brian Taylor (Moderator)**

The first half of Professor Kasarda's presentation examined the mobility of goods, information, and labor in new economic production cycles. Professor Kasarda discussed the current trend of international trade and the global marketplace within the context of transportation history, and defined the current "fifth wave" as a time when aviation is integrating with the surface modes of transportation (sea, rail, and highway) to become a dominant freight mode. Advances in transportation technology and infrastructure can play a critical role in the future competitiveness of U.S. industry as global sourcing and exporting, Just-in-Time (JIT) production, and speed-to-market take on heightened importance. Professor Kasarda argued that transportation systems must find ways of responding to JIT inventory delivery (which is replacing stock and warehousing), and the integration of markets among firms that traditionally competed in the past. Fast delivery adds value to the product. As speed of delivery becomes increasingly important and firms "win" or "lose" based on the *survival of the fastest*, those firms that are most agile will be in the best position to respond to unpredictable changes in the global marketplace.



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

Professor Kasarda outlined changes in the American economy that are requiring transportation systems to be faster, more adaptable, and more agile. Innovative infrastructure and information systems are being used to support manufacturing competitiveness and supply-chain management. Increased demand for production facilities located near 24-hour access to global markets will require a better integration of transportation modes, telecommunications, and industrial facilities. Markets are integrating in ways they never have before, and alliances are emerging among firms that traditionally were competitors. Investment now in trade-related transportation infrastructure will put regions in the position to be most efficient in the future and to adapt to changes in technology.

In the second half of his presentation, Professor Kasarda focused on the idea that new logistical systems and changes in production and transportation technologies demand new global infrastructure which can fully integrate all transportation modes, telecommunications, and industrial facilities to cut sourcing, production, and delivery cycle times. A public/private partnership in North Carolina is developing such a prototype infrastructure, called the Global TransPark, to meet the challenges of the international marketplace and provide U.S. manufacturers with strategic advantage in the new speed-driven economic era. The Global TransPark is located at a large, underutilized general aviation airport 80 miles east of the Research Triangle in Eastern North Carolina and will ultimately have a 5,000-acre international air cargo-industrial complex centered on two long-range runways. Professor Kasarda explained that although it is located near seaports, interstate, and rail corridors, there is ample adjacent land that is developable for additional needed infrastructure. He described Global TransPark as a future-oriented logistical multi-modal center focused on fully integrating air, sea, highway, and rail transportation, and that it is a completely reformulated facility offering diverse transportation services based on fast delivery. The facility targets global markets and time-based competition as the keys to business success. It also recognizes that air cargo is the fastest growing mode for international trade and the need for facilities and technologies to leverage that capability. He argued that Global TransPark represents a new kind of infrastructure--an infrastructure for *competition*--that responds to business needs, business strategies, and reduced cycle times.

Although there is an urgent need for advanced intermodal centers and new air cargo capabilities in Southern California, Professor Erie believes there will be great obstacles to overcome before Global TransParks can be built there. Professor Erie explained that Southern California suffers from a regional imbalance in its air cargo network--96% of air cargo is shipped out through only two airports [Los Angeles International (LAX) and Ontario International] - which puts tremendous strain on the surrounding highway network.

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

Professor Erie suggested that transportation policy-makers need to evaluate the feasibility of a new intermodal cargo point in Southern California, because LAX is incapable of handling the total export activity of the region, including trade and business and professional services. Professor Erie suggested that surplus military bases may provide the solution. He also noted the benefits of the Global TransPark, but he added that there would be problems developing similar facilities in Southern California because of a developable lack of space, a lack of university involvement, and a lack of public-private partnerships to finance and manage such a project.

Mr. Guardino drew a parallel between concerns with moving goods and services in global marketplaces and moving people in the Silicon Valley of Northern California, one of the most congested regions in the nation. He remarked that the most important local product is the employee, and that mobility of labor is vital to the success of businesses and it has bottom-line impacts in terms of recruitment and retention of employees. According to CEOs of Silicon Valley firms, traffic and housing are the two most important features that are crucial to the success of the company. He added that employers now play a critical role in the mobility of their employees. The Silicon Valley is pioneering regional improvements to the transportation infrastructure through a dedicated half-cent sales tax and through the EcoPass program, which allows employers to pay for unlimited use of transit for their employees. Mr. Guardino explained that the EcoPass program allows employers to purchase transit passes for *all* of their employees at a reduced rate, making transit a barrier-free option for the journey to work and other trip purposes.

The subsequent discussion among the presenters and participants centered around the notion of the globalizing economy and the role transportation is playing in the new economy. One participant pointed out that the trend toward economic globalization may actually be cyclical or it may reverse. Professor Kasarda responded that advances in telecommunications have created a “real-time” world, and all indicators point to global supply chains that do not seem likely to reverse. There was also discussion about the applicability of the Global TransPark to other settings. The question of what impact global transportation infrastructure will have on older cities also arose and whether Global TransParks could work in built-up areas. Professor Kasarda responded that although older cities have infrastructure systems in place, the transportation system may not have the capacity to handle today’s volumes of traffic or new transportation technology. Because of the enormous space requirement, a Global TransPark must be located in a remote area. Professor Kasarda also pointed out that distance has become elastic; any firm located up to three hours from the Global TransPark (by surface transportation) can have delivery around the world in twenty-four hours. Therefore, if the surface transportation system is well-linked, concentration of activities around the site is not necessary. For these reasons, a remote site for Global TransPark is more attractive than an urban site.

There also was discussion and debate about the environmental impacts of remote Global TransParks. A symposium participant inquired about the air quality impacts of Global TransParks, and Professor Kasarda responded that a \$3.5 million environmental impact statement had been performed for the Global TransPark in North Carolina, and that the consortium is generously replacing wetlands at a two-to-one ratio as part of its

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

environmental policy. Another participant suggested that the Global TransPark will encourage sprawl in remote locations by causing housing and services to be built around it. Concerns were raised that new intermodal transportation hubs like TransPark, if sited on the urban periphery, will add to the decentralization of industry and sprawl of residences.

During the discussion, Professor Kasarda pointed out that transportation technology has surged far ahead of transportation infrastructure. In fact, transportation technology is severely limited by transportation infrastructure. According to Professor Kasarda, ISTEA and ISTEA II support intermodalism only at a primitive level, and we must expand the concept of intermodalism. A symposium participant observed that the Global TransPark seems on the verge of revolutionizing trade-related transportation, but Professor Kasarda responded that changes will be incremental, and it will take time to develop global networks. Another participant argued that change will focus on adapting and modifying existing infrastructure. It also was suggested that Global TransPark and Silicon Valley's EcoPass Program are at opposite ends of the infrastructure-adding spectrum of transportation investment--Global TransPark requires a great deal of infrastructure and new construction, while the EcoPass program is an immediate anti-congestion measure that does not require any new infrastructure.

There also was further discussion about the applicability of the Global TransPark to Southern California. As Professor Erie and others pointed out, there is a lack of space for such a facility and a lack of public-private initiatives. Others noted that despite the fact that LAX is operating at capacity and there is little hope of expansion, the real intermodalism issue in Southern California is the sea to rail link, which is being dealt with in part by the Ports of Los/Angeles Long Beach expansions and the Alameda Corridor Project.

### **FREE TRADE AND THE FUTURE OF LOCAL AND GLOBAL GOODS MOVEMENT**

*Gordon Palmer*, Manager of Master Planning, Port of Long Beach

*Paul Ganster*, Director, Institute for Regional Studies of the Californias, San Diego State University

*Alan Sweedler*, Director, Center for Energy Studies, San Diego State University

*James Boyd*, Managing Director of International Consulting, CALSTART and former Executive Officer, California Air Resources Board

*Honorable D. Elliott Parks*, Mayor, City of Del Mar and Chair, San Diego Association of Governments

*Joanne Freilich (Moderator)*, Assistant Director, UCLA Extension Public Policy Program

This session focused on case examples of internationally important transportation facilities within Southern California. The economic and environmental costs of such facilities as the Alameda Corridor Project, the Ports of Long Beach and Los Angeles, and the U.S.-Mexico border crossings near San Diego were discussed. The importance of better linking benefits of such facilities to their direct and indirect costs--by using economic gains to offset localized costs, for example--was emphasized.

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

Mr. Palmer from the Port of Long Beach explained that the international-trade proportion of the Gross National Product (GNP) of the United States has increased historically, and that the combined Ports of Los Angeles and Long Beach--as the busiest customs district in the country--play a major role in the national economy. According to Mr. Palmer, this is a result of the geographic position of California in the country and on the Pacific Rim, as well as the strength and size of regional and state economies. He noted that were California a nation, its Gross Domestic Product (GDP) would be 7th largest in the world; were the L.A. Basin a country, its GDP would be 13th. Mr. Palmer also noted that half of the imports that come through these combined ports are forwarded to destinations east of the Rockies, demonstrating the importance of this gateway for national goods movement.

Mr. Palmer argued that infrastructure improvements are needed to sustain and increase economic growth, including deeper harbors for increasingly large ships; pier facilities to service the increase in ships that stop at fewer U.S. ports, but almost always include Los Angeles-Long Beach; railyards in the ship terminals, in order to speed cargo on its way without an intermediate truck trip; and consolidation of outbound rail and highway corridors into grade-separated, and therefore more reliable, surface systems.

Mr. Palmer noted that with respect to transportation, value is added to goods only when they are moving, not when sitting still. Finally, he questioned who should pay for all of these infrastructure improvements, given the national and international origins and destinations of Southern California port business.

Professor Paul Ganster described the role of the North American Free Trade Agreement (NAFTA) in speeding a transformation of the U.S.-Mexico border region from relative isolation to an area of economic growth. He noted that the resultant increase in northbound truck traffic has burdened local communities and infrastructure, adding that the international border creates complications for both infrastructure pricing and investment decisions by local, state, and federal entities. He further noted that proposed user fees such as tolls on road use at the border could disproportionately affect local residents and businesses, by requiring them to pay fees for trips that are essentially local. Finally, he noted that there are large infrastructure needs at the border, and who pays for transportation infrastructure is a critical question, since the benefits of trade are national.

Professor Allan Sweedler noted that the U.S.-Mexico border creates complications for air-quality regulation as well, because the Tijuana-San Diego area is a single airshed, regardless of lines on a map. He added that regarding new truck emission regulations, it is important to note that trucks remain on the road for 25-30 years. As a result, any change in vehicle engine regulations lag considerably; for example, the majority of trucks on the road today were manufactured before 1985, when many emission-control regulations were put into place. Also, he explained that diesel fuel in Mexico has higher sulfur content than that in the U.S., and this results in a high proportion of particulates and NOx emissions, despite the fact that truck traffic accounts for only 4% of the Vehicle Miles Traveled (VMT) in the region. Since many trucks are fueled in one country and drive into the other, attempts to improve air quality by regulating engines or fuels must be coordinated across the border.

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

Dr. Parks noted that San Diego-Tijuana should be seen as a single metropolitan region, with most of its manufacturing jobs south of the border. He argued that rail and highway transportation within this region needs to be better coordinated, particularly across the border. Caltrans and Federal ISTEA monies have been used to improve local coordination and have strengthened the center city, but a lagging economy, a reduction in tax revenues, and the need for seismic retrofits of transportation facilities have led over time to a decreased focus on regional coordination.

Mr. Boyd pointed out that air pollution ignores borders, making air quality an international issue in the region. At the same time, transportation facilities such as air, sea, and highway infrastructure are major economic engines. He argued that air quality "rests upon" a three-legged stool of land use, transportation, and economic growth (of which population growth is a part), and that a healthy environment goes hand-in-hand with a healthy economy. However, the distributive issues of who benefits and who pays remain important.

Mr. Boyd further discussed the significant role of technology in improving air quality, particularly in the development of alternative fuels. He also pointed out that efficiency improvements due to technology such as ITS for both goods tracking and vehicle guidance can lead to air quality improvements. However, he added that increases in VMT have negated most of the air quality improvements gained through cleaner vehicle engines. He concluded that it is necessary to look at these issues from a systemwide perspective, including air quality, land use, and economy--and to be creative with solutions. He concluded by pointing out that when the economy suffers, environmental programs are often weakened. He urged that when the economy is strong, it should help support environmental improvements.

Comments and questions on this session included a discussion of whether more investment should be made in air cargo infrastructure because the value added is highest there. Also, there was a discussion of the tendency of communities to try to "capture" benefits of economic growth by slowing freight traffic through their areas. Again, it is important to ensure that groups who pay for investments--both directly and indirectly--also benefit from them.

### **DAY TWO THEME**

### **The Relationship Between Transportation Investment and Economic Benefit**

### **EVALUATING ECONOMIC BENEFITS OF THE TRANSPORTATION SYSTEM**

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

**David Forkenbrock**, Director, Public Policy Center and Professor, Urban & Regional Planning and Civil & Environmental Engineering, University of Iowa

**David Gillen**, Adjunct Professor of Civil & Environmental Engineering and Research Economist, Institute for Transportation Studies, University of California, Berkeley

**David Lewis**, President and CEO, Hickling Lewis Brod Inc., Silver Spring, MD

**Martin Wachs (Moderator)**, Director, University of California Transportation Center and Professor of City & Regional Planning and Civil & Environmental Engineering, University of California, Berkeley

This session centered on the relationship between benefits and costs of transportation system investment, and the relationship of those investments to land use and air quality. Professor Forkenbrock's presentation focused on ways that transportation investment can lead to positive effects on the economic climate. Economic development occurs when income and productivity increase: since transportation plays a significant enabling role for economic development, he said transportation officials should target public capital investment to locations where they will get the greatest benefits in return for a given level of expenditure. Professor Forkenbrock stressed that transportation investments produce economic benefits (only) when they improve productivity and increase incomes. Policymakers can make poor investments when they focus on, for example, the construction jobs generated by a transportation project rather than on how the project will improve transportation system efficiency. Enlightened decision-making that considers costs, benefits, economic impact, and public sentiments is key in balancing the social and environmental costs of transportation investments. Congestion alleviation measures that lead to system reliability improvements benefit all users of transportation systems.

Professor Forkenbrock warned that transportation officials should be wary of transportation investments that merely bring about a *transfer effect*, whereby economic activity is enhanced in one location at the expense of another location, leading to no true gains in economic activity. Instead of transferring benefits, transportation investments should enhance regional economic systems. He noted that evaluating system performance will lead to the identification of system-wide synergies and efficiencies that may be overlooked in project-by-project evaluations. Professor Forkenbrock stressed the importance of overall *system* performance, which is more important than access to any particular link or node of a transportation system. When evaluating where to invest capital in transportation projects, he said that consideration should be given to locations that will benefit industries where there is a large potential payoff, and that system-wide evaluation reveals system-wide synergies, as opposed to project-by-project evaluations which can tend to be somewhat myopic.

Dr. Lewis' presentation focused on the importance of thorough analysis in decision-making that should engage stakeholders, experts, and the general public. He argued that using cost-benefit analysis to find risk-sharing solutions is an important method in engaging the public in quantified analysis of alternative transportation programs. Dr. Lewis outlined a plan to engage the constituents of transportation projects along with

key stakeholders and experts into the decision-making process. He noted that thorough evaluation and review of alternative transportation proposals, leading to consensus-building on how costs and benefits will be shared, is an effective way to move a project forward. Dr. Lewis used several case studies of project analyses, including a new airport near Bellingham, Washington, and a high-speed rail alignment parallel to I-5 between Los Angeles and San Francisco, to show how a wide range of people were engaged and how the analysis of alternatives revealed how the costs and benefits were distributed. Dr. Lewis proposed incorporating analyses of uncertainty into public debates of alternative proposals. In this way, more information could be made available to stakeholders about the risk associated with the costs and benefits of alternatives, and expected benefits could be used to defray the costs of a project--e.g., air traffic noise--which might fall unevenly upon some groups.

Professor Gillen concluded the session by linking mobility with innovation and noted that "transportation allows us to do different things, and it allows us to do things differently." He noted that traditional ways of economically evaluating projects have often undervalued project benefits; we should remember that as we improve access we also improve consumer choice, which itself is a benefit. He argued that managing capacity of existing transportation systems should be a higher priority than expanding the capacity of those systems--in other words, *manage better, build less*--and that only focusing on the supply-side is an error. He added that investment decisions should consider the demand-side of transportation and the connectivity that the system provides to individuals and firms, who are the end-users. Professor Gillen summarized his thoughts by stating that we need to better target investments to those projects that enhance system connectivity and we need to emphasize in our decision-making the enabling function that transportation serves.

In the discussion that followed the presentations, a question arose concerning the best method of developing confidence among constituents in risk analyses of transportation projects. Mr. Lewis responded that risk analysis software can be used by the public to cross-check the findings of transportation officials. He also said that it is important that the group reviewing risk analysis is large enough and laced with non-partisan experts. In terms of risk and probability analysis, a symposium participant pointed out that municipalities and developers don't want a range, they want a given number. Mr. Lewis responded that planners need to educate elected officials and bureaucrats about the process of risk analysis and exactly what the results signify, and that plans accordingly should be made on the basis of probabilities.

## **TRANSPORTATION INVESTMENTS AND LOCAL ECONOMIC DEVELOPMENT**

*Marlon Boarnet*, Assistant Professor, Department of Urban & Regional Planning, University of California, Irvine

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

**Paul Gottlieb**, Associate Director, The Center for Regional Economic Issues, Weatherhead School of Management, Case Western Reserve University

**Denise Fairchild**, President, Community Development Technologies Project, Los Angeles

**H. Pike Oliver**, Vice Chair, Interra Corporation, Newport Beach

**David Forkenbrock** (*Moderator*)

The emphasis of this session was on the distributive effects of transportation and land development policies. The role of transportation investment in both developing and shifting economic gains was discussed, and common assumptions about the equity of access provided by the transportation system were challenged. Participants argued that both the economy and the transportation system should be seen as regional, and that strategies to improve the economic equity of groups could be seen as benefitting the entire region.

Professor Boarnet described the tendency of economists to look at systemwide benefits and network effects. He discussed production-function studies, which try to describe the influence of inputs--such as infrastructure (public fixed capital) investments--on output, i.e. economic activity. In reviewing a number of such studies in order to assess the pattern of return on investment, he found a wide range of output values, but he noted that those which were most analytically rigorous were closest to zero--meaning that there were few measurable positive economic impacts of such expenditures. Nonetheless, many public investments are made to avoid negative spillovers--losing economic activity to other areas. Where competition is from neighboring counties, spillovers can also be positive, due to the "network effects" of any improvements in a local area. Professor Boarnet studied the influence of a 1% increase in Los Angeles County's highway infrastructure on economic activity in other California counties. While some nearby counties gained economic activity, many others--particularly in the San Francisco Bay area--lost economic activity. In fact, according to Professor Boarnet, when aggregated at the state or federal level, economic activity seems to be a zero-sum game, merely shifting activity from one area to another. Professor Boarnet concluded that if this is true, then state and federal governments should not be using tax monies to take resources from one area in order to subsidize economic growth in another area; investment should be made using local dollars in order to provide local benefits.

Finally, Professor Boarnet noted that Orange County is pursuing several locally-funded transportation infrastructure projects, including private toll-funded HOV lanes, and projects with sales-tax-increment financing. He added that local funding will require the development of new financing tools, such as congestion pricing, tolls, and local taxes, and that there should be a closer geographic correspondence between who benefits from transportation infrastructure projects and who pays for them.

Dr. Paul Gottlieb spoke of strategies which specifically address the access needs of the urban poor, through both transportation infrastructure and programs to empower inner-city residents. He noted that there is a challenge in focusing the economic development efforts of elites toward poverty issues. He then addressed what he called "the standard argument that spatial mismatch causes a disconnection between the urban poor and entry-level jobs,"



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

showing that in northeastern Ohio, such jobs are in fact relatively concentrated in the central cities of Cleveland and Akron. If the strategy is to get people to jobs (rather than moving the jobs), he argued that neither suburbanization nor reverse commuting programs are likely to help. Instead of focusing only on spatial mismatch, programs should address lack of skills, racial discrimination in hiring, and lack of information dispersion about new job openings. He concluded that anyone without a car is disadvantaged in a job search, but residents in central cities are relatively less disadvantaged, and that attention should be paid to the special need for access to child care that disproportionately falls on women.

Ms. Fairchild suggested that there are three types of issues in inner-city economic development: “*drought*,” meaning capital flight spurred by cheap transportation; “*leakages*,” whereby limited local capital is drained to other areas and its potential multiplying effects lost; and “*isolation*,” which allows concentrations of poverty and poor accessibility to create a downward spiral. She argued that transportation solutions to these problems should ensure *equity* in transportation investments, and emphasize the competitive *efficiency* of inner-city locations. Further, she remarked that *sustainability* should be increased by mixing land uses and social classes and by encouraging localization of consumption and production. She advocates transportation reinvestment in the inner-city to attract commercial development. Rather than trying to get inner-city workers to jobs in the suburbs, we should attempt to get them to jobs in their own area. Transportation options are needed for this.

Mr. Oliver agreed that transportation is a necessary, but not sufficient, precursor to community economic development. Good schools and colleges, for example, are at least as important. Other commenters stated that it is necessary to rebuild a consensus in favor of public investments that will benefit everyone. Another participant echoed the need to appeal to metropolitan elites in basing poverty-alleviation strategies on economic growth. Regions with strong economies are usually those with vibrant central cities; yet, accessibility and transportation infrastructure are not enough--there must be economic growth that pays for investments.

Furthermore, Mr. Oliver suggested that the losses that communities experience might be outweighed by the gains, and that the best way to determine this is to better attach the costs of transportation to those who benefit. It was further suggested that transportation investments should stop subsidizing sprawl and instead focus growth in existing communities. In order to achieve this, it would be necessary to overcome political resistance of those who benefit most in the current system of suburban expansion. Another commenter noted that analysis of losses and gains must be regional, and the losers must share in some of the gains in order for a strategy to be politically palatable.

### **RECONCILING GROWING GLOBAL FREIGHT MOVEMENT AND AIR QUALITY ATTAINMENT (MODERATED ROUNDTABLE)**

**Tom Cackette**, Deputy Executive Officer, California Air Resources Board

**Tim Carmichael**, Policy Director, Coalition for Clean Air

**Clifford Gladstein**, Director, Interstate Clean Transportation Corridor

**Margo Oge**, Director, Office of Mobile Sources, U.S. Environmental Protection Agency,

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

Washington, D.C.

**Richard Schoeneberg**, Technical Air Quality Leader, Federal Highway Administration, Washington, D.C.

**Mark Stehly**, Assistant Vice President, Environmental and Hazardous Materials, Burlington Northern Santa Fe Corporation

**Stephanie Williams**, Director, Environmental Affairs and Industry Research, California Trucking Association

**Jay Winter**, Executive Secretary, Steamship Association of Southern California

**LeRoy Graymer (Moderator)**

The multi-modal movement of goods required by today's global economy has enormous environmental impacts. Freight movement overall has been identified by regulatory agencies as a largely uncontrolled emissions source. This session dealt with challenges presented in maintaining a healthy and productive economy while trying to meet ambient air-quality standards. There was general agreement that transportation officials must find an appropriate time frame in which to achieve environmental standards, and identify mechanisms to institute regulations without placing a disproportionate burden on any sector of industry or society.

The panelists and participants focused on the following four issues:

- timing and phase-in of new regulations
- technology development vs. implementation schedule
- incentives and strategies to make environmental regulation effective and equitable
- global free trade vs. environmental regulation

The transportation sector contributes more to air pollution than any other sector. Ms. Oge outlined ambitious and aggressive federal programs through which the U.S. Environmental Protection Agency is attempting to monitor and regulate air pollution at the federal level. Although advancements in new engine types and new fuel technologies are underway, Ms. Oge challenged transportation professionals to consider techniques for aiding current fleets in achieving air quality standards.

Mr. Cackette pointed out that California leads the nation by adopting air emissions standards which are more stringent than federal regulations. He said that cleaner air will largely be a result of improved vehicle and fuel technology, and other air quality mitigation measures will, in the long run, play a secondary role in improving air quality. Mr. Cackette stressed that ports and airports can take a lead role in complying with air quality standards; on the local level, officials can develop their ports and airports to become models of environmental efficiency. Mr. Cackette also proposed that local governments use vehicle registration fees to promote alternative fuel programs; this proposal calls for increased availability of alternative fuels, not the elimination of diesel.

Mr. Schoeneberg stated that the coordination of environmental issues with infrastructure is complicated by the fact that there is a temporal mismatch between air quality objectives (which have a ten- to twelve-year horizon) and transportation facility development goals

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

(which have a ten- to twenty-year horizon.) He also argued for an international harmonization of air quality standards, and to bring standards to the highest level--the California level. In nonattainment areas for NO<sub>x</sub>, the FHWA has begun curtailing funds for transportation systems expansion.

Mr. Stehly suggested that although some alternative fuels have helped improve air quality, they also have poor energy efficiency. Mr. Stehly also pointed out that there are only two locomotive engine companies that retrofit and remanufacture engines to comply with emissions standards. Locomotives also are ahead of other modes because nonstandard engines will be replaced in the Southern California basin within five years.

The panelists from environmental organizations asserted that transportation policy should be aimed at creating incentives to attain air quality goals that are both efficient and equitable. Transportation officials have the capability to encourage environmental responsibility through market incentives for new technologies. Mr. Carmichael stressed the importance of tough regulations and market incentives that would complement each other and be mutually reinforcing. He also stressed the importance of public input in the development of environmental regulations. Mr. Gladstein stressed the importance of introducing low-NO<sub>x</sub> technologies into truck fleets as soon as possible, possibly using market-based mechanisms (through public-private partnerships) to accelerate that introduction. Some panelists made the point that new technology cannot be simply imposed--it needs to be introduced through sustainable strategies.

Each of the industry representatives on the panel outlined programs that their organizations were undertaking to meet air quality standards, and their hopes for future approaches to environmental regulation. Mr. Winter described programs to reduce emissions by the shipping industry, including the introduction of an off-shore shipping channel, the usage of alternative low-sulphur fuels near port areas, and the slowing of ships near the approach to the Los Angeles/Long Beach ports. Ms. Williams suggested that decisions be made on a state-wide basis for technology standards and emissions standards, and that the trucking industry should be aided in determining the best policies for complying with new standards. In terms of air quality, Ms. Williams suggested that the EPA should regulate the engine manufacturers and not the truckers; the trucking industry will be better able to comply with environmental regulations when it is given clearer direction about how to comply. The best way to achieve this, according to Ms. Williams, would be standards and implementation guidelines packaged together.

### **ROUNDTABLE: EFFECTS OF NEW ECONOMIC PRODUCTION AND DISTRIBUTION TECHNOLOGIES ON URBAN FORM AND LAND USE**

*Genevieve Giuliano*, Vice Dean and Professor, School of Urban Planning & Development, University of Southern California

*David Godschalk*, Stephen Baxter Professor of City & Regional Planning, University of North Carolina at Chapel Hill

*Mark Horton*, Manager of Strategic Planning - Northwest Region, United Parcel Service, San Ramon, CA

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

**Gary Schoennauer**, Planning Consultant, The Schoennauer Company and former Planning Director, City of San Jose

**Brian Taylor (Moderator)**

The historical relationships between land use and transportation have been well-studied, but how emerging economic patterns will influence these relationships is unknown. This session reviewed the importance of agglomeration and “place” in the face of economic pressures for speed, as well as the role of transportation and development costs in emerging urban patterns.

With reference to Professor Kasarda's presentation on global infrastructure, Mr. Horton agreed that speed in transportation has become the most important factor in business competition today. He added that communications are also an essential part of Just-in-Time (JIT) delivery, and stressed the importance of the Internet and customer-used software in moving goods. He noted that the fastest growing sector in American business is comprised of small firms with fewer than 100 employees. He predicted that for land use, these trends mean more dispersion and less need for warehousing.

Professor Giuliano reminded the participants that the benefits of agglomeration in cities--such as increased personal interaction--will remain an advantage of existing cities, because they already have infrastructure in place to meet the needs of telecommunications technology users. At the same time firms are emphasizing flexibility, the labor force is also becoming more flexible, changing and combining jobs more frequently. This flexibility requires access to clustered opportunities, and thus continues to confer advantages upon large and growing medium-sized urban agglomerations.

Mr. Schoennauer stated that in both San Jose and California, jobs lost in the recession were more than made up for in a year's recovery, and that this was due to the underlying strength of the economies in California's urban areas. He noted that there are still agglomeration advantages for the headquarters of high-tech firms in downtown San Jose, even while they are relocating certain other functions to remote areas. He further argued that the quality of life in urban neighborhoods, fostered by light rail transit, critical mass of activity, and sprawl-limiting city policies, has continued to attract both residents and employers.

Professor Godschalk argued that while speed has become important, location and sense of place continue to define the purposes of cities. He observes a reversal in professional practice--land use planners are now trying to serve the objectives of transportation planners by manipulating their plans to help meet transportation goals, whereas in the past transportation strategies were subservient to land use plans. Professor Godschalk noted that both land use and transportation planners need to combat sprawl, to resolve disputes about development, and to work toward making places meet the needs of people. He conceded that this mission is unapologetically normative, and emphasized the importance of equity in distributive issues as we move to the future.

Professor Giuliano agreed that quality of places attract both firms and higher-income workers, as do good universities. Mr. Horton noted that once located, firms tend to stay

where they are. He also pointed out that while congestion is a cost that is passed on to consumers, density provides significant cost savings that can also be passed on. Professor Giuliano added that because transportation is underpriced, there is less density in urban areas. She noted that while the San Jose example may demonstrate that the benefits of density can outweigh the costs of congestion, the fact that firms "spin off" other functions to more remote places also reflects the increasing ease and affordability of transportation and communications between distant sites.

Mr. Schoennauer argued that increased density is more efficient from a municipal point of view, but added that the attraction of an urban quality of life is what keeps places like San Jose relatively dense today. Professor Godschalk pointed out that such urban quality of life can be self-regenerating where it exists, but that it is difficult to generate it in suburbs and rural areas. Mr. Schoennauer stated that cities could become denser by providing attractive amenities. One observer asked where the evidence of a centralizing trend could be found, as the long-established pattern is a strong tendency toward sprawl and decentralization. Another noted that firms have become systems, with some parts agglomerating in cities, and others being flung to suburbs and exurbs.

Professor Giuliano raised the issue of development costs, noting that since developers will site projects wherever they can make the most money, they are drawn to less expensive unbuilt land on the metropolitan fringe. Several speakers summarized that planners must work with developers to create attractive places in which people will want to live their lives, and that smart infrastructure choices need to be made within the context of global economic forces which are difficult to influence.

### **DAY THREE THEME**

### **Linking Economic Considerations to Transportation Policy and Finance**

#### **LINKING FINANCE TO THE ECONOMIC BENEFITS OF TRANSPORTATION INVESTMENTS**

*Martin Wachs*, Director, University of California Transportation Center and Professor of City & Regional Planning and Civil & Environmental Engineering, University of California, Berkeley

*Sam Zimmerman*, Associate Vice President, Daniel, Mann, Johnson & Mendenhall; and former Special Assistant, Federal Highway Administration, Washington, D.C.

*Andrew Poat*, Chief Deputy Director, California Department of Transportation

*Lawrence Dahms*, Executive Director, Metropolitan Transportation Commission, Oakland, CA

*Joanne Freilich (Moderator)*

Reflecting the many calls in earlier sessions for the costs of transportation systems to be better linked to the system's beneficiaries, this session evaluated mechanisms for transportation officials to discover the balance between costs and benefits, and to use transportation pricing as part of the strategic policy itself. All panelists agreed that emerging technologies have the capability of revolutionizing the finance of transportation systems by requiring users to finance the systems they use; it is necessary to rethink decisions about funding transportation in California in concert with the implementation of new technologies. Specifically, distance-based fare and time-of-day pricing structures emerged in the discussion as mechanisms to equitably deliver transportation services.

Professor Wachs stressed the importance of transportation finance policies which align costs with who benefits from the investment. By charging more to the users who receive the most benefits, the system of charges itself will become an incentive toward changing travel behavior. He argued that environmental goals will be more easily realized through transportation systems that charge the users for the benefits they receive. When the transportation system is designed to achieve specific goals, it will be easier to determine whether or not a transportation service is priced correctly.

Professor Wachs argued that user fees are a more appropriate funding mechanism than the sales tax for achieving equity goals in highway finance, since the general sales tax does not charge beneficiaries their fair share of costs. He stated that users should also be charged at the time and place of use, and fees should be based on the benefits received. Professor Wachs further pointed out that targeted user fees, such as congestion pricing, highway tolls, and transit fares differentiated by distance and time of day more equitably distribute costs among beneficiaries than flat fares and general taxes.

For example, he pointed out that distance-based pricing of transit fares, which charge more for longer trips, is one of the factors that has contributed to slower decentralization of cities in Western Europe. In contrast, flat transit fares and inexpensive highway travel has encouraged dispersal in U.S. cities. Professor Wachs stated that highway pricing has not been implemented because Americans are generally opposed to highway pricing policies and prefer the gasoline tax, and, more recently, sales taxes.

Bearing these issues in mind, Professor Wachs outlined important questions that we must ask when we consider fee and pricing policies. What should be done with the fees collected? Who should benefit? Is there a certain type of travel behavior that we are trying to encourage? Considering these issues will help us determine the best way to finance projects and analyze who the beneficiaries of the project are. He added that any pricing or fare policy should also be sensitive to social equity issues.

Mr. Poat advocated for a systems-integrated perspective to assemble a common vision of growth in California. Until policy leaders identify a plan for the next margin of growth in

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

California and its economy, it will be difficult to develop policies for capital investment in infrastructure that effectively respond to concerns for regional, statewide, and national growth. Mr. Poat pointed out that transportation infrastructure is becoming more and more difficult to pay for. He noted that we are now spending comparatively less on infrastructure development, and we have inefficiently and inequitably reallocated who pays for it. He also pointed out that emerging trends such as electronic tolling and congestion pricing will align those who pay with those who benefit.

Mr. Dahms disagreed with Professor Wachs' notion of charging highway fees instead of the sales tax, stating that the public does not favor gasoline tax increases. He suggested transportation funding be accomplished through property tax, since access to land is provided by transportation systems. He also pointed out the potential negative outcomes of alternative funding arrangements; e.g., if California's State Route 91 FasTrack project in Orange County proves successful, it could be a recipe for abandoning low-income populations and funding projects through user fees that are only affordable for those with the ability to pay.

Although Mr. Zimmerman suggested that the issues of price and finance should be separated from each other, he agreed with Professor Wachs that transportation systems should be priced to encourage more efficient travel behavior. In terms of financing transportation projects, Mr. Zimmerman pointed out the benefits of systems using mechanisms which have built-in funding components. He argued that bringing the private sector into financing infrastructure development would create market mechanisms which help align benefits with those who pay. Mr. Zimmerman concluded by pointing out that decisionmakers need to gain a better understanding about the complex relationships between transportation finance, pricing, and implementation measures.

### **LINKAGES TO FEDERAL LEGISLATIVE AND REGULATORY ACTIVITY: ISTEA REAUTHORIZATION AND NEW AIR QUALITY STANDARDS**

*Mary Nichols*, Executive Director of Environment Now and former Assistant Administrator for Air & Radiation, U.S. Environmental Protection Agency, Washington, D.C.

*Cindy Burbank*, Chief of Legislation and Strategic Planning, Federal Highway Administration, Washington, D.C.

*Debra Gebhardt*, Professional Staff Member, U.S. House Subcommittee on Surface Transportation

*LeRoy Graymer (Moderator)*

Mr. Graymer introduced the final session by reminding the participants that outcomes in public sector decision-making are complex, and that the costs and benefits are not only

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

economic. The session reviewed the current status of federal initiatives for air quality attainment and transportation spending, and discussed the interaction of these programs with innovations in technology.

Ms. Nichols, formerly of the EPA, wondered why air quality issues are often ignored in discussions about the land use-transportation connection. She noted that the Clinton Administration has taken bold steps to implement federal air quality programs and encourage the development of cleaner technologies, but that they had also urged flexibility and a cooperative approach to regulation. She noted that federal standards have different meanings for different areas of the country--many eastern urbanized areas will be non-attainment for NO<sub>x</sub> standards due to higher sulfur emissions, while western cities have more problems with dust, particulates, and nitrates. Ms. Nichols further commented that vehicle emissions remain the largest source of air pollution, and that diesel emissions are a particular problem. Finally, she stated her belief that the eventual phase-out of diesel engines should be an issue for discussion among transportation officials, because diesel fuels contribute the most to air-quality problems. In response to a question, she pointed out that without land use changes, the growth in vehicle emissions will continue to overtake air-quality technology-driven improvements.

Ms. Burbank described the status of a multi-year transportation bill to replace the Intermodal Surface Transportation Efficiency Act (ISTEA), which will come to the floor of the U.S. Senate when it convenes again in early 1998. She stated that the debate is primarily over the total amount of spending in the bill, and secondarily over the priorities for spending within that total. She reviewed various details, including her expectation that the number of factors to be considered in funding projects would be reduced, and that support for intermodalism would not substantially expand. She said that the Federal Highway Administration (FHWA) supports the Senate version, which includes a better integration of National Environmental Protection Act (NEPA) policies into transportation planning. She noted that funding of pricing strategies would not likely be encouraged through the Senate bill, but that technological improvements such as Intelligent Transportation Systems (ITS) would likely gain funding. She said that because it is a political decision, the formulas for distribution would reflect expected outcomes by state, rather than any specific goals. She did not hold out much hope for a special "freight formula" for California.

Ms. Gebhart agreed that the budget issue was the main issue postponing adoption of a transportation bill, and that overall budget issues will have to be resolved before moving a bill through the House of Representatives. She noted that funds were intended to be flexible according to regional priorities, and also noted the tendency for House members as a group to approve specific "pork-barrel" project proposals from specific Representatives. Finally, she indicated that advances in technology or pricing will happen through small demonstration projects that can be shown to achieve their goals. A commenter suggested that programs should foster innovation by setting low emission standards, which would allow market competition to favor only firms that meet the standards.



## APPENDIX A:

### SYMPOSIUM PROGRAM

December 7-9, 1997  
UCLA Conference Center at Lake Arrowhead  
850 Willow Creek Road  
Lake Arrowhead, California

#### Sunday Afternoon, December 7

#### DAY ONE THEME

#### Transportation Implications of Economic Growth and Restructuring

1:30 pm      **Transporting the Economy:  
Connecting Ideas with Practice**

This opening presentation outlines the goals for the symposium and draws together many of the connections between transportation, land use, and air quality policies and economic development and productivity to be addressed at this symposium.

*Brian Taylor*, Assistant Professor of Urban Planning, School of Public Policy & Social Research, UCLA

2:30 pm      **The Restructuring of Economic Production:  
Implications for Transportation**

Current and future changes in economic production and distribution have enormous implications for transportation. This session examines the increasing mobility of goods, information, and labor in economic production, emphasizing future demands on the transportation system, new patterns and trends in goods movement, and upcoming changes in production and transportation technologies. The presentation assesses how competitive success in the next century will require a better integration of transportation modes, telecommunications, and industrial facilities to cut sourcing, production, and delivery cycle times.

- **Transportation Infrastructure for Competitive Success**

**John Kasarda**, Kenan Distinguished Professor of Business Administration and Director of the Frank Hawkins Kenan Institute of Private Enterprise, University of North Carolina at Chapel Hill

**Commentators:**

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

**Carl Guardino**, President, Santa Clara Valley Manufacturing Group

4:30 pm Break and Room Check-in

5:00 pm Reception

6:00 pm Dinner

**Sunday Evening, December 7**

7:30 pm **Free Trade and the Future of Local and Global Goods Movement**

Dissolving trade barriers promise to radically alter the movement of goods (and labor) around the globe. This session explores the transportation implications of increasing international trade under both Pacific Rim Trading partnerships and the North American Free Trade Agreement (NAFTA). NAFTA, for example, has already increased trade between Canada, Mexico, and the U.S. and has stimulated new industrial centers along the Mexican border. Such changes raise important issues for policymakers, such as how the federal government, states and localities should pay for NAFTA-related transportation improvements vis-a-vis other transportation projects. The air quality implications of increasing international trade are also addressed in the presentations and commentary.

- **Evolving Patterns of Pacific Rim Trade and Implications for West Coast (Air/Sea) Ports**

**Gordon Palmer**, Manager of Master Planning, Port of Long Beach

▪ **NAFTA and Transportation: The U.S. – Mexican Border**

**Paul Ganster**, Director, Institute for Regional Studies of the Californias, San Diego State University

**Alan Sweedler**, Director, Center for Energy Studies, San Diego State University

**Commentators:**

**James Boyd**, Managing Director of International Consulting for CALSTART and Former Executive Officer, California Air Resources Board

**Honorable D. Elliot Parks**, Mayor, City of Del Mar and Chair, San Diego Association of Governments

**Open Forum Discussion**

9:30 pm Informal Reception/Discussion

**Monday Morning, December 8**

7:30 am Breakfast

**DAY TWO THEME**

**The Relationship Between Transportation Investment and Economic Benefit**

8:30 am **Evaluating Economic Benefits of the Transportation System**

Given limited transportation investment dollars, how do we *really* know the extent to which a transportation project will benefit the economy? How can we systematically balance social and environmental costs of transportation investments in determining project benefits? What does it take to do good analyses and make good decisions? How do we use this information to evaluate the tradeoffs between projects? These questions are addressed by three noted transportation economists.

- **Evaluating the Economic Costs and Benefits of the Transportation System: An Overview**

*David Forkenbrock*, Director, Public Policy Center and Professor, Urban & Regional Planning and Civil & Environmental Engineering, University of Iowa

- **New Ways of Thinking About Transportation Investments**

*David Gillen*, Adjunct Professor of Civil & Environmental Engineering and Research Economist, Institute for Transportation Studies, UC Berkeley

- **Using Economic Analysis to Make Good Transportation Investments: Recent Case Studies**

*David Lewis*, President and CEO, Hickling Lewis Brod Inc., Silver Spring, MD

10:15 am Break

10:45 am **Transportation Investments and Local Economic Development**

Transportation investments are frequently justified as tools for local economic development, though the exact links between transportation systems and economic revitalization are often poorly understood. This session examines how transportation investments affect land values, stimulate investment, and affect labor mobility through two presentations: The first examines how and where highway investments stimulate economic development and productivity, and the second examines the effectiveness of various transportation programs and investments in revitalizing economically distressed areas.

- **Highway Investments and Economic Productivity: Interpreting the Evidence**

*Marlon Boarnet*, Assistant Professor, Department of Urban & Regional Planning, University of California, Irvine

- **Transportation Investments in Inner-City Areas: Clarifying Means and Ends**

**Paul Gottlieb**, Associate Director, Center for Regional Economic Issues, Case Western Reserve University, Cleveland, OH

**Commentators:**

**Denise Fairchild**, President, Community Development Technologies Project, Los Angeles

**H. Pike Oliver**, Vice Chairman, Interra, Inc., Newport Beach

12:30 pm Lunch

**Monday Afternoon, December 8**

1:30 pm **Reconciling Growing Global Freight Movement and Air Quality Attainment (Moderated Roundtable)**

Dramatic projected increases in the movement of goods by plane, ship, train, and truck, while contributing to the economy, have enormous air quality implications. More stringent federal air quality standards for particulates and ozone also can likely impact the operations of the goods movement industry. At this roundtable session, representatives of regulatory agencies, goods movement sectors, and the environmental community discuss key issues and constructive strategies for achieving the dual goals of improved air quality and economic productivity associated with moving increased volumes of trade.

*Roundtable Chair:*

**David Calkins**, International Air Quality and Transportation Consultant

**Governmental Perspectives:**

**Margo Oge**, Director, Office of Mobile Sources, U.S. Environmental Protection Agency, Washington, DC

**Richard Schoeneberg**, Technical Air Quality Leader, Federal Highway Administration, Washington, DC

**Tom Cackette**, Deputy Executive Officer, California Air Resources Board

**Industry Perspectives:**

Trucking: **Stephanie Williams**, Director, Environmental Affairs and Industry Research, California Trucking Association

Railroads: **Mark Stehly**, Assistant Vice President, Environmental and Hazardous Materials, Burlington Northern Santa Fe Corporation

Shipping: **Jay Winter**, Executive Secretary, Steamship Association of Southern California

**Environmental Perspectives:**

**Clifford Gladstein**, Director, Interstate Clean Transportation Corridor and Immediate Past President, Coalition for Clean Air

**Tim Carmichael**, Policy Director, Coalition for Clean Air

3:15 pm Afternoon Break - Free time

5:15 pm Reception

6:00 pm Dinner

**Monday Evening, December 8**

7:30 pm **Effects of New Economic Production and Distribution Technologies on Urban Form and Land Use (Moderated Roundtable)**

Urban form throughout the United States is being affected by the ongoing decline in the “friction of distance,” the continued dispersal and fragmentation of cities, and increased reliance on fast, cheap, reliable transportation. How are cities and counties anticipating land use needs connected with changes in transportation technologies and systems? The session examines the effects of new production centers in rural areas, the declining role of concentrated employment centers, the increasing movement of goods in and between suburban and exurban employment centers, land needs for new production and transport technologies, and the role of technological change in affecting the location decisions of firms.

**Panelists:**

**Honorable Robert Bartlett**, Mayor, City of Monrovia; Vice President, Southern California Association of Governments; Director, City of Rialto Economic Redevelopment Agency (Invited)

**Genevieve Giuliano**, Vice Dean and Professor, School of Urban Planning & Development, University of Southern California

**David Godschalk**, Stephen Baxter Professor of City & Regional Planning, University of North Carolina at Chapel Hill

**William Knox**, Human Resources Compliance Manager, United Parcel Service, San Ramon, CA (Invited)

**Gary Schoennauer**, Planning Consultant, The Schoennauer Company and Former Planning Director, City of San Jose

**Open Forum Discussion**

9:30 pm Informal Reception/Discussion

**Tuesday Morning, December 9**

7:30 am Breakfast

**DAY THREE THEME**

**Linking Economic Considerations to Transportation Policy and Finance**

9:00 am **Linking Finance to the Economic Benefits of Transportation Investments**

The complex structure of transportation system finance has evolved to respond to the concerns of a wide array of interests and places. The funding of transportation systems and projects, therefore, does not necessarily relate to the expected economic benefits from investments. This session explores why the economic benefits of transportation investments are often so poorly linked to the current system of transportation finance, and offers a series of “propositions” on how we might better connect the costs of the transportation system to its beneficiaries.

- **Who Pays? Who Benefits?: Reconciling Economics and Politics in Transportation Finance**

**Martin Wachs**, Director, University of California Transportation Center and Professor of City & Regional Planning and Civil & Environmental Engineering, UC Berkeley

**Commentators:**

**Federal Perspective:**

**Sam Zimmerman**, Special Assistant to the Director of Environment and Planning, Federal Highway Administration, Washington, D.C.

**State Perspective:**

**Andrew Poat**, Chief Deputy Director, California Department of Transportation

**Regional Perspective:**

**Lawrence Dahms**, Executive Director, Metropolitan Transportation Commission, Oakland

10:30 am Break

11:00 am **Linkages to Federal Legislative and Regulatory Activity: ISTEA Reauthorization and New Air Quality Standards**

The closing session links the symposium's discussions on transportation and the economy to current debates in federal transportation and air quality policy. In particular, it reviews key provisions and issues in the new or pending ISTEA legislation and new ambient air quality standards. How will the new (or pending) ISTEA legislation affect the transportation/land use/ air quality connection generally, and goods movement and international trade in particular? How can air quality improvement be achieved with large increases in goods movement? What effect will the new air standards have on mobile sources?

- **ISTEA**

**Cindy Burbank**, Chief of Legislation and Strategic Planning, Federal Highway Administration, Washington, D.C.

**Debra Gebhardt**, Professional Staff Member for Subcommittee on Surface Transportation, U.S. House Committee on Transportation & Infrastructure



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

- **Federal Air Quality Standards**

***Mary Nichols***, Executive Director of Environment Now and former Assistant Administrator for Air & Radiation, U.S. Environmental Protection Agency

**Moderated Discussion with Assembled Group**

12:30 pm      Concluding Lunch and Steering Committee Meeting

## APPENDIX B:

### SPEAKER BIOGRAPHIES

**Marlon Boarnet** is an Assistant Professor of Urban and Regional Planning at the University of California, Irvine and he is associated with UC Irvine's Institute of Transportation Studies. His research has included the link between transportation infrastructure and local economic performance, and the link between urban design and travel behavior. Dr. Boarnet has been published widely in transportation policy including articles in the *National Tax Journal*, *Journal of Regional Science*, *Journal of Planning Literature*, and a book project on the topic of highways and economic development. Dr. Boarnet has also co-authored a book under contract to Oxford University Press on urban design and transportation policy entitled Travel by Design.

**James Boyd** is the former Managing Director of International Consulting for CALSTART, a non-profit consortium of worldwide companies engaged in building an advanced technology transportation industry and markets. He also served as Executive Officer of the California Air Resources Board where he directed the development and implementation of the ARB's Low Emission Vehicle and Clean Fuels Programs which included the first Zero Emission Vehicle requirement that led to the development of today's electric vehicles. Previously, he served as Assistant Secretary of the California Health and Welfare Agency and as Deputy Director of the Department of Health. Mr. Boyd also served in a variety of management capacities in California's Departments of Water Resources and Finance. He is the recipient of numerous awards for his work in the prevention and control of air pollution. Mr. Boyd is currently Assistant Deputy Director for the California Department of Fish and Game.

**Cynthia Burbank** is Chief of the Legislation and Strategic Planning Division for the Federal Highway Administration (FHWA) in Washington, D.C. Her office has primary responsibility for reauthorization of the Federal-aid highway program, a \$20 billion annual program which was up for renewal on 10/01/97, and she oversees strategic planning and investment analysis for the FHWA. Previously, Ms. Burbank served as Staff Director for the National Transportation Policy Team, and has worked in varying positions at the Federal Aviation Administration, Urban Mass Transportation Administration, and Office of the Secretary of Transportation. Ms. Burbank was also twice a recipient of the US Department of Transportation Silver Medal.

**Tom Cackette** is Chief Deputy Executive Officer of the Air Resources Board (ARB) responsible for reducing emissions from mobile sources, enforcement, air quality monitoring, and research. Previously, Mr. Cackette worked for the US Environmental Protection Agency National Vehicle and Fuels Emission Laboratory.

**David Calkins** is an international consultant with extensive experience in air quality and transportation issues. He has coordinated the interactions of various levels of government agencies and private sector companies. He has managed environmental studies and conducted training with five United Nations agencies, and he has directed policy analysis and research studies for the US Congressional National Commission on Air Quality. Previously, Mr. Calkins was the Chief of the Air Planning Branch of the US Environmental Protection Agency, Region IX, where he managed the development of Federal Implementation Plan measures to regulate emissions from freight movement in the Los

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

Angeles region and worked closely with US DOT to implement the conformity program under the Federal CAA and ISTEA. Mr. Calkins provided direct assistance in writing and reviewing mobile source measures for Congressional staffs for the last three Clean Air Acts.

**Tim Carmichael** is the Policy Director for the Coalition for Clean Air, a non-profit environmental advocacy group dedicated to restoring clean, healthful air to all Southern California residents. He develops policy issue priorities, prepares written comments, and delivers testimony on behalf of the organization. He represents the Coalition at meetings, 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. Previously, Mr. Carmichael worked for an environmental consulting firm and as an independent consultant in educating the public and the media on a variety of environmental issues. Mr. Carmichael also worked in the aerospace industry for three years.

**Lawrence Dahms** is Executive Director of the Metropolitan Transportation Commission (MTC). He serves a nineteen member governing board that represents the nine counties and 100 cities of the San Francisco Bay Area. He also is the Chairman of the Board of Directors of the Eno Foundation for Transportation, Inc. and past Chairman of the Transportation Research Board (TRB) Executive Committee. Previously, Mr. Dahms held positions with the Army Corps of Engineers, California Legislative Analyst, BART, Arthur D. Little, Inc. and Caltrans. Mr. Dahms is also a member of the Board of Directors of the Intelligent Transportation Society of America and actively supports the work of the National Association of Regional Councils and the American Public Transit Association.

**Steven Erie** is an Associate Professor of Political Science at UC San Diego and is actively involved in Southern California policy concerning local governance and public finance, infrastructure, international trade, economic development, and minority empowerment. Currently, he is researching the state/local fiscal relationship for the Metro Forum Project as well as serving as a consultant to RAND on the Los Angeles charter reform study. Dr. Erie has authored numerous op/ed pieces for the *Los Angeles Times* and won two best book awards for his book, Rainbow's End: Irish Americans and the Dilemmas of Urban Machine Politics. Dr. Erie is currently completing a study of Los Angeles' water, power, harbor and airport agencies and their role in the region's explosive twentieth-century growth.

**Denise Fairchild** is President of the Community Development Technologies Center (CD Tech) at Los Angeles Trade Technical College, a community development training, applied research and technical assistance center dedicated to rebuilding livable and economically viable communities in the region. Previously, she served as the program director of the Los Angeles Local Initiatives Support Corporation where she developed innovative financing and capacity building programs for non-profit sponsored neighborhood revitalization efforts. Her other prior positions include associate and acting director of an international development program at the King Drew University in Los Angeles. Dr. Fairchild also currently chairs the Los Angeles Urban Consortium, a broad-based coalition working to turn around the retail environment in South Central Los Angeles, and serves on numerous community and professional boards.

**David Forkenbrock** is Director of the University of Iowa Public Policy Center and Professor of Urban and Regional Planning and Civil and Environmental Engineering. He is nationally

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

recognized for his work in transportation investment policy, and has researched extensively the relationship between highway investments and local and regional economic development. Professor Forkenbrock is co-author of Iowa's Economic Development Strategic Plan, which was mandated by the Legislature. He was also contracted by FHWA to design and carry out a process through which national business leaders were able to provide input into planning the National Highway System. Professor Forkenbrock is a member of three TRB economic and finance committees, serves on the editorial boards of seven journals, and chairs the oversight committee for the 1997 Federal Highway Cost Allocation Study. Recently, he won his university's annual award for faculty excellence.

**Joanne Freilich (Symposium Coordinator)** is Assistant Director of the Public Policy Program at UCLA Extension where she develops and implements conferences, seminars, and courses for policy leaders and professionals in the areas of land use, governance, transportation, economic development, environmental quality, mediation, and public infrastructure finance. 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. She is a trained urban planner.

**Paul Ganster** is Director of the Institute for Regional Studies of the Californias at San Diego State University. His efforts have been directed towards policy questions of the US-Mexican border region and of the US-Mexican relationship. His current research includes border environmental issues, transborder governance issues, and comparative border studies. Dr. Ganster is co-editor of the *Journal of Borderland Studies* and serves on a number of regional advisory boards for organizations dealing with the border region.

**Debra Gebhardt** is a Professional Staff Member for the Subcommittee on Surface Transportation of the U.S. House Committee on Transportation and Infrastructure. Prior to this position, she served on the Water Resources and Environment Subcommittee. She has been involved in various legislative initiatives, including the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), Clean Water Act reauthorization, the Water Resources Development Act of 1992, the Hazardous Materials Transportation Authorization Act of 1994, the National Highway System Designation Act of 1995, and the ICC Termination Act of 1995. Previously, Ms. Gebhardt served as executive assistant to Rep. James K. Coyne (R-PA) and as a legislative assistant to Rep. Guy V. Molinari (R-NY).

**David Gillen** is an Adjunct Professor of Civil Engineering and Research Economist, ITS at UC Berkeley as well as a Professor of Economics in the School of Business and Economics at Wilfrid Laurier University in Ontario, Canada. His primary interest is in issues dealing with infrastructure management and investment. His current research is investigating the integration of transportation infrastructure and the economy, efficient pricing of transportation infrastructure, and investment decision rules. Dr. Gillen has also published articles, reports, and books in the field of transportation economics, industrial organization and management economics.

**Genevieve Giuliano** is Professor and Vice Dean in the School of Urban Planning and Development at the University of Southern California. Her research interests include: relationships between land use and transportation; transportation policy evaluation; and impacts of information technology on transportation and travel behavior. Recent projects include impacts of changes in the organization of work on travel and location patterns; evaluation of new technology in public transit; and the determinants of growth of

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

employment subcenters. Results of her research have been published extensively, and she has presented numerous papers at conferences both within the US and abroad. Professor Giuliano is a faculty fellow of the Lincoln Institute of Land Policy, and a member of the Editorial Boards of *Urban Studies*, *Transportation Research*, and *Journal of Transport Statistics*. She has served on National Research Council committee projects, and is a member of several expert advisory panels.

**Clifford Gladstein** is Director of the Interstate Clean Transportation Corridor, a public-private partnership to accelerate the market penetration of clean, alternative fuels in the interstate movement of goods. He is also the President of Gladstein & Associates, a Los Angeles-based environmental affairs consulting firm specializing in the nexus of air quality, energy and transportation policy and market development for alternative fuel vehicles and advanced transportation technologies. Mr. Gladstein is a founder of the California Truck Working Group, an innovative ad hoc coalition of environmentalists, government agencies, and the trucking industry to develop flexible, cost effective measures to reduce emissions from heavy-duty trucks. He serves as a Program Specialist for the Department of Energy's Clean Cities Program, and is involved in a South Coast Air Quality Management District program to assist local governments with their efforts to expand their use of clean fuel vehicles. Mr. Gladstein is the immediate past president of the Coalition for Clean Air.

**David Godschalk** is Stephen Baxter Professor of Planning in the Department of City and Regional Planning at the University of North Carolina at Chapel Hill. His research interests focus on state and local growth management, hazard mitigation, dispute resolution, and geographic information systems. He has served as Chair of the Department, editor of the *Journal of the American Institute of Planners*, Planning Director of Gainesville, FL, and Vice President of a Tampa planning consulting firm. He has consulted in the US and abroad on land use and environmental planning, coastal management, dispute resolution, and growth management. Dr. Godschalk has also been a member of the governing boards of numerous planning associations and is a former Chapel Hill town council member.

**Paul Gottlieb** is Associate Director for The Center for Regional Economic Issues at the Weatherhead School of Management at Case Western Reserve University in Cleveland, OH. His research interests include amenities and economic development; high-tech firm location; neighborhood development; and spatial aspects of workforce development policy. Previously, he served for three years as Senior Research Associate with the New Jersey Office of State Planning, that state's growth management agency, focusing on the fiscal and environmental impacts of local sprawl. Dr. Gottlieb has published numerous academic papers and community reports on a variety of topics including a report entitled Local Infrastructure in Support of Global Trade.

**LeRoy Graymer (Symposium Coordinator)** is 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. Mr. 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. He recently completed a special research project for the California Policy Seminar on California political reform options.

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

**Carl Guardino** is President and CEO of the Santa Clara Valley Manufacturing Group, a public policy trade association representing 125 of the largest employers in Silicon Valley, which collectively provide 250,000 local jobs. He has led two successful countywide transportation sales tax initiatives, created the Housing Action Coalition to advocate for affordable housing with sound land use planning, and formed the Vehicle Buy-Back Coalition to purchase and permanently retire older, polluting vehicles from Bay Area roads.

**Mark Horton** is the Strategic Planning Manager in the Northwest Region for United Parcel Service, evaluating long term internal and external infrastructure issues. Previously, he was a Divisional Financial Controller and held numerous other positions with UPS involving system development and implementation in industrial engineering and operations.

**John Kasarda** is Kenan Distinguished Professor of Business Administration and the Director of the Frank Hawkins Kenan Institute of Private Enterprise at the University of North Carolina at Chapel Hill. He is the developer of the concept and senior advisor for the global air cargo-industrial complex in North Carolina known as the Global TransPark and is serving as advisor to the Global TransParks being developed in Thailand and the Philippines. He led the initiative to establish the Kenan Institute Asia, headquartered in Bangkok, Thailand, which fosters mutually beneficial business ties between the US and Southeast Asia. Dr. Kasarda has published numerous scholarly articles and books on economic development, aviation, and competitiveness issues and is frequently quoted in several major newspapers. Dr. Kasarda has also served as a consultant on national urban policy to the Carter, Reagan, Bush, and Clinton administrations.

**David Lewis** is President of Hickling Lewis Brod Inc. of Washington, DC and Ottawa Canada. He specializes in the appraisal and risk analysis of capital investments in the public sector, the private sector, and the public and private capital markets. Previously, he was Principal Economist with the US Congressional Budget Office, and Chief Economist for the Office of the Auditor General of Canada. Dr. Lewis is widely published in the academic and trade press and his book on the subject of the development and application of methods designed to facilitate the use of Cost-Benefit Analysis in situations of conflict and uncertainty is to be published by Avebury Press later this year.

**Mary Nichols** is the Executive Director for Environment Now, a private Southern California foundation whose mission is to provide strategic leadership and support for programs that will protect and restore the environment. Previously, she served as Assistant Administrator of the US Environmental Protection Agency for Air and Radiation in Washington, D.C. During this position, she was charged with implementing the massive Clean Air Act Amendments of 1990, as well as protecting Americans from the dangers of indoor pollution and nuclear waste. Under her leadership, her office launched a review that resulted in the first strengthening of the nation's air quality standards in over a decade. Prior to her position with EPA, Ms. Nichols was one of California's first environmental lawyers, initiating early test cases under the Federal Clean Air Act and California air quality laws while at the Center for Law in the Public Interest. Ms. Nichols also served as a senior staff attorney with the Natural Resources Defense Council.

**Margo Oge** is the Director of the Office of Mobile Sources in the Office of Air and Radiation for the US EPA in Washington, D.C. She has held various other positions with

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

the EPA including Director of the Office of Radiation and Indoor Air; Director of the Radon Division; Office of Radiation Programs; Deputy Division Director of the Economics and Technology Division under the Office of Toxic Substances; and Section Chief of the New Chemical Section under the Office of Toxic Substances. Previously, Ms. Oge served as Legislative Aide to Senator John Chafee of Rhode Island supporting various programs and bills relating to environmental issues.

**H. Pike Oliver** is Vice Chairman of INTERRA, a Newport Beach based strategic planning and project management company that has worked on land development projects in California, British Columbia, China, Malaysia and Papua New Guinea. He is also a principal of The Presidio Group, a San Francisco based real estate development and management company. Previously, he was Senior Vice President of Southwest Diversified, a land development and home building company. Mr. Pike also led the planning and entitlement processing of large master planned communities in Colorado and Northern California and worked at The Irvine Company where he ultimately became Senior Director of Business Planning. In addition, Mr. Pike worked for the California Governor's Office of Planning and Research; the California State Department of Finance; the City of New York; and Contra Costa County in the San Francisco Bay Area

**J. Gordon Palmer** is the Manager of Master Planning for the Port of Long Beach. His responsibilities include long range facilities and land use planning, economic and cargo forecasting, and port economic impact studies. He is also part of the team working on the Alameda Corridor transportation project. Mr. Palmer also serves as Chairman of the Economic Advisory Council to the California Chamber of Commerce, Vice President of the Los Angeles Chapter of the National Association of Business Economists, and as Vice Chairman of the Los Angeles Economic Roundtable.

**D. Elliot Parks** is Chairman of the Board of Directors of the San Diego Association of Governments (SANDAG) and a member of the SANDAG Executive Committee. He has served as Mayor and Councilmember of the City of Del Mar, as well as presided as the Chair of the City's Planning Commission. Dr. Parks is Chairman of the Board of the San Diego Regional Energy Resource Office, as well as President and CEO of Myelos Neurosciences, a bio-pharmaceutical company in San Diego. Previously, he was Director of the Johnson & Johnson Biotechnology Center, and held several research and administrative positions at Scripps Clinic and Research Foundation. Dr. Parks retains an adjunct position at The Scripps Research Institute.

**Richard Schoeneberg** is the Air Quality Analysis Team Leader with the Federal Highway Administration in Washington, D.C. He develops technical and policy guidance to comply with the requirements of the National Environmental Policy Act and the Clean Air Act as well as energy assessment. He is also involved in several research projects designed to improve understanding of transportation related air pollution and energy impacts. He serves on the Transportation Research Board (TRB) Air Quality Committee; The American Association of State Highway and Transportation Officials (AASHTO) Air Quality Subcommittee; and the Intelligent Transportation System (ITS) Environmental Committee.

**Gary Schoennauer** is Principal of The Schoennauer Company, a planning consulting firm in Northern California. Previously, he was Director of Planning, Building and Code Enforcement for the City of San Jose. During his tenure there, the City's policies for promoting urban sprawl changed into a nationally recognized positive model of compact sustainable development. Under his leadership, San Jose's 2020 General Plan combined

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

firm urban growth boundaries with equally firm commitments to higher intensity infill development and put all these policies into a General Plan Sustainable City Major Strategy. Mr. Schoennauer received the American Planning Association's 1997 National Planning Award for Distinguished Leadership as a Professional Planner.

**Mark Stehly** is Assistant Vice President of Environmental and Hazardous Materials for Burlington Northern Santa Fe Corporation.

**Alan Sweedler** is Director of the Center for Energy Studies at San Diego State University where he is also professor of physics. He is a specialist on energy use and its impact on air quality in the US-Mexico border region and has extensively published on the topic. For the past five years, Professor Sweedler has lead a group of US and Mexican researchers studying the energy sectors of San Diego and Baja California, fuel use patterns in the region and the air quality and transportation impacts of heavy duty truck traffic crossing from Mexico. He has served as a Congressional Science Fellow in the US Senate, and has been a consultant to the California Energy Commission, UNESCO and the private sector. He is currently the Vice-Chair of the San Diego Regional Energy Resource Office, a public-private partnership working in the area of alternative fuel vehicles and transportation infrastructure in the greater San Diego Region.

**Brian Taylor (Symposium Coordinator)** is an Assistant Professor of Urban Planning in the School of Public Policy and Social Research at UCLA, where 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 freeway finance and the linking of subsidies to public transit performance. Most recently, he has studied the social equity aspects of various public transit subsidy programs. His research has been published in the *Journal of the American Planning Association*, *Transportation Research Record*, and *Urban Studies*. Previously, he was a research associate with the UC Berkeley Institute of Transportation Studies doing strategic planning for the California Department of Transportation, and a transportation analyst for the San Francisco Bay Area Metropolitan Transportation Commission working on the organization and finance of public transit. Professor Taylor has also served as a consultant to numerous organizations.

**Martin Wachs** is Director of the University of California Transportation Center at UC Berkeley, where he is also Professor of City and Regional Planning and of Civil Engineering. Prior to joining UC Berkeley, he was a Professor of Urban Planning at UCLA for 25 years, and served three terms as head of the Urban Planning Program. Professor Wachs has written four books and over one hundred articles on transportation planning, transportation problems of the elderly, transit finance, transportation demand management, and ethics in planning. Professor Wachs has also conducted research evaluating regional ridesharing regulations of the South Coast Air Quality Management District and chaired a joint committee of the prestigious National Transportation Research Board and the National Research Council on congestion pricing for American transportation systems.

**Stephanie Williams** is Director of Environmental Affairs & Industry Research for the California Trucking Association (CTA), developing and communicating association policy on all environmental issues affecting trucking companies specializing in air, water and hazardous waste. She is responsible for staffing the Environmental Policy Committee, the Hazardous Waste Committee, and the Tank Truck Carriers Conference and sits on



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

numerous trucking working groups with environmental, government, and other industrial users. She is very involved in alternative fuels and is currently demonstrating a number of truck studies using liquid natural gas as a fuel for heavy-duty vehicles. Previously for CTA, Ms. Williams was a staff statistician and Manager of Research & Environmental Policy.

**Jay Winter** is Executive Secretary of the Steamship Association of Southern California directing legislative and issue efforts relating to maritime industry. He is also President and owner of International Association Services, Inc., an association management company which includes the Steamship Association of Southern California, the Foreign Trade Association of Southern California (of which he is also the Executive Secretary), the California-Taiwan Trade and Investment Council, the Los Angeles Philanthropic Foundation, and the Los Angeles Society of Financial Analysts. Previously, he held positions in the maritime industry including Vice President of Bulk Systems, Inc. where he directed marketing strategies and research for the proposed Long Beach International Coal Terminal.

**Samuel Zimmerman** is former Special Assistant to the Federal Highway Administration's Director of Environment and Planning. He was also Director of the Federal transit Administration's Office of Planning where he directed activities related to Federal transit planning and environmental policies, procedures and programs. He has consulted extensively overseas on transit and transportation planning and has worked in Athens, Manila, Pusan, South Korea, Sao Paolo, Brazil, and Mexico City on transit planning efforts. Throughout his career, he has specialized in travel demand forecasting, evaluation, and major investment planning. Currently, Mr. Zimmerman is Associate Vice President of Daniel, Mann, Johnson and Mendenhall in Arlington, VA, providing technical oversight for its transportation planning practice.

## APPENDIX C:

### PARTICIPANT ROSTER

Detrich Allen  
Air Quality Director  
LA Environmental Affairs Department  
Los Angeles, CA 90012

Michael Armstrong  
Senior Planner  
SCAG  
Los Angeles, CA

Richard Baldwin  
Air Pollution Control Officer  
Ventura County APCD  
Ventura, CA

John Barna  
Deputy Secretary for Transportation  
Business, Transportation & Housing  
Sacramento, CA

Ron Bates  
Councilmember  
City of Los Alamitos

Arthur Bauer  
Executive Director  
Californians for Better Transportation  
Sacramento, CA

Dan Beal  
Manager  
Technical Resource & Policy Development  
Auto Club of So Cal  
Costa Mesa, CA

Ruthanne Taylor Berger  
Director of Air Quality & Transportation  
Programs  
Western Riverside Council of Governments  
Riverside, CA

**Marlon Boarnet (Speaker)**  
**Assistant Professor**  
**Dept. of Urban & Regional Planning**  
**School of Social Ecology**  
**University of CA, Irvine, Irvine, CA**

Bart Bohn  
Director, District 6  
CA Dept of Transportation  
Fresno, CA

Susan Bok  
Environmental Supervisor  
LA DOT  
Los Angeles, CA

**James Boyd (Speaker)**  
**Assistant Deputy Director**  
**CA State Dept. of Fish and Game**  
**Fair Oaks, CA**

David Brewer  
Deputy Director for Highways and Program  
CTC  
Sacramento, CA

Mark Brucker  
Environmental Protection Specialist  
US EPA Region IX  
San Francisco, CA

**Cindy Burbank (Speaker),**  
**Chief**  
**Legislation & Strategic Planning**  
**Federal Highway Administration**  
**Washington, DC**

**David Calkins (Speaker)**  
**International Air Quality and Transportation**  
**Consultant**  
**Orinda, CA**

**Tim Carmichael (Speaker)**  
**Policy Director**  
**Coalition for Clean Air**  
**Los Angeles, CA**

Susan Cornelison  
Rail Program Manager  
Riverside County Transportation Commission  
Riverside, CA

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

Marney Cox  
Special Services Director  
SANDAG  
San Diego, CA

**Lawrence Dahms (Speaker)**  
**Executive Director**  
**Metropolitan Transportation Commission**  
**Joseph P. Bort MetroCenter**  
**Oakland, CA**

Kyle Davis  
Technical Specialist  
Southern California Edison  
Rosemead, CA

Barry DeArmond  
Vice President  
Pacific Cartage & Warehousing, Inc.  
Union City, CA

Bart Doyle  
Councilman  
City of Sierra Madre  
Sierra Madre, CA

D. Gregg Doyle  
Graduate Student  
UCLA School of Public Policy and Social  
Research  
Los Angeles, CA

Dean Dunphy  
Secretary  
CA Business, Transportation, and Housing  
Agency  
Sacramento, CA

Kate Edwards  
Program Representative  
UCLA Extension Public Policy  
Los Angeles, CA

**Genevieve Giuliano (Speaker)**

**Steven Erie (Speaker)**  
**Associate Professor**  
**Dept. of Political Science**  
**University of California, San Diego**  
**La Jolla, CA**

**Denise Fairchild (Speaker)**  
**President**  
**Community Development Technologies**  
**Center**  
**Los Angeles, CA**

**David Forkenbrock (Speaker)**  
**Director & Professor**  
**Public Policy Center**  
**Dept. of Urban & Regional Planning**  
**and Civil & Environmental Engineering**  
**University of Iowa**  
**Iowa City, IA**

**Joanne Freilich (Symposium Coordinator)**  
**Assistant Director**  
**UCLA Extension Public Policy Program**  
**Los Angeles, CA**

**Paul Ganster (Speaker)**  
**Director**  
**Institute for Regional Studies of**  
**Californias**  
**San Diego State University**  
**San Diego, CA**

Robert Garcia  
Senior Attorney  
Environmental Defense Fund  
Los Angeles, CA

**Debra Gebhardt (Speaker)**  
**Professional Staff Member**  
**Subcommittee on Surface Transportation**  
**US House of Representatives**  
**Washington, DC**

**David Gillen (Speaker)**  
**Adjunct Professor**  
**Civil and Environmental Engineering and**  
**Research Economist, ITS**  
**University of Berkeley, CA**  
**Berkeley, CA**

**LeRoy Graymer (Symposium Coordinator)**

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

**Vice Dean and Professor**  
**School of Urban Planning and Development**  
**University of Southern California**  
**Los Angeles, CA**

**Clifford Gladstein (Speaker)**  
**Director**  
**Interstate Clean Transportation Corridor**  
**Los Angeles, CA**

Madelyn Glickfeld  
Senior Research Associate & Coordinator  
UCLA Public Policy Program  
Malibu, CA

John Glover  
Director, Strategic and Master Planning  
Port of Oakland  
Oakland, CA

**David Godschalk (Speaker)**  
**Stephen Baxter Professor**  
**Dept of City and Regional Planning**  
**University of North Carolina**  
**Chapel Hill, NC**

Carol Gomez  
Corporate SHEA Manager  
Hughes Electronics  
Los Angeles, CA

Barbara Goodwin  
Executive Director  
Council of Fresno County Governments  
Fresno, CA

**Paul Gottlieb (Speaker)**  
**Associate Director**  
**The Center for Regional Economic Issues**  
**Case Western Reserve University**  
**Weatherhead School of Management**  
**Cleveland, OH**

John Graham  
Chief of Airport Planning, LAX Master Plan  
Los Angeles World Airports  
Los Angeles, CA

Elaine Joost  
Deputy Associate Administrator  
Office of Research, Policy and Analysis  
US Dept of Transportation RSPA  
Washington, DC

**Director**  
**UCLA Extension**  
**Public Policy Program**  
**Los Angeles, CA**

**Carl Guardino (Speaker)**  
**President**  
**Santa Clara Valley Manufacturing Group**  
**Santa Clara, CA**

John Hall  
Environmental Protection Specialist  
US EPA  
Ann Arbor, MI

Daniel Baldwin Hess  
Graduate Student  
UCLA School of Public Policy and Social  
Research  
Los Angeles, CA

Peter Hess  
Deputy Air Pollution Control Officer  
BAAQMD  
San Francisco, CA

**Mark Horton (Speaker)**  
**Strategic Planning**  
**United Parcel Service**  
**San Ramon, CA**

Linda Howe  
Manager, Technology Transfer  
UC Berkeley ITS  
Richmond, CA

Lee Hultgren  
Director of Transportation  
SANDAG  
San Diego, CA

Brigid Hynes-Cherin  
President  
BHC Transportation  
San Francisco, CA

Jonathan Levine  
Assistant Professor  
Urban & Regional Planning  
University of Michigan  
Ann Arbor, MI

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

**John Kasarda (Speaker)**  
**Kenan Distinguished Professor and Director**  
**The Frank Hawkins Kenan Institute of**  
**Private Enterprise.**  
**University of North Carolina**  
**Chapel Hill, NC**

Paul Kerkhoven  
Director, Environmental Affairs  
American Highway Users Alliance  
Washington, DC

Keith Killough  
Deputy Executive Officer, Countywide  
Planning  
LACMTA  
Los Angeles, CA

Doug Kimsey  
Planner/Analyst  
Metropolitan Transportation Commission  
Oakland, CA

Norm King  
Executive Director  
SANBAG  
San Bernardino, CA

William Knox  
Human Resources Compliance Manager  
United Parcel Service  
San Ramon, CA

Leondra Kruger  
Program Manager  
The Greenlining Institute  
San Francisco, CA

Dwight Ku  
Legislative Counsel, Govt Relations  
California State Auto Assn.  
Sacramento, CA

**Mary Nichols (Speaker)**  
**Executive Director**  
**Environment NOW**  
**Malibu, CA**

Jay Norvell  
Central Region Division Chief, Planning  
CA Dept of Transportation  
Fresno, CA

**David Lewis (Speaker)**  
**President and CEO**  
**Hickling Lewis Brod Inc.**  
**Silver Spring, MD**

Paul Lewis  
Research Fellow  
Public Policy Institute of CA  
San Francisco, CA

Kirk Marckwald  
Principal  
CA Environmental Associates  
San Francisco, CA

James Watt McCormick  
President  
James McCormick & Co.  
Pacific Palisades, CA

Robert McCleary  
Executive Director  
Contra Costa County Transportation Authority  
Walnut Creek, CA

Barton Meays  
Executive Director  
San Joaquin Council of Governments  
Stockton, CA

Supervisor Jon Mikels  
Governing Board Member  
SCAQMD  
Diamond Bar, CA

John Mirau  
President  
Inland Action  
San Bernardino, CA

**Honorable D. Elliot Parks (Speaker)**  
**Mayor of Del Mar**  
**Chair, SANDAG**  
**City of Del Mar**  
**Del Mar, CA**

**Andrew Poat (Speaker)**  
**Chief Deputy Director**  
**CA Dept of Transportation**  
**Sacramento, CA**

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

**Margo Oge (Speaker)**  
**Director**  
**Office of Mobile Sources**  
**US EPA**  
**Washington, DC**

Durand Rall  
General Manager  
Omnitrans  
San Bernadino, CA

Peter Okurowski  
Senior Associate  
California Environmental Associates  
San Francisco, CA

Jack Reagan  
Executive Director  
RCTC  
Riverside, CA

Charles Oldham  
Deputy Director for Policy & Legislation  
California Transportation Commission  
Sacramento, CA

Michael Replogle  
Federal Transportation Director  
Environmental Defense Fund  
Washington DC

**H. Pike Oliver (Speaker)**  
**Vice Chairman**  
**Interra Corporation**  
**Newport Beach, CA**

Michael Ruane  
Assistant CEO  
County of Orange  
Santa Ana, CA

Robert O'Loughlin  
Air Quality Specialist  
FHWA, Region IX  
San Francisco, CA

Kenneth Ryan  
Transportation Issues Chair  
Sierra Club California  
Union City, CA

James Ortner  
Manager, Alternative Fuels  
and Air Quality Programs  
OCTA  
Orange, CA

Robert Schaevitz  
Consultant  
Decision Economics  
Sacramento, CA

**Gordon Palmer (Speaker)**  
**Manager of Master Planning**  
**The Port of Long Beach**  
**Long Beach, CA**

Steve Schnaidt  
Principal Consultant  
CA Senate Transportation Committee  
Sacramento, CA

Richard Schoeneberg  
Technical Air Quality Team Leader  
Federal Highway Administration  
Washington, DC

Brian Taylor  
Assistant Professor  
UCLA School of Public Policy & Social  
Research.  
Los Angeles, CA

Gary Schoennauer  
Planning Consultant  
The Schoennauer Company  
San Jose, CA

Colleen Tessema  
Technical Specialist  
So Cal Edison  
Rosemead, CA

Donald Shoup  
Professor  
School of Public Policy & Social Research  
Los Angeles, CA

Doug Thompson  
Staff Air Pollution Specialist  
California Air Resources Board  
Sacramento, CA

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

Ron Smith  
Manager  
Long Range Planning / Program  
LACMTA  
Los Angeles, CA

Joan Sollenberger  
Program Manager  
CA Dept of Transportation  
Sacramento, CA

Mark Stehly  
Assistant Vice President  
Environmental & Hazardous Materials.  
Burlington Northern Santa Fe Corporation  
Operations Building  
Fort Worth, TX

Karen Stillman  
Program Representative  
UCLA Extension  
Public Policy Program  
Los Angeles, CA

Alan Sweedler  
Director, Center for Energy Studies  
Department of Physics  
San Diego State University  
San Diego, CA

**Stephanie Williams (Speaker)**  
**Director**  
**Environmental Affairs and Industry**  
**Research**  
**CA Trucking Association**  
**W. Sacramento, CA**

Supervisor Roy Wilson  
County Supervisor  
County of Riverside  
Riverside, CA

Mark Winogron  
Community Development Director  
City of Culver City  
Culver City, CA

Renzo Venturo  
Corporate SHEA Director  
Hughes Electronics  
Los Angeles, CA

**Martin Wachs (Speaker)**  
**Director**  
**University of CA Transportation Center**  
**University of CA, Berkeley**

Catherine Wasikowski  
Director of Transportation Programs  
South Coast AQMD  
Diamond Bar, CA

Mel Webber  
Professor Emeritus of Planning  
University of California  
Berkeley, CA

Helen Williams  
Program Representative  
UCLA Extension Public Policy Program  
Los Angeles, CA

**Jay Winter (Speaker)**  
**Executive Secretary**  
**Steamship Assoc. of Southern CA**  
**Los Angeles, CA**

Cameron Yee  
Transportation Analyst  
Urban Habitat Program  
Presidio Station  
San Francisco, CA

Richard Zbur  
Attorney  
Latham & Watkins  
Los Angeles, CA

**Sam Zimmerman (Speaker)**  
**Associate Vice President**  
**Daniel, Mann, Johnson & Mendenhall**  
**Arlington, VA**

## **APPENDIX D:**

### **SYMPOSIUM COSPONSORS**

*We acknowledge the following organizations for the financial support they contributed to this symposium, and also for their participation in its planning:*

**Automobile Club of Southern California**

**Bay Area Air Quality Management District**

**California Department of Transportation**

**Federal Highway Administration**

**Hughes Electronics**

**Latham & Watkins**

**Los Angeles Metropolitan Transportation Authority**

**Metropolitan Transportation Commission**

**Orange County Transportation Authority**

**Pacific Enterprises / Southern California Gas Company**

**Riverside County Transportation Commission**

**San Bernardino Associated Governments**

**San Diego Association of Governments**

**South Coast Air Quality Management District**

**Southern California Association of Governments**

**Southern California Edison Company**

**U.S. Environmental Protection Agency**

**University of California Transportation Center**

*Other organizations participating in the planning of the program were:*

***California Air Resources Board; California Transportation Commission; Coalition for Clean Air; Natural Resources Defense Council; Union for Concerned Scientists; and UCLA School of Public Policy and Social Research***