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

Financing the Future

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SUMMARY OF PROCEEDINGS

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

Foreword

This report is a summary of proceedings from a major symposium convened by the UCLA Extension Public Policy Program in October 1998 which examined relationships between transportation finance, future growth and development, travel behavior, and environmental quality.

The symposium was the eighth 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. The 1999 topic was a departure from prior symposia in that it introduced the economy as a "fourth prong" in the transportation, land use and air quality connection, focusing on the way our national, state, and local economies affect transportation needs, air quality impacts, and land use patterns.

This year's topic took the economic theme as a springboard for examining the continued growth and economic change expected into the 21st century. To cope with these changes, how do we pay for the future development and operation of the transportation system? How does the system of finance we use affect travel choices, land development and air quality? These are the principal questions addressed at the symposium, along with equity issues and the political feasibility of various funding options.

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, land use, and air quality problems while also recognizing the importance of the economy.

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

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I. OVERVIEW

Financing the Future was the topic of the 1998 UCLA Lake Arrowhead Transportation/Land Use/Air Quality Connection symposium. Convened annually by the UCLA Extension Public Policy 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 October 25-27, 1998.

As during previous Lake Arrowhead symposia, academic and research experts shared research 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 the future of transportation finance, including assessment of political, social, institutional, and environmental issues. The presentations and discussions from the 1998 meeting are summarized in this report.

The program consisted of nine sessions:

1. Forecasting the Future: Growth, Change, and the Transportation/Land Use Connection
2. Planning the 21st Century: Challenges to Transportation Finance at the Regional Level
3. The Future of Transportation Finance
4. Putting Innovative Transportation Pricing into Practice: New Techniques, New Approaches
5. Developing More Effective Links between Transportation Finance and Air Quality Improvements
6. Heavy Vehicles, Road Wear, and User Fees
7. My Fair Share: Equity and the Transportation/Land Use/Air Quality Connection
8. How Will It Play in Peoria? (or Monrovia? Or Milpitas?): What Do Voters Want and What Are They Willing to Pay For?
9. Financing the Future: Setting an Agenda for the Next Decade

Over the course of the symposium, several themes emerged. First, conference participants agreed that the combination of population growth and changes in the demographic characteristics of the population necessitate a rethinking of traditional approaches to transportation policy. These socio-demographic changes have especially important implications for public transit. Transportation policymakers have tried to make transit an attractive alternative to automobile use in the hope of boosting transit ridership among all segments of the population. Data indicate, however, that automobile use continues to increase among all segments of the population, and that transit is increasingly becoming the refuge of the transit-dependent. This finding suggests that transit agencies might consider concentrating their focus on better serving children, the elderly, and others who lack access to an automobile.

Second, conference participants recognized that transportation finance mechanisms can both raise revenue and modify travel behavior. There was strong agreement that political feasibility and revenue generating ability should be key criteria in selecting a transportation finance instrument. There was less agreement about using the finance instrument as a

means of modifying travel behavior. Some participants feared that proposing to do so would be seen as social engineering.

Third, conference participants agreed that the trend in transportation finance policy has been away from user-based taxes to more general taxes. Many politicians favor this shift in policy because they see transportation as a public good that should be financed from general revenues. They also argue that voters in different cities and counties define their area's transportation needs in different ways and that a local sales tax gives voters greater control over how needs are defined and the revenues are used.

Despite these trends, most participants called for a return to a user-based finance system. They did so for three reasons: 1) the fairness of charging those who use the system with the cost of maintaining it, 2) the opportunity to use new technology to charge users for the *actual* costs they impose on the system, and 3) the ability to use the fees to reduce system needs by modifying travel behavior. Traditional finance mechanisms such as gasoline taxes, tolls, and vehicle license fees charge for use in only a very general way. In recent years, however, technology has allowed user fees to become smarter. Value pricing, truck weight-mile taxes, and vehicle mileage fees can be structured so as to charge motorists for the actual financial burden they impose on specific facilities at different times of day.

Fourth, there was fundamental disagreement on how much, if any, additional revenue was required to meet transportation needs. Some participants argued that additional revenue was required because the purchasing power of the gas tax and other instruments have deteriorated in the face of inflation and increasing vehicle fuel efficiency. Others countered that there is no reason to maintain revenues at their historic highs because the focus has shifted from large-scale new highway construction to maintenance and minor improvements. Further, they argued that a well-designed finance mechanism could improve system efficiency and lessen the need for major new facilities.

Fifth, conference participants recognized that any changes to the transportation finance system will be politically difficult. Given the lack of consensus on the need for more revenues for transportation, it may be necessary to sell the public directly on the desirability of these new finance mechanisms. Some alternatives, such as VMT fees, full cost road pricing and pay-at-the pump insurance probably have low political feasibility at present. Local sales taxes, general obligation bonds and impact fees seem to have greater political viability. The most politically feasible instruments are, however, the least desirable on policy grounds in reducing automobile use. An intermediate range of options, including gas tax indexing and the use of value pricing to finance capacity expansion, may offer a more balanced, politically-feasible and policy-desirable approach.

Finally, the important linkages between transportation (finance), land use, and air quality were a constant underlying theme of the conference. The direct links between the structure of the transportation finance system, travel behavior, and air quality were evident in a number of the presentations. Several participants called for the adoption of transportation finance instruments which might impact land use patterns and air quality by directly

pricing vehicle travel and/or vehicle emissions, although there was a great deal of skepticism as to the political feasibility of such approaches.

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 nine sessions of the symposium. Part III contains a roster of participants, and a list of the symposium so-sponsors and cooperating organizations.

II. SYMPOSIUM PROCEEDINGS

FINANCING THE FUTURE: SYMPOSIUM OVERVIEW

Leroy Graymer, Founding Director, UCLA Extension Public Policy Program
Joanne Freilich, Acting Program Head, UCLA Extension Public Policy Program
Brian D. Taylor, Assistant Professor of Urban Planning, University of California, Los Angeles

This year's Lake Arrowhead symposium was dedicated to Renzo Venturo, a longtime executive with Hughes Aircraft, who passed away in June. Joanne Freilich opened the symposium by recognizing Mr. Venturo's important contributions to the environmental, air quality and transportation fields in California and his longtime support of the Lake Arrowhead Transportation, Land Use, Air Quality Connection symposium series. She reminded the participants of Mr. Venturo's unique ability to make connections between people and ideas, his goodwill and his thirst for knowledge. He will be greatly missed.

Leroy Graymer introduced this year's symposium theme "Financing the Future." He began by identifying four criteria for evaluating public policies:

> **Effectiveness**: Does the policy produce the desired result?
> **Efficiency**: Does the policy produce the most outcome for the least input?
> **Equity**: Is the policy regressive or progressive? Who receives the benefits? and Who pays the costs?
> **Efficacy**: Is the policy politically acceptable? Can it be implemented?

Throughout the symposium presentations, speakers and audience participants relied on these fundamental concepts to assess the various proposals for financing the future of transportation.

Brian Taylor's opening remarks stressed that this year's conference was not designed to focus on transportation finance in the conventional sense nor was it intended as an overview of the recently passed Transportation Efficiency Act for the 21st Century (TEA-21) transportation financing programs. Instead, the conference was organized around three sets of connections, between:

> The transportation finance system and urban form;
> The price of transportation and air quality; and
> The price of transportation and transportation supply and travel demand.

Recognizing and understanding these connections is critical because the structure of the transportation finance system, and the particular finance instruments used, affect travel choices, patterns of urban development, and air quality. How we pay for transportation investments can alter decisions on how, when, where, and whether to travel. Policy makers have often failed to consider these connections when they devise transportation finance policies, focusing more on the details of the program itself than on how the program

affects transportation needs. This failure is evident in the increasing shift away from user-based transportation finance mechanisms that reflect demand for transportation facilities, to non-user-based instruments, such as county sales taxes, that are not linked to the consumption of transportation services. Some see this shift as representing a trend toward more direct democracy, but it is also a move away from efforts to link transportation finance to the costs imposed by travel on society.

Professor Taylor sees two possible futures for transportation finance. In one scenario, the finance system will become disintegrated, moving further toward one based on individual projects, or lists of projects, that are financed through mechanisms unrelated either to the costs imposed or to system use. In the second, the finance system will become more integrated, and more flexibly responsive, where transportation demand will be mediated by price. This second scenario is viewed as more desirable, especially on efficiency grounds, although putting its principles into practice is extremely difficult in today's political environment.

Professor Taylor concluded with a brief overview of the topics of the different sessions. Each day's sessions are organized around a theme. Sunday's sessions are devoted to growth trends and examine the implications of economic and demographic change for the future of transportation finance. The first session documents the ethnic and racial changes taking place in urban areas and their implications for transportation needs and urban development. The second session is a roundtable discussion of challenges to transportation finance at the regional level. The evening session's speaker examines the strengths and weaknesses of the present transportation finance system and opportunities and constraints to restructuring it.

Monday's four sessions center on the costs and benefits of linking transportation finance to 1) traffic congestion, 2) air quality, and 3) highway maintenance, and the equity consequences of both maintaining the current finance system and implementing possible changes to the system. These sessions explore the possibility that the means we use to finance the transportation system might help us to better address these critical problems.

Tuesday's sessions shift the focus more specifically to the political realm, to issues of political feasibility and adaptability, asking: What do voters want and how are they willing to pay for it? The increasing shift away from user fee-based transportation finance mechanisms to more politically popular non-user mechanisms such as sales taxes and bonds became a recurring theme throughout the different sessions.

DAY ONE THEME:
Planning for Social and Economic Change

SESSION 1: FORECASTING THE FUTURE: GROWTH, CHANGE, AND THE TRANSPORTATION/LAND USE CONNECTION

Moderator: **Brian Taylor**
Reid Ewing, Consulting Principal, LDR International, Columbia, Maryland
Dowell Myers, Associate Professor, School of Policy, Planning & Development, University of Southern California
Sandra Rosenbloom, Professor of Planning and Director of the Drachman Institute for Land & Regional Development Studies, University of Arizona

The next decade is projected to bring accelerated population growth and demographic change along with continued metropolitan expansion leading to dramatic changes in travel behavior. The first session's presentations considered two issues related to these trends: 1) the roles of land use and transportation policy in shaping urban development; and 2) the implications of social and demographic change for the future of the transportation system. The presenters each noted that social and demographic changes pose serious challenges for transportation that have yet to be fully understood or addressed by transportation policymakers.

Reid Ewing's presentation discussed the impacts of land use and transportation policy on urban development. Dr. Ewing argued that while transportation policy does shape urban growth and development, its effects are nuanced, varied, and place-specific. To illustrate this point, he considered the impacts of five different types of transportation and land use policies frequently discussed in the scholarly literature: highway investment, transit investment, zoning, growth controls, and growth management.

Highway investment policies can lead to increased land values but even large-scale highway projects have only a marginal impact on suburbanization and downtown decline because the impacts of any single road project are diffused throughout a region, though increasing capacity tends to increase the amount of travel over the long run and contributes to a more dispersed urban pattern.

Transit investments tend to have very minimal impact on land use. Heavy rail investment intensifies development only in situations where there are supporting land use policies in place and there is economic demand for intensified development. Where there are land use impacts, they tend to be fairly localized. Light rail investment leads to even smaller land use impacts, although a study of light rail investment in Portland revealed some development impacts at the ends of the line and along the rail corridor. Commuter rail investment has even less land use impact than light rail.

Zoning can have an impact on development patterns. Zoning land for more intensive use increases market values while zoning land for lower density tends to depress land values, even at substantial distances from the urban center. Single use zoning has traditionally limited more flexible, mixed-use development but this situation is changing.

Growth controls tend to raise land and housing prices, although the size of the increases depends on the availability of close substitutes.

Growth management policies have had mixed results. In San Jose, California, there has been both an increase in housing prices and the size of housing units as well as more in-fill development. In Portland, Oregon, a strong growth management policy has led to higher densities and higher land prices within the area encompassed by the growth boundary. In Sacramento, California, the growth boundary has been moved frequently and there has been little land use effect.

The second part of Dr. Ewing's presentation offered the results of a case study of Florida's statewide growth management program. The Florida growth management program dates to 1972 but has been revised several times since its inception. In 1985, the state imposed a concurrency requirement mandating that adequate public facility capacity must be provided with new development. As part of this requirement, minimum roadway level-of-service (LOS) standards were adopted, with the unintended effect of limiting downtown development and redirecting development to outlying areas where excess road capacity exists. Thus, a growth management policy intended to curb sprawl has actually encouraged it. The state has attempted to counter this by limiting the number of highway lanes, relaxing LOS standards and by establishing Transportation Concurrency Exception Areas within which local governments may exempt all local roads (other than interstate highways) from meeting the state's LOS requirements. The state has also officially charged local governments with devising regulatory and pricing policies to discourage sprawl. The evaluation of the state growth management policy's effects is ongoing and a committee has recently been established to recommend possible changes in state land use and transportation policy to improve coordination between them.

The transportation implications of social and demographic change were the topics of the next two presentations. Dowell Myers focused his discussion on the extraordinary changes occurring in California. By 2020, California is expected to add another 15 million people. There will also be dramatic changes in the racial and ethnic makeup of the population. Latinos will account for nearly three-fourths of the population growth, a consequence both of immigration and natural increase. Significant increases in the Asian-American population are also expected. These changing ethnic and racial patterns have particular significance for public transit. Research on the travel patterns of different demographic groups indicates that public transit use is highest among immigrants, females, and African Americans. Latinos also tend to ride public transit frequently, and in large numbers. As a large percentage of the increase in the state's population will be made up of groups that are

frequent riders of public transit, it would appear that there will continue to be a strong demand for public transit.

Recent immigrants made up 42% of all transit riders in 1990. Professor Myers' data also reveal, however, that public transit use is falling among immigrants, who are beginning to catch up to other groups in terms of single occupant vehicle (SOV) use. While immigrants tend to be frequent transit riders when they arrive, over time they shift away from using public transit. Were immigration rates to slacken, or to be curtailed legislatively, there could be a devastating impact on public transit ridership. The challenge for transportation policymakers is to plan with these changes in mind.

Sandra Rosenbloom's presentation focused on global changes in the structure and composition of the workforce and households and the meaning of these changes for transportation policy. Professor Rosenbloom stressed the increasing importance of service sector employment in the economy and the associated rise in more flexible work arrangements. In the last ten years, there has been only a 2 percent growth in production jobs but a 73 percent growth in service jobs. Over 70 percent of these service jobs are in short-term, low-pay occupations employing mainly racial and ethnic minorities. Overall, there has been tremendous growth in temporary employment, part-time employment, and in the number of people who work multiple jobs. Developments in communication and transportation have further complicated the picture by allowing greater flexibility in the geographic location of work sites leading to further suburbanization and globalization of employment. As a consequence, housing choice is less dependent on job location, and more households have multiple wage earners.

Professor Rosenbloom stressed that these workforce changes, work site locational shifts, and the continuing trend toward smaller household size and more female-headed households, have significant implications for transportation. One implication is that there will be greater variability in travel schedules: more travel trips will be made per household, and that many of these will be linked trips. There will also be a growing number of "serve-passenger" trips, such as driving children to after school activities. These are significant, especially for women, who often have both workplace and household responsibilities, although men will also be affected. These changes portend increases in the number of vehicle miles traveled, increases in non-traditional travel peaking, increases in automobile use, and decreases in public transit usage. Empirical data from the U.S., Australia, and Germany confirm these trends. Professor Rosenbloom is uncertain whether we will be able to counteract them.

DISCUSSION

The subsequent discussion centered largely on the implications of social and demographic change for public transit. Professor Rosenbloom advised public transit agencies to stop focusing on wage earners and SOV work trips and to instead concentrate on better serving children, the elderly, and other segments of the population who rely on public transit for their mobility needs. She also noted that mixed land use policies may work better for some groups than others. Dr. Ewing added that new housing models may appeal more to

immigrants and noted the importance of mixing and clustering as complementary to flexible transit alternatives.

Audience members also raised several questions about the importance of income and age in the data presented on travel demographics. The consensus among the panelists was that changes in travel patterns by age groups were subtle but that rising incomes were leading to less transit ridership. Income was, however, less important for immigrants compared to native-born residents, particularly in the first ten years after arrival, as they tended to maintain preexisting transit riding habits. Professor Rosenbloom noted that these differences often have a gender component. A question from one audience member about how to pay for transportation services for seniors prompted Professor Rosenbloom to discuss an innovative policy used in Portland, Maine. This strategy is a form of transportation insurance, offered by insurance agencies, that allows people to pay ahead of time for their future transportation needs.

The discussion also touched on the impact of transportation policy on urban form. Dr. Ewing was asked whether the clustering of commercial development near the Bay Area Rapid Transit (BART) rail stations in places like Walnut Creek and Pleasant Hill, California, was desirable given that most of those who work in these centers are single occupant vehicle drivers. He replied that the multi-center development pattern is better for transit and for growth management although he recognized that concerns over congestion and other potential negative impacts on adjacent neighborhoods are legitimate.

SESSION 2: PLANNING THE 21ST CENTURY: CHALLENGES TO TRANSPORTATION FINANCE AT THE REGIONAL LEVEL

Moderator: **Joanne Freilich**
The Honorable Ron Bates, Vice President, Southern California Association of Governments; and Mayor, City of Los Alamitos
Joanne Koegel, Acting Executive Director, Sacramento Area Council of Governments
Suzanne Sale, Chief Financial Officer, Arizona Department of Transportation
Kenneth Sulzer, Executive Director, San Diego Association of Governments
Kurt Weinrich, Director, Clark County Regional Transportation Commission

The second session examined transportation finance strategies being employed in different regions of the southwestern United States. Moderator Joanne Freilich began the session by raising a general question for the audience's consideration: Is transportation finance simply an issue of raising more revenue, or is it also a matter of better managing demand? The presenters then discussed the particular transportation finance approaches being employed in Southern California, Arizona, San Diego, Las Vegas, and Sacramento.

Ron Bates noted that by 2020, the population of Southern California will increase 46 percent while employment will increase 61 percent. In the face of these increases, he stressed that the demand for all modes of travel will likely increase. At least $54 billion will be needed over the next twenty years to improve the transportation infrastructure to meet the increased demand. At the same time, traditional revenue sources such as the gas

tax and sales taxes are unlikely to provide enough revenue to meet these needs, because of both the increasing use of alternative fuels and the sunset of many county sales taxes. This has prompted the Southern California Association of Governments (SCAG) to consider the potential application of alternative transportation finance options, such as public-private partnerships and the use of "value pricing." Mr. Bates sees some potential for the further introduction of user charges in transportation, as we cannot rely exclusively on traditional revenue sources. He also believes, however, that we are likely to see greater use of bonds tied to specific projects because the voters can see the results of their tax investment. He closed by recognizing that while the trend is to look locally for finance solutions, there must also be regional-level approaches to transportation finance policy.

Suzanne Sale observed that, like California, Arizona is facing tremendous growth in jobs and population at a time when traditional finance mechanisms are becoming less able to bear the entire transportation finance burden. The state will need to spend $9 billion over the next twenty years to improve its roads. Like other states, though, Arizona is seeing a diversion of transportation revenues to non-transportation uses, despite increasing maintenance needs and air quality problems. In addition, nearly 70% of the state's land is federally-owned and non-revenue generating. Tax increases are politically unpopular and alternatives such as private toll facilities are not yet financially practical. The widening gap between revenues and needs has led Arizona to look to two innovative finance strategies: state infrastructure banks, and grant anticipation notes. State infrastructure banks use a revolving fund concept to build up capital over time by investing the bank's balances and through interest on loans. The program gives states flexibility in project selection and management. The concept was introduced in the Intermodal Surface Transportation Efficiency Act (ISTEA) and Arizona became a pilot program state in 1996. Arizona has used its state infrastructure bank to provide loans for construction of the regional freeway system in Maricopa County. The success of this effort led to greater legislative support of the program and the dedication of $200 million in general revenue funds to provide additional capital for the bank. Grant anticipation notes, on the other hand, allow states to leverage future federal dollars by issuing notes that pay federal project cost shares in advance. Ms. Sale stressed that the successful use of these new strategies depends on integrating them with the transportation program and developing broad constituent support through the education of important stakeholders.

Ken Sulzer explored the transportation finance situation in San Diego. Mr. Sulzer stressed that despite tremendous employment and population growth in recent years, the average San Diegan's commute has increased by only three minutes since 1975; residents have adapted by moving closer to work, and employers have adapted by decentralizing their work sites, though providing affordable housing has become a problem. Mr. Sulzer stated that in the future, San Diego needs to identify changes in driving and travel habits to make smart transportation investments given the political and environmental difficulty of building new capacity. He believes we will invest more in the system-side of transportation, on new technology such as collision-avoidance systems that can potentially increase effective roadway capacity threefold. He recognizes that demand management strategies will also be important. Travel pricing, similar to the FasTrak™ facility on Interstate 15 (discussed in Session 4), could play a major role in demand management, as

can carpools and vanpools. Mr. Sulzer ended by noting that, at the present, there is strong support for investment in new technology but less support for demand management strategies.

Kurt Weinrich discussed the growth-related challenges facing the Las Vegas region, and the difficulties in implementing pricing mechanisms to cover the revenue gaps left by traditional means of financing infrastructure investment. Like Arizona, Nevada faces a specific challenge in regard to alternative financing since 87 percent of all land in Nevada is federal land not subject to property tax assessment. Recently, a statewide debate over the issue of growth has arisen, particularly over who will pay for necessary infrastructure improvements. Current residents strongly resist paying higher taxes for new infrastructure that they believe will predominantly serve future residents, and many people are demanding that the gaming industry pay higher taxes. The challenge for state and local officials is to balance these pressures while not stifling the region's economic future.

Joanne Koegel turned the discussion to the Sacramento region. The Sacramento region is a diverse one consisting of urbanized areas, rural areas, and farm areas. That diversity has forestalled any regional consensus on transportation finance policy. Yet, like many other regions, Sacramento faces a needs-revenues gap. To make up the shortfall, regional officials have so far relied on traditional finance mechanisms, such as a proposed one-cent per year increase in the gas tax, escalating over the duration of the regional transportation plan, to fund regional transportation projects. Surveys of likely voters found most were opposed to highway expansion projects compared to alternatives such as improved signalization, light rail and paratransit. Consultants also tested voter reaction to different transportation finance alternatives such as tolls, congestion and vehicle mileage fees, and parking fees. Their results suggest that the public is most comfortable with pollution fees imposed on gross polluters and with the proposed gas tax increase plan. High-occupancy vehicle (HOV) lanes and toll facilities are still politically difficult strategies. The region continues to rely primarily on traditional sources, gasoline and sales taxes, developer fees, State Transportation Improvement Program (STIP) funds, and TEA-21 funds, to meet its transportation finance needs. However, despite the lack of regional consensus, the regional authorities are still looking at ways to implement more innovative approaches to transportation finance in the future. There has been some limited progress on shifting project funds and revenue sharing between counties.

DISCUSSION

Three concerns dominated the discussion: the role of better land use planning in mediating the need for some transportation projects, the need for specific strategies to develop the political will to raise new revenue, and the possibility that innovative finance strategies might lead to greater dependency on federal funds. One audience member asked whether better land use policy might negate the need for many transportation projects. Mr. Weinrich noted that in Nevada, federal ownership and legislated disposal of available land for development, has precluded the possibility for more effective land use planning. Mr. Bates stressed the possibility of building up transit corridors and making downtown areas more pedestrian-friendly. Ms. Sales noted that Arizona does not have the density to support transit.

One attendee's suggestion that the way revenue was used would play a key role in building more support for value pricing was met with a telling observation. The panelists noted that little revenue was being generated from most existing congestion pricing projects because congestion was not bad enough to cause large numbers of motorists to pay the fee to escape congestion.

One audience member argued that Arizona's use of grant anticipation notes as an innovative finance strategy was building dependency on federal grants into the state's finance system even though the size of federal grants was uncertain over the long-term. He suggested that the revolving fund concept represented a better policy choice. Ms. Sale agreed that the state infrastructure bank increases financial capacity over time and reduces reliance on federal funds but also stated that in Arizona, grant anticipation notes were seen as a short-term strategy to take advantage of an existing revenue source to leverage additional funds.

Finally, an audience member asked the panelists for strategies to overcome political opposition to raising new revenue. The panelists agreed that increased education was the key. Ron Bates noted that the election of a Democratic administration in California might lead to a renewed focus on infrastructure investment. Ms. Sales remarked that transportation was not currently a high priority with voters since travel delays are not severe. Voters need to realize that they are paying less for transportation now that automobiles are more fuel-efficient.

SESSION 3: THE FUTURE OF TRANSPORTATION FINANCE

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

This evening session examined how the revenue generating capacity of transportation finance has changed in recent years, and the prospects for restructuring the current system for the future. Martin Wachs presented the results of a study he co-directed with Brian Taylor examining the future of highway finance in California. The purpose of the study was to analyze recent trends in California highway finance and to assess different revenue mechanisms available to the state to meet transportation finance needs. The study concluded that there is adequate revenue available to meet current needs but that procedures to calculate these needs more effectively must be devised. Professor Wachs's presentation consisted of four parts: 1) A brief overview of the history of California highway finance; 2) An analysis and extrapolation of recent revenue trends using analytical and forecasting models employed by state agencies; 3) An assessment of political preferences based on the results of 60 interviews conducted with legislators, legislative staff, agency heads, and representatives of different interest groups; and 4) An analysis of the performance of different transportation finance mechanisms against the four criteria of effectiveness, efficiency, equity, and efficacy.

1. The History of Highway Finance in California

Transportation, unique among public investment policies, has historically relied on user financing, which has encouraged more efficient use of the transportation system. Over the years, however, political pressures have led to an increasing shift away from user-based finance mechanisms to instruments such as bonds and sales taxes. The gas tax remains, however, the principal user fee in California highway finance, though other user fees, such as truck weight fees, are important as well.

As an instrument of highway finance, the gas tax possesses several important characteristics. The gas tax mimics the behavior of tolls but at a lower administrative cost than conventional, non-electronic methods of toll collection. The fact that the gas tax is hidden in the price of gasoline has made it more palatable to legislators and to voters as an instrument of highway finance. Also, unlike many other methods of highway finance, such as property taxes, both in-state and out-of-state motorists pay the tax. Finally, by charging users for some of the costs they impose on the highway system it promotes efficient use of that system, by encouraging carpools and more fuel efficient vehicles, while raising funds to pay for construction and maintenance.

California originally adopted the gas tax in 1923 as a practical way to raise the revenues needed to build roads for an increasing number of automobiles. Prior to that time, the state had depended on general revenues and bonds for transportation finance but the revenues produced by these instruments proved insufficient to meet increasing needs. In the years immediately after its adoption, the gas tax proved politically popular with motorists and interest groups such as the automobile, petroleum, and trucking industries.

Truck weight fees, on the other hand, have been politically unpopular with the powerful trucking industry almost since their inception. Truck weight fees were initially imposed because heavy vehicles such as trucks impose more wear and tear on the highway system than lighter-weight vehicles like automobiles. Because the amount of damage increases with vehicle weight, officials decided very early on that a weight-based fee was an appropriate means of assessing trucks for these higher costs. Many of the objections made by the trucking industry to different types of truck weight fees, such as complaints about the unfair economic and administrative burdens they impose, are the same today as they were in the 1920s.

2. An Analysis and Extrapolation of Recent Revenue Trends

The gas tax still raises considerable highway finance revenue but its revenue-generating capability has been diminished by inflation and by increasing motor vehicle fuel efficiency. Because the gas tax is levied on a per gallon basis it does not increase with inflation; legislative action is required to increase the tax rate. This is a politically difficult task and it is thus not surprising that the Legislature has been reluctant to increase the tax. When adjusted for inflation, the 1995 gas tax rate is the same as that in 1923. When both inflation and increased vehicle fuel efficiency are considered, however, a much starker

picture emerges. Between 1950 and 1995, the inflation adjusted gas tax per vehicle mile traveled has fallen by 50 percent. To restore this value to 1950 levels would require a gas tax increase of 25¢ per gallon. At the same time that inflation adjusted revenues are declining, expenses are not. We have not yet reached a crisis point though as Professor Wachs noted, "There are storm clouds gathering on the horizon."

In recent years there has been a real decline in capital investment and spending on highway operations and maintenance. There is just not enough revenue available to "build our way out" of congestion problems; revenue shortfalls are simply too high and repair and maintenance cannot compensate for the decline in new capital investment. Even if the gas tax were immediately raised 5¢ per gallon, state revenue forecast models project there would still be an 18 percent decline in real revenue between 1997 and 2010 due to the impact of inflation and increasing vehicle fuel efficiency. If the gas tax were increased 1¢ per year every year between 1997 and 2010, there would be a 7% increase in real revenue. If the gas tax was merely indexed to the consumer price index, there would only be a 4 percent decline in real revenue.

The issue of declining revenues may be a serious one although we cannot judge its severity unless we know how much revenue is required to maintain or improve current highway conditions. Since the middle to late 1980s, few state agencies have published needs studies. Professor Wachs and his research team of graduate students at UC Berkeley and UCLA found only one well-publicized transportation needs study for California, produced by business and construction interests, that has been cited by many other organizations to support their demands for increased funding. Professor Wachs argued that state highway departments must return to the production of needs studies and should employ benefit-cost analysis in determining whether and which projects are actually needed. Only then will it be possible to determine how much revenue needs to be raised from existing and alternative sources.

3. An Assessment of Political Preferences

The research team's interviews of legislators and different stakeholders revealed that they favor finance mechanisms primarily on the basis of political acceptability among voters. Many officials perceive pricing mechanisms as a form of social engineering. Therefore, it is not surprising that there has been a shift away from user fees that give price signals in addition to raising revenues, but are seen as politically difficult to increase or to implement, toward county sales taxes and bonds that have more voter appeal. Some interviewees claimed that a one-cent sales tax increase could be passed more easily than an 18 cents per gallon increase in the gas tax because it seems smaller in comparison, even though the same amount of revenue would be raised.

The overriding concern with political feasibility has led to a proliferation of ballot measures that detail specific projects to be constructed with new revenue. These lists tend to be devised with political rather than efficiency criteria in mind; the lists often include a project simply to gain a particular interest group's approval of the measure. The significance of the departure from user taxes is often not recognized by legislators for whom raising revenues to address funding shortfalls is the primary objective. Legislative

term limits have complicated the picture because legislators with experience in transportation issues are being termed out of office.

It has proven difficult to raise the gas tax although an analysis of legislative bills reveals a clear consensus to do so in periods of crisis. These crises have been recurring, and a new crisis will undoubtedly appear again. If conditions worsen it may become possible to increase the gas tax or to raise or impose other user fees. Professor Wachs believes it is our responsibility to be prepared and to try to avoid such crises rather than wait to respond to them.

4. An Assessment of Alternatives

Professor Wachs concluded his presentation with his assessment of different finance instruments.

Gas Tax

Despite its insensitivity to inflation and changing vehicle fuel efficiency, the gas tax remains a viable finance instrument and will continue to produce a large, though declining, percentage of the revenue raised for transportation. There is presently no political support in California for indexing the gas tax to inflation, as some states have done. Many of those surveyed believed that indexing, which leads to dramatic fluctuations in revenues in periods of rapid inflation, would result in a loss of legislative accountability and that this would be dishonest to the voters.

Vehicle Miles Traveled (VMT) Fees

Another finance alternative is VMT fees based on either annual odometer readings or remote sensing and subsequent billing. These are not very promising in the short-term. The simple VMT fee mimics the gas tax; it is not sensitive to the facility used or the time of travel. VMT fees tied to specific facilities appear more promising. Although similar to tolls, the public is more likely to support this concept if it is connected to the provision of new capacity or some other tangible benefit from the fee. This type of fee is also consistent with principles of efficiency and equity.

Vehicle License Fees

The vehicle license fee is not currently used for transportation finance in California. Essentially a form of property tax that serves as a major source of general revenue for local governments, the present fee is a moderately progressive tax instrument. Current efforts to reduce it by 25 percent mainly benefit middle and upper income drivers. One alternative to the fee reduction plan would be to convert some portion of the vehicle license fee into a transportation-related user fee. Such a change would be more equitable and might be politically acceptable.

Truck Weight Fees

The issue of truck weight fees is a contentious subject. Many analysts outside the trucking industry believe that truckers are not assessed their fair share of the costs they impose on the transportation system. The current truck weight fee schedule is inefficient and encourages overloading trucks. While regulations prohibit excess loading, it would make better sense for the pricing and regulatory systems to work in the same direction. Professor Wachs believes that with modern technology it is possible to devise a more equitable and efficient system that both the trucking industry and its critics can agree on. For instance, a new weight-based system could be established that is initially revenue-neutral but that gradually phased in increased fees for heavier vehicles. A detailed study, with trucking industry participation, is needed to build consensus for such a system.

DISCUSSION

The discussion centered largely on issues of political feasibility. Many attendees argued that the

voters are simply opposed to higher gas taxes, and that despite equity concerns the sales tax was more politically acceptable. Some participants saw the sales tax as the more preferable finance instrument though some also supported VMT and other mileage-related fees. Those favoring sales taxes viewed them in the nature of a social contract between legislators and voters where each locality can differentiate spending based on local need. The sales tax was seen by some as giving the voters a better idea of what they are getting for their money whereas gas tax revenues go directly into the state bureaucracy. Others responded that the gas tax could be restructured and decentralized more like the sales tax. However, one audience member remarked that decentralizing taxes harms rural areas since they have limited funding bases and an especially anti-tax electorate. Many agreed that there is a real disconnect between fiscal realities and public perception. The real question is what does the public want and what is it willing to pay for?

One audience member noted that voters tend to look at the entire tax package without distinguishing between different uses for various individual taxes. Another noted that the sales tax was more flexible than the gas tax and that it provided for more diverse regional applications making it easier to build political consensus. Professor Wachs said that there have been a few notable successes in implementing pricing policies, such as the State Route 91 project, so that voters may be persuaded to accept it.

One audience member argued that voters see the sales tax as more equitable since it is related to disposable income. Professor Wachs reiterated that the sales tax was in fact more regressive than the gas tax and noted the need to better educate the public and legislators on the advantages of a user fee-based finance system. A representative from a Bay Area transportation agency noted that his agency conducted a survey that revealed one reason for the reluctance to accept pricing policies is that voters don't think the system is broken and that politicians usually follow the voters. Professor Wachs responded that concern with traffic congestion is significant in the Bay Area but acknowledged that for many commuters who use arterial roads and other parts of the system, freeway congestion is not an immediate problem.

The discussion raised other issues as well. For example, a representative from local government expressed her concern that the loss of vehicle license fee revenue to transportation would have to be made up with state funds. She also asked how transit systems should fit into a user fee system since they also use the roads, and she questioned whether transit should be self-supporting. Professor Wachs replied that proper pricing of the transportation system would encourage more transit use and that while the transit system should pay part of the cost of the road system this could be hard to implement.

Responding to a question on how to prioritize the reforms he had been discussing, Professor Wachs stressed the need to build consensus around the principle that user fees are valid financing mechanisms. Mr. Graymer reminded the audience that the principle underlying pricing mechanisms is that price is a determinant of need and prices serve to ration use so that consumers impose fewer costly demands on the system.

DAY TWO THEME:
Reconsidering Costs and Benefits in Transportation Finance

SESSION 4: PUTTING INNOVATIVE TRANSPORTATION PRICING INTO PRACTICE: NEW TECHNIQUES, NEW APPROACHES

Moderator: **Martin Wachs**
Robert Poole, President, The Reason Foundation
Thomas Keane, Economist, Office of Policy Development, Federal Highway Administration, Washington, D.C.
Reza Navai, Research Manager, Transportation Planning Program, California Department of Transportation
Craig Scott, Manager of Transportation Finance, San Diego Association of Governments
Edward C. Sullivan, Professor and Chair, Civil & Environmental Engineering Department, California Polytechnic University, San Luis Obispo

The second day's sessions focused on how the array of transportation finance mechanisms could be employed to regulate the use of the transportation system, minimize the cost of operating and maintaining transportation facilities, and reduce congestion and air pollution. They also introduced the issue of equity into the discussion. The Honorable Dennis Hansberger, a member of the San Bernardino County Board of Supervisors, opened the day's proceedings by welcoming the audience and describing the special transportation problems faced by the mountain communities he represents.

The morning session focused on new techniques and new approaches to putting transportation pricing into practice, and the prospects for pricing policies to produce steady revenues while increasing the efficiency of the transportation system. The presentations included a survey of recent developments in transportation pricing, an overview of transportation pricing opportunities available under federal transportation legislation, a discussion of implementation strategies, and detailed analyses of two congestion pricing programs in Southern California.

Robert Poole focused his remarks on recent developments in pricing transportation. Mr. Poole began by briefly discussing a number of examples of traditional road pricing on existing roads in Singapore, Hong Kong and peak hour pricing projects in Korea and France. He also described some innovative pricing approaches in actual practice around the world designed to add additional capacity, including the toll ring roads in Norway, a private-franchised toll tunnel in France, privately financed toll roads in Australia, and the State Route 91 Express Lanes in Southern California. He offered a more detailed discussion of Toronto's Highway 407, a 43 mile-long franchise that is the first fully automated toll road in the world. Highway 407, which is used by approximately 200,000 vehicles per day, has differentiated peak, shoulder, and off-peak rates. Regular users are billed at discount rates via in-vehicle transponders while casual users have their license plate pictures taken and are billed by mail. While electronic tolling frequently raises

privacy issues, Highway 407 users do not appear to be very concerned as only two dozen of the 250,000 transponder holders have signed up for available anonymous accounts.

Mr. Poole also discussed other innovative transportation finance strategies including privatization involving the use of debt-revenue bonds and/or equity-share stock. In New Zealand, the parliament will consider a proposal to commercialize the highway system and to establish self-supporting highway corporations to operate different segments. The highway system will then be run as a utility. In addition to opening the field to private competitors, this would give public and private highway operators an incentive to preserve the asset value of their facilities. To attract private equity capital, several countries have offered the public shares in transportation authorities (established to manage transportation facilities) to capitalize the revenue streams coming from toll collections. In the United States, many states have experimented with private toll facilities but privately-issued bonds are taxable and thus private operators can not compete with public operators who can issue tax-exempt bonds. One alternative is to establish non-profit corporations to pass through the tax savings. Virginia and a few other states have experimented with this and the SR 125 project in San Diego will likely use this method to issue debt instruments at a 3-4 percent lower cost. Mr. Poole sees potential for using these innovative transportation finance approaches and for treating highways more like utilities.

Thomas Keane provided both an overview of the lessons learned from the early congestion pricing projects in the United States and a preview of the new Value Pricing Program established under TEA-21. The initial congestion pricing pilot program established under ISTEA provided for up to 5 projects at $25 million per year. In total, 11 projects were supported by ISTEA: four implementation projects and seven pre-project studies. The goal of the congestion pricing pilot program was to use dynamic pricing to manage travel demand. Mr. Keane reported that the government's evaluation of several demonstration projects established by this program shows that they are working: commuters are willing to pay for time savings, predictability in travel time, and safety. With variable pricing, traffic flows have been maintained or improved slightly. These projects have also demonstrated that political support is crucial to implementing pricing policies. Mr. Keane noted that a single public official can make or break a project; the successful projects had a political champion at the start. Public acceptance is also critical and can be gained by keeping the message simple and stressing the individual benefits of transportation pricing. How the revenue will be used will also affect public attitudes; support is likely to be higher if the funds are dedicated to improving transportation facilities. Although decisions on how to spend revenues raised through congestion pricing raise potentially troubling equity concerns, these were not a significant problem with these few incremental projects.

The newer TEA-21 legislation provides $11 million per year in funding through 2003 for up to 15 new implementation projects, which can include interstate highways. The current trends appear to be more towards pricing individual high occupancy/toll (HOT) lanes and bridges than complete roadways. Mr. Keane believes that the ideal move would be to area-wide pricing although this does not appear likely in the near-term.

Reza Navai spoke about implementation strategies. The main problem in transportation finance is the instability in revenues and the lack of systematic connections between finance policies and transportation needs. He noted that congestion pricing is related to road conditions while user financing is tied to the level of budget need. The present fuel-based system is not reliable since it is difficult to adjust revenues. He believes there needs to be higher accountability and cost responsibility for consumers. Mr. Navai noted that although the viability of the present fuel-based system is questionable due to use of alternative fuels and improvements in fuel efficiency, user-based fees will not easily replace the gas tax due to technical, administrative and capital costs. He argued that an incremental approach building in phases on local projects offers the best approach for implementing transportation pricing on a larger-scale. Mr. Navai focused on the concept of vehicle miles traveled (VMT) fees as a potential alternative to a fuel based system that is subject to international and national politics. Such a system would provide a better measure of revenue coming from different sources and would provide more information on highway use by type and location of vehicle. VMT fees can be structured in various ways. A VMT fee could be flat or it could be variable, and it could be implemented via remote sensing or through dedicated short-range electronic toll collection systems. The basic technology to implement a local VMT fee exists but requires some refinement, while a regional VMT fee is more problematic. A mileage-based system would need to carefully consider the problems of trucks and goods movement, the impact of alternative fuels and vehicle fuel efficiency. Mr. Navai ended his remarks by calling for a limited gas tax increase and for greater use of private sector financing of transportation facilities.

Craig Scott and Edward Sullivan presented their analyses of two Southern California congestion pricing projects. Craig Scott focused on the Interstate 15 congestion pricing demonstration project in San Diego County. The goals of this project were to maximize the use of the existing lanes, relieve congestion on the main lanes, and fund transit service in the corridor. The program allows single occupant vehicles to use a previously underutilized 8-mile reversible high occupancy vehicle (HOV-2+) lane for a toll ranging generally from 50¢ to $4 per trip. For the first one and a half years of the project, monthly passes were sold to drivers wishing to use the HOV lane but since then the facility has employed electronic per-trip toll collection known as FasTrak™. Real-time pricing makes the facility unique; prices are calculated every six minutes to maintain roadway level-of-service "C." There is a theoretical maximum toll of $8 per trip. The program has strong public acceptance although there are some concerns about the visibility of the toll signs and safety issues relating to vehicle merging. Consumers would also like more real-time information on roadway conditions so they can decide whether to enter the system. Since the project began, the HOV lanes have experienced a 35 percent increase in vehicle traffic while the main lanes have experienced a minor decrease in traffic. The facility produces net revenue of $465,000 per year which is used to fund local transit service.

Professor Edward Sullivan presented the results of his study evaluating the State Route 91 Express Lanes facility in Orange County. The facility, opened in 1995, consists of four high occupancy/toll (HOT) lanes built in the existing median of the SR 91 freeway. The facility currently meets its debt service and operating costs and generates $20 million a year in total revenues although this could drop due to the opening of a competing toll road

nearby. Approximately 100,000 transponders have been distributed to users. Most users significantly value the time savings, comfort, and stress-free ride provided by the facility. Professor Sullivan's research found that half of all patrons use the facility only one time per week, and that higher income drivers tend to use the facility more frequently than other users. Moreover, while males make up a majority of commuters in the corridor, females are more likely to be frequent users of the facility. There have been slight gains in carpooling but there have also been a significant amount of induced single occupant vehicle travel which has led to a modest decline in overall average vehicle occupancy. Many of these induced trips are discretionary trips. Toll charges are higher during the peak period. Initially, variable tolls and privatization were not popular but over time public approval has increased. Public acceptance of the project was hesitant at first, but it has improved in part due to the fact that the toll only applies to single-occupant vehicles (SOVs) choosing to use the new lanes; HOVs and all travelers in the main lanes still travel free. Professor Sullivan concluded that the project simply presents the motoring public with another travel option.

DISCUSSION

The discussion focused on five issues: 1) political feasibility, 2) the stance of the environmental community towards pricing, 3) the issue of devolution, 4) concern over the use of non-profit "covers" by private entities hoping to capitalize on tax-exempt status, and 5) the possibility of facilities geared specifically towards trucking and goods movement. One audience member noted that even revenue-neutral VMT pricing proposals are controversial in the press and that there is a great need to educate the public about why pricing is more effective and more equitable than the gas tax. Mr. Navai suggested that these proposals raise many political issues and will require long-term strategies and careful implementation. Another speaker suggested that the state transportation departments should work more closely with local metropolitan planning organizations as project partners.

An audience member noted that the stance of the environmental community towards pricing policy was ambiguous in part due to the issue of induced demand. The panel agreed though Mr. Poole noted that it will be necessary to accept some additional road capacity, even at the expense of some short-term air quality benefits, in exchange for developing systems that internalize costs better and make transit use a more attractive option. Mr. Poole was also asked about the appropriate level of government for implementing transportation finance and the scope of franchise units. He responded that there needs to be a public debate on whether these arrangements should be at the metropolitan, corridor or facility level. He also supported greater devolution of authority because transportation systems are inherently state and local concerns and because the federal government has often been an obstacle to the development and implementation of innovative pricing proposals. One audience member expressed concern that inadequate attention was being paid to the public subsidies provided to private firms operating these facilities using non-profit cover entities. The moderator asked the panel about facilities geared towards trucking and goods movement. Mr. Poole noted that the tunnel project under Versailles included a separate tunnel for trucks. He also recognized that there was a

good case for looking at truck HOT lane facilities. Mr. Keane added that the Federal Highway Administration had not yet received any proposals for truck facilities.

SESSION 5: DEVELOPING MORE EFFECTIVE LINKS BETWEEN TRANSPORTATION FINANCE AND AIR QUALITY IMPROVEMENTS

Moderator: **Jim Ortner,** Manager of Technical Services, Orange County Transportation Authority
Elizabeth Deakin, Associate Professor, Department of City & Regional Planning, UC Berkeley
The Honorable Greg Harper, Chair, Bay Area Air Quality Management District; and Councilmember, City of Emeryville
Barbara Riordan, Boardmember, California Air Resources Board
Roland Hwang, Transportation Program Director, Union of Concerned Scientists

This session turned its attention to the question of air quality. It looked at how fuel taxes, vehicle fees and other pricing strategies can be used to link the costs paid by road users more closely to mobile emissions they generate. Professor Elizabeth Deakin began the session with a presentation of the results of her study on the impact of transportation pricing on travel behavior and auto emissions. The other panelists discussed issues relating directly to attempts to use transportation finance instruments to improve air quality. After analyzing pricing strategies in San Francisco, Los Angeles, San Diego, and Sacramento, Professor Deakin concluded that congestion pricing to achieve level-of-service "D" would reduce vehicle miles of travel (VMT) by 3 percent and a $1 parking surcharge would reduce VMT by 1 percent. VMT fees and higher fuel taxes would be the most effective way to reduce VMT. A $.50 per gallon increase in the fuel tax would reduce VMT between 3 and 4 percent, while a $2 per gallon increase would reduce VMT between 11 and 12 percent. A $.02 per mile VMT fee would reduce VMT by 4 percent. In short, large prices would be needed to produce significant reductions in travel.

Professor Deakin also discussed the California SMOGCHECK program as an example of an indirect emissions pricing strategy. She argued that the SMOGCHECK program suffers from a number of problems and misperceptions. One major problem is associated with fraud; some inspectors take bribes to pass autos or make minor repairs only to allow a car to pass. Another concern is with temporary repairs that are then undone after the test. A further shortcoming is that while some repairs may permit cars to pass, they don't really correct the underlying emissions problem which means the car will return to polluting. This is partly due to the fact that newer cars are more complicated machines that require highly skilled repair technicians whereas the repair work is often done by regular mechanics or car owners themselves.

Professor Deakin found that based on the cost of the test and the repairs needed to bring failing vehicles into compliance, a clean car's indirect emission fee is about 0.1 cent per mile while that for a failed car averages between 1 and 2 cents per mile. Forty percent of

all automobiles are responsible for about 80 percent of emissions mainly due to older and out of repair vehicles. A direct emissions fee of between $40 and $400 per vehicle per year depending on age and vehicle type could reduce emissions by between 4% and 7%. However, there are legitimate concerns that emissions fees would fall especially hard on the poor who tend to own older cars. Professor Deakin's research indicated, however, that many higher income persons also own older vehicles as second cars. Indeed, cars over 8 years old are as likely to be owned by rich persons as poor persons. This finding suggests that fees could be targeted to produce less negative impacts on the poor. Professor Deakin concluded by warning the audience to beware of first impressions. For example, her focus group research revealed that many people did not understand that California emissions standards already varied according to the year and make of an automobile, suggesting that an emissions fee might be viewed as a fairer alternative were the public to be better informed about all of the policy options. Many elected officials, however, simply saw it as a tax, not a policy mechanism.

Barbara Riordan updated the conference on the work of the California Air Resources Board (CARB). Ms. Riordan focused specifically on the agency's efforts to promote cleaner vehicle technology and the effort to make pickups, minivans, and sport utility vehicles (SUVs) meet passenger car emissions standards by 2004. California already has some of the cleanest vehicles on the road: new vehicles are 90% cleaner than in 1970. Still, the state is not expected to meet ozone attainment for another 12 years. In addition to its long-term strategies, the agency is also focusing on more immediate objectives. The CARB hopes to use $25 million in grants to business and $300 million in Congestion Management and Air Quality (CMAQ) funds to enable businesses, transit agencies, and school districts to replace older diesel engines with newer diesel equipment or vehicles using cleaner-burning fuels. Transit systems in Sacramento and the Coachella Valley have already moved to all compressed natural gas (CNG) bus fleets. The CARB also remains committed to improved fuel technology, transportation demand management, bike systems, ridesharing, and public transit to improve air quality. Finally, Ms. Riordan stressed the need to construct pricing strategies that account for emissions costs as well as congestion and road damage.

Roland Hwang expressed the Union of Concerned Scientists' (UCS) desire to look for opportunities to create a dialogue addressing the tension between the transportation and environmental communities. The UCS's chief mission is to reduce the environmental impacts of the transportation system. They believe technology improvements will not be enough, that it will also be necessary to modify demand. The UCS is open to employing market-based pricing strategies in transportation such as congestion pricing, and pay-at-the-pump automobile insurance. They have four criteria for assessing transportation finance strategies: 1) political feasibility, 2) effectiveness at meeting environmental goals, 3) equity implications given the changing demographics in the state, and 4) tradeoffs in short-term and long-term environmental impacts. Mr. Hwang believes that so far we have not adequately quantified the environmental benefits of market pricing.

Greg Harper offered an overview of the work of the Bay Area Air Quality Management District. He stressed the importance of designing transit systems to reflect regional

pollution patterns. Of particular interest was the agency's finding that Saturday and Sunday ozone levels in the Bay Area are worse than during the week, suggesting that commuter travel is not as big an air quality problem in the region as generally thought. Mr. Harper also expressed his desire to make freight rail more competitive with trucking since diesel particulates are a significant air quality problem in the region. He noted that vehicle buyback programs are the most effective programs currently in place. He also added that environmental groups in Alameda County had recently opposed the reauthorization of a _ percent sales tax, despite the fact that 70 percent would go to transit, since many of the proposed public transit investments were seen as pork-barrel projects. Finally, Mr. Harper spoke of the need for better agency coordination in the Bay Area.

DISCUSSION

One audience member asked whether we could use transportation finance to address air quality problems and if air quality impact was an appropriate criterion to use to evaluate transportation finance strategies. Mr. Harper replied that air quality was the one area in which we actually possess effective policy tools and that to abandon these efforts would mean that we'd lose the ability to have any real impact. A representative of the trucking industry noted the improvement in diesel engine technology and expressed his concerns over using public dollars to encourage the diversion of freight from trucking to rail. He also noted that most of the benefits would be in open areas where pollution is less of a problem, and that trucks would still be needed in urban areas to move goods to and from rail facilities.

Another audience member asked the panel about the likely public reaction to CARB's efforts to make trucks and sport utility vehicles meet passenger car emissions standards. Barbara Riordan recognized the concerns about this policy decision, particularly in rural areas, but she also noted that many people concerned about air quality in urban areas support this effort. Finally, one audience member raised the possibility of using other options such as distance-based insurance premiums both as a means of translating insurance from a fixed into a variable cost and to address air quality concerns. Mr. Harper replied that pay-at-the-pump insurance would have more impact on driving and also dealt with the problem of uninsured drivers. Mr. Hwang expressed some concern about the political feasibility of this strategy in light of insurance industry opposition.

SESSION 6: HEAVY VEHICLES, ROAD WEAR, AND USER FEES

Moderator: **Catherine Wasikowski,** Executive Director, RIDES for Bay Area Commuters
Kenneth Small, Professor, Department of Economics, UC Irvine
Daniel Malick, International Transportation Finance Advisor
Anne O'Ryan, Manager of Government and Public Affairs, American Automobile Association—Oregon/Idaho
Kenneth Simonson, Former Chief Economist, American Trucking Association

Dramatic increases in goods movement by truck are projected for the coming decades. Efficiently and equitably financing the transportation infrastructure improvements needed

to accommodate projected growth in trucked goods requires a clear link between use and pricing. How much wear and tear heavy vehicles impose on the road system, and how much trucks and other heavy vehicles should pay for this wear and tear has been hotly debated in both Sacramento and Washington for decades. This session explored the relationship between heavy vehicle pricing and road wear. The presentations explored the results of new research on the damage imposed on roads by heavy vehicles and the role new technology might play in devising an alternative to the current system of pricing trucking.

Kenneth Small asserted that the underlying issue in the contentious truck pricing debate was the high cost of maintaining many highway miles of thick pavement to accommodate heavy vehicles. He suggested that it is possible to reduce highway costs through a combination of truck pricing and improvements in road durability. We have traditionally approached the problem of building pavements to withstand heavy loads simply by building thicker roads. Professor Small argued that we have neglected to address the root of the problem, which is axle weight. The relationship between axle weight and road damage is non-linear. Professor Small explained that as a rule of thumb, each pound increase in weight generates a threefold increase in repair costs over the life of the facility. When the same weight is spread over more axles, however, the amount of road resistance increases and the degree of road damage drops. Yet, state fuel taxes and license fee structures encourage truckers to use vehicles with fewer axles. Thus, he concludes, our transportation finance policies are working at cross-purposes with the goal of maintaining the road system.

Professor Small also mentioned that truckers often point to highway damage where there is limited truck traffic to argue that weather factors are more important than truck use in causing road damage. Citing studies from Connecticut and California, he argued that in many cases heavy vehicles did in fact damage the road surface and this damage was then magnified due to severe weather.

Professor Small concluded by stating that there are two approaches to encouraging truckers to reduce axle loads. One method is through complicated regulation. An alternative approach, which he favors, is to change the tax system to encourage more axles and smaller axle loads. He stressed that this change in tax policy should be accompanied by greater investment in thicker highway pavements. Ideally, the pavement of the typical Interstate freeway should be 15% thicker than at present. The result of investing more during the construction phase and changing truck tax policies will be a 1/3 savings in total costs over the life of the facility, largely due to substantially reduced maintenance costs. The overall effect would be to *reduce* the need for highway revenues and to improve the fiscal health of government. The costs to trucking would be minor in the long run.

Daniel Malick spoke of the opportunity to use technology to better price trucking. Mr. Malick described the Certified Wide Area Road Use Monitoring (CWARUM) system which uses global positioning satellite (GPS) technology, computers, and digital internet communications to provide both a means of pricing trucking and a confidential way for trucking firms to gain real-time information about their fleets. CWARUM is a privately-

operated service with government's role limited to certifying the service. Because it uses satellite technology, CWARUM offers the potential for global coverage at a fraction of the cost of constructing conventional overhead gantries. Many different operators could sell services to consumers using the existing infrastructure. Mr. Malick believes that CWARUM has wide potential but that at this stage government incentives are required to ignite the new industry.

Anne O'Ryan described the American Automobile Association's work in Oregon with alternative truck tax instruments. Oregon has long been an innovator in transportation finance. It was the first state to impose a gas tax. It was the first state to tax truckers. It is the only state with a truck weight-mile tax. However, there is no sales tax in the state; this offsets the truck taxes and lowers the overall cost of doing business. Oregon conducts cost responsibility and needs studies to determine road user charges. Automobile owners pay 62 percent of all road user charges while truckers pay 38 percent based on assessments of demand and road damage. All road user taxes are dedicated to transportation purposes.

Ms. O'Ryan also spoke in detail about Oregon's weight-distance fees, which apply to trucks over 26,000 pounds. For trucks between 26,000 and 80,000 pounds, the tax is based on the declared weight multiplied by the appropriate rate in a tax rate table. For trucks over 80,000 pounds, the tax is based on the number of axles, truck weight, and miles traveled, with lower rates for vehicles with more axles. She believes that the use of new technology could substantially reduce the costs of complying with the system both for truckers and the state by eliminating paperwork. It could also be used for congestion pricing and regulatory enforcement. As a group, Oregon truckers primarily operate low weight vehicles and pay about the national average in truck fees, though the trucking industry has been actively trying to eliminate the weight-mile tax. Ms. O'Ryan cautioned that such a move would be inequitable, citing Nevada's cancellation of a weight mile fee system in 1989 that resulted in a $70 million revenue loss to the state, and higher fees for in-state truckers compared to out-of-state truckers.

Kenneth Simonson spoke of the importance of recognizing the diversity of the trucking industry when considering changes to the current truck tax system. He stressed the variety in vehicle types, loads, and ranges as well as the differences in ownership, revenue, and profitability among truckers. There is also a wide range in the level of participation in trade associations and in the political process. This very diversity leads to differences in the way truckers perceive the fairness of alternative tax systems. Mr. Simonson cautioned that the industry is very entrepreneurial and innovative but that it also tends to be conservative; truckers are frequently opposed to even revenue-neutral changes in tax policy. Still, while there is superficial agreement in the industry that the current system is acceptable there is some opportunity to sell truckers on change, provided they can be convinced a new tax system will benefit them through lower administrative costs, and will not result in more government intrusion in their business.

DISCUSSION

The discussion centered around four general topics: 1) the application of GPS technology on high-occupancy/toll (HOT) lanes, 2) the trucking industry's stance on congestion

pricing, 3) the implications of NAFTA for air quality and road safety, and 4) the infrastructure impacts of double-length trucks. Mr. Malick was asked whether HOT lane facilities would prove a good place to test GPS-based pricing technology. He agreed that it would and that the technology would be quite accurate in such a setting but acknowledged concerns about confidentiality. One audience member asked Mr. Simonson about the trucking industry's apparent negative stance on congestion pricing given that the industry could benefit if other vehicles were priced off the road. Mr. Simonson acknowledged that the industry was suspicious about such a change despite the potential benefits but attributed the industry's position to fears about high toll rates and the possible diversion of the revenues to non-highway uses.

One audience member asked the panel about the potential impacts of NAFTA's cross-border trucking provisions on road safety and air quality. Mr. Malick suggested that CWARUM might serve as a monitoring technology. Ms. O'Ryan stressed concerns about safety issues and pressure to raise weight limits. Mr. Simonson mentioned that the American Trucking Industry has been studying the issue for several years but that the consensus view was simply to let trade flow rather than to wait for a perfect system. Finally, Professor Small was asked about the potential impacts of double-length trucks on transportation infrastructure, particularly bridges. Professor Small stressed that there is no pricing strategy yet for bridges and he suggested such a system would probably be based on total weight. Several audience members also raised concern about the ability of highway interchanges to handle vehicles that required such large turning radii.

SESSION 7: MY FAIR SHARE: EQUITY AND THE TRANSPORTATION/LAND USE/AIR QUALITY CONNECTION

Moderator: **Brian Taylor**
Donald Shoup, Professor, UCLA School of Public Policy and Social Research
Robert Garcia, Senior Attorney, Environmental Defense Fund
Michael Cameron, Economic Analyst, Environmental Defense Fund
Martine Micozzi, Special Assistant to Deputy Administrator, Federal Highway Administration

Proposed changes to the existing system of transportation finance inevitably raise questions of fairness and equity. But equity is very much in the eye of the beholder and depends greatly on whether one measures equity with respect to individuals, groups, or places. This session addressed the issue of equity first by defining several different notions of equity, then by discussing how we might reconcile issues of equity with those of efficiency, and finally by looking at recent efforts to insert struggles over social justice into the transportation finance debate.

Brian Taylor began the session by noting that almost all debates in transportation finance are really debates about equity. However, there are several different notions of equity and several units of analysis from which to assess these notions. Professor Taylor described three different types of equity, defining them using the analogy of public education.

Market equity is concerned, for example, with ensuring that whatever tax money is generated from within an individual school district is the amount that school should receive. *Opportunity equity* would be achieved by equalizing resource allocations across school districts. *Outcome equity* might imply that all students should read at the same level. Along with these three types of equity we can consider three different units or levels of analysis. The first, the geographic unit of analysis, deals with equalizing equity across geographically-defined jurisdictions and typically represents the viewpoint of legislators and policy makers. This is, for example, the unit of analysis at which Congress makes highway expenditure decisions. The geographic scale often dominates policymaking debates because this is the level of political representation. A second unit of analysis is the level of the group. The group might be an interest group such as the trucking industry or it might be a racial or ethnic group. Advocates tend to be concerned with how particular groups fare relative to other groups. The final unit of analysis, often the focus of economists, is the level of the individual.

		Principle of Equity		
		Market	Opportunity	Outcome
Unit of Analysis	Geographic			
	Group			
	Individual			

Because demand for different services, such as transit, does not vary equally across geography, achieving geographic equity is more often at odds with concerns for efficiency than are group or individual equity. Professor Taylor noted that debates that are often mischaracterized as being between social equity and economic efficiency are actually debates between geographic equity on the one side and economic efficiency *and* individual equity on the other. Efforts to attain geographic equity have led to higher subsidies of suburban than urban transit riders and uniform fare structures which unintentionally lead to cross-subsidization of the high income riders by lower income riders, among numerous other inefficient and inequitable arrangements. Professor Taylor believes that one way to preempt the debates over geographic equity would be to institute pricing, or market equity, at the level of the individual which would make transportation charges more like user fees than general taxes. There would be a clearer connection between use and revenue collected. Depending on the distribution of revenues, it could also serve opportunity and outcome equity. For example, it should be possible to encourage transit dependent riders to travel more during off-peak periods which would improve operational efficiency and at the same time promote individual and group equity. Professor Taylor recognizes the difficulty in doing so, and he recognizes the skepticism about pricing voiced by many interest group advocates. Yet, he noted these same skeptics have rarely raised concerns about the inequities of the current unpriced system.

Donald Shoup agreed that it is possible to reconcile concerns about equity with those about efficiency in transportation finance. To illustrate, Professor Shoup described the bus fare reduction program implemented by the Southern California Rapid Transit District (SCRTD), the predecessor agency to the Metropolitan Transportation Authority (MTA) in

Los Angeles County. In 1980, voters approved Proposition A which established a _ cent sales tax for transportation. This provision raises some $300 million a year in transportation revenue. Between 1982 and 1985, the SCRTD used some of this money to reduce bus fares to 50 cents per ride. In 1985, fares were returned to their previous level of 85 cents and money was shifted to an ambitious rail construction program. A study covering the period 1982-85 sought to measure whether using sales tax revenue to fund transit was regressive or progressive. The analysis revealed that although the sales tax itself was regressive, when one factored in the distribution of the benefits of subsidized transit service, the entire project was in fact progressive since very few high-income riders rode public transit. Professor Shoup concludes that we have to look both at taxes and benefits to judge the fiscal incidence of a particular program. Along with being equitable, the program was also more efficient at attracting transit riders than the current rail program. Transit ridership in LA County peaked during the three years of low fares and has endured a precipitous drop in subsequent years. Dr. Shoup added that this type of analysis also suggests that opposition to higher gas taxes on equity grounds may be mistaken since the majority of the benefits of a low gas tax go to the wealthy who drive more and thus consume more gasoline.

Professor Shoup also discussed the South Coast Air Quality Management District's (SCAQMD) program to discourage solo driving in order to reduce vehicle emissions. To achieve these goals, the SCAQMD set average vehicle ridership (AVR) targets for firms, which were required to devise plans to meet their targets. Despite the fact that only 20% of firms ever met their AVR targets, the SCAQMD routinely approved their plans. Professor Shoup proposed that firms be required to demonstrate a good faith effort to achieve their targets by agreeing to not offer higher benefits to solo drivers than offered to pedestrians, transit riders, or cyclists. Professor Shoup was surprised to find that his proposal, intended to improve efficiency, was denounced on the grounds that it was *fair*, since non-drivers would receive the same benefits as drivers. His proposal had implicitly threatened the biggest transportation subsidy of all, free parking. Nevertheless, one result of his efforts was California's Parking Cash-Out Law that allows employees to take cash in lieu of an employer-paid parking space. A study of the law's effects demonstrated a reduction in solo driving from 76 percent to 63 percent. The program was efficient because it achieved what was hoped for—and it was fair because it treated all individuals and all modes of travel equally.

Robert Garcia spoke about transportation finance and social justice by looking at the lawsuit brought by the Bus Riders Union and others against the MTA in Los Angeles. Mr. Garcia was a lead attorney for the plaintiffs in this case. He began by noting that the principal goal of the litigation against the MTA was to alleviate the plight of bus riders by providing mobility for the transit-dependent, a group that is disproportionately composed of the poor, women, people of color, children, the elderly and disabled. Reducing congestion and improving air quality were secondary goals.

In 1994, the MTA proposed to increase bus fares and to eliminate its monthly pass. The Bus Riders Union and the NAACP filed suit against the MTA alleging that the MTA was discriminating against its overwhelmingly low-income, minority bus riders and obtained a

court injunction against the fare plan. The plaintiffs argued that 94 percent of MTA patrons ride the bus but that only 30 percent of the agency's discretionary money was being used for buses while 70 percent was spent on rail construction. The plaintiffs also documented the disparities in per rider subsidies and safety expenditures between bus and rail passengers and alleged that MTA buses operated under conditions of severe overcrowding while rail did not. The case was settled by a consent decree in the fall of 1996. Under the terms of the decree, MTA agreed to invest $1 billion to upgrade its buses over the next 10 years. The MTA also pledged to reduce overcrowding and to give top priority to meeting the needs of transit-dependent persons. Fare increases are limited over the life of the agreement. The consent decree also led to the establishment of a joint working group of representatives from the Bus Riders Union and MTA management to discuss policy changes at the MTA.

Mr. Garcia noted that the work begun in the MTA case has continued nationwide. Similar struggles are taking place in Atlanta, Milwaukee, Chicago and Detroit over highway versus transit investment. Mr. Garcia stressed that the real issue is between efficiency and equity and not highways versus transit or bus versus rail; bus was the right solution in Los Angeles but rail might be correct in other places. Mr. Garcia also discussed the Environmental Defense Fund's (EDF) recent work with the Southern California Association of Governments (SCAG), describing the positive steps that have been made with SCAG through advocacy rather than litigation. SCAG has agreed to recognize compliance with Title VI as a goal in its Regional Transportation Plan (RTP). The RTP addresses the needs of transit-dependent bus riders through the creation of busways throughout Los Angeles County. It includes concerns over environmental justice and social equity as goals and sets performance standards in plain language that can be understood by the community. At the national level, the EDF is working with the U.S. Department of Transportation (USDOT) to require similar provisions in all Title VI compliance reports filed by transit operators. USDOT has budgeted $17 million for its civil rights work.

Martine Micozzi spoke about promising developments in federal policy to aid the transit-dependent. She spoke at length about a new Access to Jobs/Welfare to Work program established under TEA-21. The competitive grant program will dispense $72 million this year, 60 percent of which will go to large metropolitan areas (200,000+ in population), 15 percent to metropolitan areas with between 15,000 and 200,000 residents, and 15 percent to rural areas. During the program's first year, funds are limited to new and expanded services, such as closing gaps in nighttime service to accommodate transitioning welfare recipients and others who work late shifts. The Federal Highway Administration (FHWA) wants to encourage carpooling and vanpooling and to facilitate non-profit first time grant applicants. Ms. Micozzi also spoke about the FHWA's efforts to hold more public workshops with low-income persons and other community outreach efforts with Caltrans and the San Diego Association of Governments which led to the establishment of express bus transit service in the Interstate 15 congestion pricing project corridor.

Michael Cameron offered some general comments on the issues raised in this session and the preceding presentations. He began by arguing that the metropolitan surface transportation systems of the United States are not efficient and that if they sometimes

appear equitable it is merely due to chance. As previous speakers noted, the question of equity is a subjective one; in transportation, we rely on the Commerce Clause, the Civil Rights Act, Equal Protection Clause, and various state and federal funding formulas as guideposts for assessing equity. Mr. Cameron echoed the earlier presenters' comments that inefficiencies underlie many inequities in the system. He agreed that geographic competition predominates transportation debates but that other interest groups also dictate outcomes. He congratulated SCAG for including performance standards in its RTP to address equity but also noted that public ownership of the transportation system explains many shortcomings in the system. When efficiency matters, we tend to rely on private ownership to achieve efficiencies while expecting the government be responsible for introducing equity into the equation, as in the case of public regulation of utilities, food, and housing. We need to ensure access for all much as we do in public education. In Southern California, however, public ownership has given us an expensive, congestion-plagued transportation system managed by local officials motivated mainly to stay in office. Organizing efforts like those carried out by the Bus Riders Union are one way to address unmet needs in transportation. Mr. Cameron ended his remarks that there are legitimate efficiency and equity reasons for employing subsidies in transportation—for example, as a means of congestion relief or to connect rural areas with the rest of the country. Unfortunately, however, there are no firm guideposts telling us which subsidies are warranted and which are not.

DISCUSSION

Several interesting issues were raised during the discussion. A recurring topic of conversation was whether we were focusing too much on an inadequate and inequitable transit system and neglecting other modes. One participant suggested that there needs to be more attention paid to the structure of labor costs in transit since the present system does not accommodate welfare to work needs; several audience members raised the possibility of assisting low-income individuals in obtaining automobiles. Mr. Garcia recognized that there might be potential in this approach and urged that it be studied. Another audience member expressed concern over congestion and air pollution stemming from heavy automobile use and called for policies designed to curb auto dependence. Ms. Micozzi mentioned that the Federal Transit Administration's livable communities initiative was one policy pursuing an alternative development approach. Professor Taylor added that changes in transit demographics were turning transit into more of a social service for the poor which has made it harder to achieve equity in an era of public retreat from redistributive policies where transit agencies must satisfy broad-based constituencies to maintain public support for transit. Audience members also stressed the potential for targeting new housing development in areas where there were jobs in order to match housing to the employment base.

An audience member from the MTA took exception to some of the statements made in Mr. Garcia's presentation. He stressed that the MTA was following both the will of its board and the voters when devising its policies. He further stated that Proposition A funds were only supposed to subsidize fares for a short time and then be used for the rail system. He also raised the possibility that the highway system might be under-funded because of the additional resources the MTA had to put into its bus system. Mr. Garcia responded that

the MTA was not compelled to put the money into rail that it did and that the agency had to devote additional resources to buses in order to comply with the consent decree. Mr. Garcia also asserted that the issue who decides priorities in a democracy is important but noted that often low income people are left out of the process.

A representative from the Bay Area Air Quality District who worried that equity concerns could lead to greater inefficiency was heartened by the comments of the panel but also worried that the real problem of income disparity was being sidestepped in treating the issue simply as a transportation problem. Finally, an EPA official reminded the participants of the larger policy framework of land use/transportation/air quality. He suggested that better matching between housing and jobs would improve welfare to work opportunities and reduce pressure on the transportation system.

DAY THREE THEME:
Linking Politics, Pricing, and Revenues in Transportation Finance

SESSION 8: HOW WILL IT PLAY IN PEORIA? (OR MONROVIA? OR MILPITAS?): WHAT DO VOTERS WANT AND WHAT ARE THEY WILLING TO PAY FOR?

Moderator: **Leroy Graymer**
Jack Citrin, Professor, Department of Political Science, UC Berkeley
David Jones, Transportation Consultant, Berkeley, California
The Honorable Quentin Kopp, California State Senator and Chair, Senate Transportation Committee

As noted in earlier sessions, state legislatures are increasingly loathe to raise taxes or fees of any sort, and funding for the transportation system is increasingly decided on a project-by-project basis by state and local voters. Where the previous discussions focused on issues of effectiveness, efficiency, and equity, this session explicitly considered the issue of political efficacy: Is the finance option politically acceptable? The presentations focused on three principal topics: 1) the nature of the political landscape in California since the passage of Proposition 13 in 1978, 2) the impact of demographic change on the political landscape, and 3) the disconnect between what voters say they want and what they will support. Embedded within this larger discussion was concern over the clear difference between the demographic distribution of the population and the ethnic distribution of actual voters. Because of different levels of voter registration and voter participation among ethnic groups, the demographic distribution of the population as a whole is changing much more rapidly than the ethnic distribution of people who vote. As the presentations made clear, this could have enormous consequences for policymakers.

Jack Citrin discussed fiscal trends, demographic change and voting behavior. Since the passage of Proposition 13 in 1978, government revenues have gone up but not in inflation-adjusted or per-capita terms. Revenues accounted for 15 percent of per capita income in 1978 but declined to 12 percent by 1995. The passage of Proposition 13 brought about a new fiscal regime in California, under which the state moved from a high tax/high service state to a moderate tax/moderate service state. Several fiscal rules characterize the current regime. First, the Legislature has become more reluctant to raise taxes even as the demand for services continues to escalate. Governments have been compelled to turn to creative finance approaches to meet their fiscal needs. Second, the state has become an important source of funds for local governments, because of the need to make up for the property tax revenue lost due to Proposition 13. Third, an era of plebiscitary budgeting has emerged in which people who want taxes and services go directly to the public through the initiative process and thereby bypass the legislative process. Because of this development, voting matters—yet the electorate is changing much slower than the population at large. If

opinions and public preferences for transportation and other services vary by ethnicity, policymakers could face a serious dilemma. We do not, however, have good information about taxing preferences among different ethnic groups, particularly Latinos and Asians.

Professor Citrin also discussed voter attitudes toward taxes. Large numbers of voters say taxes are too high (40%), and a large number insist that the gas tax is too high. There is a great deal of tax hostility in the midst of general acceptance of the current fiscal regime. Fifty-five percent of voters would support Proposition 13 if it were on the ballot today. Professor Citrin contends that voters prefer taxes that are not seen or felt, just collected. He argues that this helps to explain the popularity of sales taxes over gas taxes. Professor Citrin also advises that the public is more concerned with issues of tax certainty than of tax equity.

David Jones noted that there is a profound disconnect between public policy decisions and the "votes" cast by Californians everyday when they make their travel decisions. Current policies are built on the premises that 1) we must make more efficient use of existing facilities because it is difficult to obtain new rights-of-way, 2) we must restrain the growth of automobile travel in order to improve air quality, and 3) that the earth's supply of oil cannot support continuing dependence on the automobile for mass travel. These premises have led us to implement transportation demand management programs, to provide incentives for ridesharing, and to develop transit systems to more effectively compete with the automobile. Yet, development is increasingly auto-oriented, suburb-to-suburb commuting is more important than suburb-to-central city commuting, solo driving is increasing, transit use and ridesharing are falling, and the freeway system is increasingly congested and unreliable. We are witnessing air quality and energy improvements but these are mostly due to changes in motor vehicle technology, not more transit use. In short, under the congestion management system neither the commuter nor the environment is better off by having more drivers on an increasingly congested system.

Dr. Jones argues that the current system is bent but not broken. The system works well for most of us because we live close to work. We adapt to congestion by changing where we live and/or where we work. Dr. Jones argues that we need to rethink the premises on which our policies are based since expected increases in transit rideshare never materialized. First, we need to recognize that transit's primary role is to provide mobility and not to improve air quality. Second, we should recognize that the co-location of households and employment in the suburbs is part of the solution rather than a problem. Third, we should consider that pricing may be the only way to reconcile mobility and environmental concerns. Pricing is the key element missing from California policy, and enormous public education efforts are required to secure its implementation.

State Senator Quentin Kopp spoke about transportation finance from the vantage point of a veteran legislator. The senator began by noting that transportation policy is often a very difficult subject for legislators and the general public to understand. The passage of legislative term limits complicates the picture as legislators with knowledge about "arcane" and complicated subjects such as transportation are termed out of office. A further complication is the high turnover among the professional staff of the various committees

responsible for transportation legislation. Senator Kopp fears that these developments may lead to less-disciplined decisions on the part of inexperienced legislators that could tear holes in regional transportation policy. There is also likely to be less willingness among legislators to vote for new or higher state taxes.

The centerpiece of Senator Kopp's presentation was a discussion of Senate Bill 45 which was signed by the Governor last year. Prior to passage of SB 45 the State Transportation Commission allocated funds according to the State Transportation Improvement Plan (STIP), which was based on recommendations from regional transportation agencies. Under the bill, 75 percent of all transportation funds are given directly to regional transportation agencies with the remaining 25 percent to be used for statewide and interregional projects. SB 45 substantially changes the way state transportation funds are distributed by shortening the time horizon of the STIP and by allowing more flexibility in the use of funds for regional projects. The senator believes that SB 45 represents a focal point for the future of transportation finance and decision-making. SB 45 brings the process closer geographically to the voter. The senator believes that the voting public is very skeptical of government spending, which helps explain the trend towards plebiscitary budgeting. In the future, Senator Kopp sees greater use of local taxes for transportation, including sales taxes, general obligation bonds, and regional gas taxes.

DISCUSSION

Several issues were raised during the discussion. One attendee asked Senator Kopp for advice on how to convince the Legislature that it needs to raise more revenues. The senator noted that the issue was one of public relations. He raised the possibility of inviting legislators to a summit where all the alternatives could be placed on the table. Mr. Graymer asked the panel whether a user-based finance system wouldn't be preferable to relying on sales taxes because it could influence transportation demand. Senator Kopp noted that sales taxes appeal to legislators because of their broad base and because they believe that a general tax is an appropriate means to support public transportation. The senator went on to note that current Attorney General Bill Lockyer's departure from the Senate removed an obstacle to implementation of congestion pricing proposals.

The panel was asked whether we might better achieve our policy goals, and get at the root of our problems, if we were to use transportation money for non-transportation uses. Dr. Jones responded that reinvestment in central cities has emotional appeal but it does not produce concrete transportation results. Senator Kopp mentioned that there was already a paucity of money for transit and transit projects. Professor Citrin noted that because revenues lagged behind needs, each budget sector tries to hold on to their share of revenues, which makes more flexible use of revenues far more difficult. Finally, Dr. Jones was asked about the continuing public support for transit in spite of declining ridership trends. He stressed three reasons for this apparent disconnect: the hope that it would get other motorists off the road, a belief that transit helps the environment, and the hope that a better transit system would prove useful to them.

SESSION 9: FINANCING THE FUTURE: SETTING AN AGENDA FOR THE NEXT DECADE

Moderator: **Brian Taylor**
José Gómez-Ibáñez, Professor, Kennedy School of Government and Graduate School of Design, Harvard University
Steve Heminger, Manager of Legislation and Public Affairs, Metropolitan Transportation Commission
Mark Brucker, Transportation Planning Coordinator, US Environmental Protection Agency

Given the demographic, fiscal, technological, and political trends discussed in the previous sessions, this closing session explored what the future holds for transportation. Presenters spoke about the feasibility of different transportation finance options and likely directions for the near future.

José Gómez-Ibáñez reflected on the previous presentations and spoke about challenges to reforming the transportation finance system. He noted that our transportation finance mechanisms have two general functions: 1) to raise revenue and 2) to alter behavior and improve efficiency. He argued that the hidden theme of the conference was the link between these two functions. He believes that we have been trying to use the need to raise revenues as political cover to modify behavior, but that such an approach is unlikely to succeed given public opposition to increasing taxes. In his view, policymakers and the larger public will have to be sold directly on the idea of using finance instruments to alter behavior.

Professor Gómez-Ibáñez also challenged the notion that an increase in revenues is needed. Rather, he argued that the public's reluctance to raise taxes is sensible because they do not perceive the transportation system as having any serious needs. There is no reason, he believes, to maintain revenues at the historically high levels of the 1950s since the task of constructing the highway system is largely complete, and the principal need for revenues now is for system maintenance. Drawing on historical evidence, Professor Gómez-Ibáñez suggested that the voters would likely consent to higher taxes if there was a demonstrable need for additional revenues and assurances that the benefits would go to those who pay. Further, he maintained that local variation in transportation needs means that reliance on county sales taxes for transportation funding makes some sense in terms of linking charges to users. As for altering behavior through the transportation finance system, he argued that trying to do so will be quite difficult given the findings Professor Deakin presented earlier in the conference suggesting that large increases in user fees would be required to produce even small changes in travel behavior. Given public sentiment, such increases are clearly not coming in the foreseeable future, although he suggested that more targeted increases might be feasible.

Professor Gómez-Ibáñez ended his presentation with a few remarks about political constraints. He believes that innovative pricing approaches are likely to succeed only in places where the public can be convinced that more people will gain than will lose under

the new arrangement. He feels this explains public reluctance to implement congestion pricing other than in cases where roads are already tolled or new capacity is being provided for the motorist. In his view, there is little prospect for innovation in congestion pricing since the public does not trust that drivers will benefit from price increases. Instead, the proceeds from the gas tax should be viewed as a form of general revenue, that could be spent on other public needs. Even if the gas tax were raised as high as some have suggested, it would not even be possible to spend all of the revenue generated on transportation projects. He argues that there is more potential for improvements in paving and the implementation of a new system of truck weight-distance fees because these changes could be introduced incrementally and low mileage truckers would clearly benefit from this approach. The challenge is to make the case to this group of potential beneficiaries. One possibility would be to start by making the new system optional in order to demonstrate its superiority over the current system. Professor Gómez-Ibáñez concluded by cautioning that moving transportation finance from revenue generation to changing travel behavior will take more creative thinking.

Steve Heminger began by asking and answering four questions. First, are we due for a gas tax increase? No, he says, because it has only been eight years since the last increase as opposed to twenty years on average between increases in the past. Also, the climate in Sacramento is not right for such a step although with devolution of transportation funding responsibility there is some potential at the local level. Second, do we need more money for transportation? TEA-21 provided a 40 percent increase in transportation funds at a time when other programs are not receiving large funding increases. At the state level, the State Transportation Improvement Program (STIP) and state highway account are awash in revenues. He argued that the case for more revenues has not been made. There is no consensus in the need for capacity increases so the default position is to rely on the county sales tax model where decisions on needs are determined by what the voters will pay for. Third, what kind of product are we selling? Mr. Heminger argues that the Interstate system was a marvelous product to sell because it was enormous and because there was a clear vision behind it. In the post-Interstate era, such vision is lacking, though, perhaps, constructing a high-speed rail system could capture the public imagination to support a statewide increase in revenues. Finally, how *do* we finance the future? One view is to take the money wherever we can get it. However, many in transportation would like to simultaneously raise revenue and achieve specific policy objectives. He agreed with earlier presenters that we should deal with equity issues in terms of spending policy rather that taxation.

The second part of Mr. Heminger's presentation assessed the political feasibility of different transportation finance mechanisms (see "Arrowhead Scale" below). In his view, finance instruments such as vehicle miles traveled (VMT) fees, full cost road pricing, and pay-at-the-pump insurance have low political feasibility. In the middle range of political feasibility are gas tax indexing, value pricing of facilities such as high-occupancy/toll (HOT) lanes, and two-thirds vote-required local sales taxes. High political feasibility options include majority vote-required local sales taxes, general obligation bonds, and impact fees. Unfortunately, the policy desirability scale runs in exactly the opposite direction: the most politically feasible finance mechanisms are also the least desirable

policies. Mr. Heminger believes that we should focus on the instruments in the middle, which are politically feasible and can also be justified on policy grounds.

"Arrowhead Scale"

Political Feasibility		Policy Desirability
High	Local Sales Tax (50%) General Obligation Bonds Impact Fees	Low
Medium	Gas Tax Value Pricing (HOT lanes) Local Sales Tax (67%)	Medium
Low	VMT Fees Full-Cost Pricing (all lanes) Pay at the Pump Insurance	High

Mark Brucker offered some general remarks about the environmental consequences of different transportation finance approaches. He began by noting that changes in demographics and work and family structures make accessibility and mobility needs harder to serve. The uncertainty of the relationship between financing and needs leads to choosing projects based on "popularity contests" that may not reduce congestion and tend to undermine the credibility of the transportation planning system. He called for a return to use fees because they are related to the costs imposed, don't have the negative environmental and efficiency problems of the current system, and tend to reduce the need for transportation improvements. Mr. Brucker believes that pricing offers the only way to address efficiency, equity and environmental concerns while also being flexible. He argued that while technology gains will help in specific instances, only pricing has a direct effect by encouraging different land use patterns and by discouraging frequent longer-distance drives.

DISCUSSION

The discussion centered around three general topics: 1) the benefits provided by automobiles, 2) the potential impact of urban limit lines on encouraging people to leave their cars behind, and 3) the desirability of higher-density development. One audience member asked the panel about the potential for using the automobile as a solution to the problems posed by the demographic and social changes mentioned by several of the presenters. Professor Gómez-Ibáñez noted that the auto may play a role and that many of us have tended to dwell on the problems associated with the automobile and neglected its benefits. Another audience member asked whether the use of urban limit lines might play a role in moving people out of automobiles. Mr. Heminger argued that we are dealing with congestion through increased sprawl and that urban limit lines would cause more congestion within the boundary. He suggested that we should be honest and recognize this fact. Mr. Brucker noted that merely drawing a line would not in itself be effective; rather, a more comprehensive set of strategies such as those employed in Portland, Oregon, will be needed.

Several audience members raised the issue of whether or not people actually want to live at higher densities. A local elected official noted that he has never heard a citizen say that they wanted higher density. Professor Gómez-Ibáñez interjected that people do want backyards and trees, a sentiment which generates opposition to in-fill development. One audience member said that people would respond to the "new urbanism," but that current public policies force us to live in lower-density automobile-oriented cities. Another audience member cautioned that the key to gaining public acceptance of high-density living was to stress the advantages of higher densities. Another local elected official cautioned that along with higher density came issues of crime and higher housing costs, which made such policies less politically attractive and could potentially harm those whom they are designed to help.

APPENDIX A:

SYMPOSIUM PROGRAM

Financing the Future

October 25-27, 1998
UCLA Conference Center at Lake Arrowhead
850 Willow Creek Road
Lake Arrowhead, California

Sunday Afternoon, October 25

Day One Theme:
Planning for Social and Economic Change

The opening day focuses on the accelerating pace of social and economic change in the new millennium. The sessions explore growth and change in population, patterns of urban development, and travel behavior. They also examine how different regions in California and the Southwest are planning to finance transportation in the 21st Century, and the broader implications of these plans for travel, development, and environmental quality.

1:30 pm **FINANCING THE FUTURE: SYMPOSIUM OVERVIEW**
Introduction to the symposium and outline of themes connecting the future of transportation finance with land use and air quality policies.
Brian Taylor, Assistant Professor of Urban Planning, UCLA School of Public Policy & Social Research

2:00 pm **FORECASTING THE FUTURE: GROWTH, CHANGE, AND THE TRANSPORTATION/LAND USE CONNECTION**
The next decade is projected to bring continued and renewed population growth and demographic change, and continued expansion of our metropolitan areas -- all of which point to growing and changing patterns of travel. This session addresses the forecasted changes in population and development, and the implications of these changes for the future of both land development and the transportation system.
Moderator: ***Brian Taylor***

- **Metropolitan Population Growth and Demographic Change: Implications for Travel**

  Dowell Myers, Associate Professor, School of Policy, Planning &

Development, University of Southern California

- **The Roles of Land Use and Transportation Policy in Shaping Urban Growth and Development**
  Reid Ewing, Consulting Principal, LDR International, Columbia, Maryland

- **Societal Trends and the Future of Travel Demand**
  Sandra Rosenbloom, Professor of Planning and Director of the Drachman Institute for Land & Regional Development Studies, University of Arizona

Dialogue Among All Participants

3:30 pm Break

3:45 pm **PLANNING THE 21ST CENTURY: CHALLENGES TO TRANSPORTATION FINANCE AT THE REGIONAL LEVEL**

This session is a moderated roundtable discussion of current regional planning efforts in California, Arizona, and Nevada. Projected changes in population, employment, traffic, and emissions all pose enormous challenges to regions. Regions must balance various federal and state mandates with the diverse interests of local governments, employers, and voters on the other in effectively addressing, rather than merely accommodating changes. This session examines how various regions are responding to these challenges. Given anticipated shortages in funding, how are regions designing their system of transportation finance to meet changing uses and needs, including innovative new financing tools and mechanisms that raise revenues and/or mitigate needs?

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

Panelists:
The Honorable Ron Bates, Vice President, Southern California Association of Governments; and Mayor, City of Los Alamitos
Joanne Koegel, Acting Executive Director, Sacramento Area Council of Governments
Suzanne Sale, Chief Financial Officer, Arizona Department of Transportation
Ken Sultzer, Executive Director, San Diego Association of Governments
Kurt Weinrich, Director, Clark County Regional Transportation Commission

Dialogue Among All Participants

5:15 pm Reception

6:00 pm Dinner

Sunday Evening, October 25

7:30 pm **THE FUTURE OF TRANSPORTATION FINANCE**

This session examines how the revenue-generating capacity of transportation finance has changed in recent years, why the traditional methods of transportation finance have failed to keep pace with the growth in travel, and potential changes on the horizon. The presentation begins with an overview of the strengths and weaknesses of our current system of transportation taxation and concludes with a discussion of the opportunities and constraints to restructuring our system of transportation finance. With emphasis on California, the session focuses on principles of finance needed to develop more efficient, effective, equitable, and sustainable transportation systems in the coming decades.

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

Dialogue with Participants

9:00 pm Informal Reception and Continued Dialogue

Monday Morning, October 26

Day Two Theme:
Reconsidering Costs and Benefits in Transportation Finance

Day Two examines how the pricing of the transportation system links (or fails to link) the users of the transportation system to the costs these users impose on society. In other words, the array of transportation taxes, tolls, and fees does not simply raise revenues but affects both the use of the transportation system, the cost of operating and maintaining this system, and future needs. The morning and afternoon sessions explore current programs in congestion pricing, efforts to price emissions from mobile sources, and the pricing of trucks and other heavy vehicles to reduce road maintenance costs. The evening session considers the complex issue in pricing transportation.

7:30 am Breakfast

8:45 am **PUTTING INNOVATIVE TRANSPORTATION PRICING INTO PRACTICE: NEW TECHNIQUES, NEW APPROACHES**

Charging users of the transportation system for all of the costs they impose on that system and society-at-large has been the economist's panacea for all that ails the transportation system for decades. Gradually, transportation pricing has moved from abstract theory to concrete practice. Progress has been slow and halting but the technical and institutional barriers to pricing continue to fall. This session explores the realistic prospects for using pricing to both produce steady revenue and increase transportation system efficiency.

Moderator: ***Martin Wachs***

- **Recent Developments in Pricing Transportation**
  Robert Poole, President, The Reason Foundation

- **Update on the Implementation of Congestion Pricing**
  Thomas Keane, Economist, Office of Policy Development, Federal Highway Administration, Washington, D.C.

- **Options for Pricing VMT Travel in California**
  Reza Navai, Research Manager, Transportation Planning Program, California Department of Transportation

- **"Quick Hits": Congestion Pricing in Practice**
  Craig Scott, Manager of Transportation Finance, San Diego Association of Governments
  Edward C. Sullivan, Professor and Chair, Civil & Environmental Engineering Department, California Polytechnic University, San Luis Obispo

Dialogue Among All Participants

10:30 am Break

10:45 am **DEVELOPING MORE EFFECTIVE LINKS BETWEEN TRANSPORTATION FINANCE AND AIR QUALITY IMPROVEMENTS**

As air quality planning broadens to include more market-based and price-incentive strategies, it is timely to examine cases where these finance incentives/disincentives have been developed and in some cases actually been employed. The session addresses ways that fuel taxes, vehicle fees, tolls and other pricing strategies could be constructed or have been tested, in an effort to more closely link the costs paid by users to the mobile emissions they generate.

Moderator: ***Jim Ortner,*** *Manager of Technical Services, Orange County Transportation Authority*

- **Pricing Mobile Emissions: Problems and Prospects**
  Elizabeth Deakin, Associate Professor, Department of City & Regional Planning, UC Berkeley

- **Improving Air Quality through Transportation Finance Strategies**
  John D. Dunlap III, Chair, California Air Resources Board
  The Honorable Greg Harper, Chair, Bay Area Air Quality Management District; and Councilmember, City of Emeryville
  Roland Hwang, Transportation Program Director, Union of Concerned Scientists

Dialogue Among All Participants

12:15 pm Lunch

Monday Afternoon, October 26

1:30 pm **HEAVY VEHICLES, ROAD WEAR, AND USER FEES**

Dramatic increases in goods movement by truck are projected for the coming decades. Efficiently and equitably financing the transportation infrastructure improvements needed to accommodate projected growth in trucked goods requires a clear link between use and pricing. How much wear and tear heavy vehicles impose on the road system, and how much trucks and other heavy vehicles should pay for this wear and tear has been hotly debated in both Sacramento and Washington for decades. But recent studies of road wear by heavy vehicles and new technologies offer new possibilities to fairly and comprehensively level charges to heavy vehicles in proportion to the wear and tear they cause. This session explores the relationship between heavy vehicle pricing and road wear.
Moderator: ***Catherine Wasikowski,*** *Executive Director, RIDES for Bay Area Commuters*

- **Road Damage and Pricing: The Critical Link**
  Kenneth Small, Professor, Department of Economics, UC Irvine

- **Opportunities to Use New Technologies to Price Trucking**
  Daniel Malick, International Transportation Finance Advisor

Comments:
Anne O'Ryan, Manager of Government & Public Affairs, American Automobile Association - Oregon/Idaho
Kenneth Simonson, Former Chief Economist, American Trucking Association

Dialogue Among All Participants

3:00 pm Free time

5:00 pm Reception
6:00 pm Dinner

Monday Evening, October 26

7:30 pm **My Fair Share: Equity and the Transportation/ Land Use/Air Quality Connection**

Proposed changes to the existing system of transportation finance inevitably raise questions of fairness and equity. But equity is very much in the eye of the beholder, and depends greatly on whether one measures equity with respect to

individuals, groups, or places. This session examines the question of transportation equity through three presentations.
Moderator: ***Brian Taylor***

- **Unjust Equity:**
  Confounding Notions of Equity in Transportation Finance
  Brian Taylor, **UCLA**

- **Reconciling Efficiency and Equity in Transportation Finance*Donald Shoup***, Professor, UCLA School of Public Policy and Social Research

- **Transportation Finance and Social Justice**
  Robert Garcia, Senior Attorney, Environmental Defense Fund

Comments:
Michael Cameron, Economic Analyst, Environmental Defense Fund
Martine Micozzi, Special Assistant to Deputy Administrator, Federal Highway Administration

Dialogue Among All Participants

9:00 pm Informal Reception/Continued Dialogue

Tuesday Morning, October 27

Day Three Theme:
Linking Politics, Pricing, and Revenues in Transportation Finance

These final sessions address the realities of voter attitudes and the political process against the issues of growth and change explored on Day One, and the principles of transportation system finance examined on Day Two. What are the opportunities and constraints to restructuring our system of transportation finance, especially when matters of public finance are being increasingly put to the electorate?

7:30 am Breakfast

8:45 am **HOW WILL IT PLAY IN PEORIA? (OR MONROVIA? OR MILPITAS?): WHAT DO VOTERS WANT AND WHAT ARE THEY WILLING TO PAY FOR?**
Legislatures increasingly loathe to raise taxes or fees of any sort. And funding for the transportation system is increasingly decided on a project-by-project basis by state and local voters. How do voters view the transportation system and its finance? What projects are voters likely to support and which are they likely to oppose? Is congestion the principal concern, or is the electorate willing to pay more for things like seismic safety or emissions reductions as well? How is the political landscape changed by SB 45 and TEA-21? This session explores patterns

of voter behavior, projected changes in voter demographics, and ideas on structuring transportation finance based on voter preferences regarding transportation, land use, and air quality.
Moderator: ***LeRoy Graymer,*** *Founding Director, UCLA Extension Public Policy Program*

- **Demographic Change and Voting Behavior: The Evolving California Electorate**
  Jack Citrin, Professor, Department of Political Science, UC Berkeley

- **Voting with Their Cars: Voter Attitudes toward the Transportation System**
  David Jones, Transportation Consultant, Berkeley, California

- **Taxing for Transportation: The View from Sacramento**
  The Honorable Quentin Kopp, California State Senator and Chair, Senate Transportation Committee

Dialogue Among All Participants

10:15 am Break

10:30 am **FINANCING THE FUTURE: SETTING AN AGENDA FOR THE NEXT DECADE**
Given the demographic, fiscal, technological, and political trends discussed over the past two days, what does the future hold for transportation finance? Are efforts to variably price cars and trucks likely to wax and wane? What opportunities and constraints are offered by TEA-21, the recently reauthorized federal transportation legislation? What should be on the agenda for analysts and policy makers interested in improving our system of transportation finance? And what opportunities really exist for meaningful reform?
*Moderator****: Brian Taylor***

- **Running on Empty: The Challenges to Reforming Our System of Transportation Finance**
  Jose Gómez-Ibáñez, Professor, Kennedy School of Government and Graduate School of Design, Harvard University

Comments:
Steve Heminger, Manager of Legislation and Public Affairs, Metropolitan Transportation Commission
Mark Brucker, *Transportation Planning Coordinator, U.S. Environmental Protection Agency, Region 9*

Dialogue Among All Participants

12:00 noon Concluding Lunch and Steering Committee Meeting

APPENDIX B:

SPEAKER BIOGRAPHIES

Honorable Ron Bates is the Mayor of the City of Los Alamitos, California. He is also President of the League of California Cities, an agency that represents more than 470 cities in statewide legislative matters affecting them, and that is involved in the education and training of Mayors, Councilmembers, and City staff. He also serves as second Vice President of the Southern California Association of Governments (SCAG), and previously completed three years on their Transportation and Communications Committee. He manages his own financial consulting agency and has served as a City Manager in Buena Park, Assistant Manager in Anaheim, and Assistant Director of the Orange County General Services Agency.

Michael Cameron is an Economist and Transportation Program Manager for the Environmental Defense Fund in Oakland, California. He has authored the EDF's 1994 study entitled, *Efficiency and Fairness on the Road: Strategies for Unsnarling Traffic in Southern California,* and a 1991 study *Transportation Efficiency: Tackling Southern California's Air Pollution Congestion.* Previously, he worked for the U.S. Senate, Special Committee on Investigations of the Select Committee on Indian Affairs, and the Office of Financial Management for the State of Washington.

Jack Citrin is Professor of Political Science at the University of California, Berkeley, and is an active member in the Institute of Government Studies. His research and teaching has included subjects such as public opinion surveys on voting attitudes and behavior, political psychology, ethnicity and political conflict, the American national government, and California politics and fiscal reform. Professor Citrin is well published having authored and co-authored numerous articles and books on a range of topics including, *The Politics of Disaffection Among British University Students,* and *Tax Revolt: Something For Nothing In California.* He has also participated in and played a key role in planning for the American National Election Studies as part of the National Science Foundation.

John Dunlap, III is Chairman of the California Air Resources Board (ARB). The ARB is a branch of the California Environmental Protection Agency charged with promoting and protecting public health, welfare, and ecological resources through effective reduction of air pollutants, while recognizing and considering effects on the economy. Prior to being appointed to the ARB, Chairman Dunlap served two years as Chief Deputy Director for the California Department of Toxic Substances Control, where he was responsible for all the department's pollution prevention, technology development, and external affairs program. He also served at the South Coast Air Quality Management District in Southern California.

Reid Ewing is a Consulting Principal for LDR International Inc., a Columbia, Maryland based urban planning and design firm. Mr. Ewing has authored two books for the Florida State Planning Agency entitled, *Best Development Practices,* and his most recent publication *Transportation Land Use Innovations.* Both books were written to put a more positive spin on Florida's growth management program. His current projects include serving as a trainer for the National Transit Institute's training course on Coordinating Land Use and Transportation, and working as the lead technical consultant for the Federal Highway Administration's Traffic Calming State-of-the-Art Initiative.

Joanne Freilich (Symposium Co-Coordinator) is Acting 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.

Robert Garcia is Senior Attorney with the Environmental Defense Fund (EDF) and directs its Environmental Justice Initiative (EJ LA) in Los Angeles. The EJ LA Initiative actively supports the prevention and redressing of environmental problems that adversely affect communities of color and low-income communities within the urban poverty core. Mr. Garcia was also one of the lead attorneys in the historic civil right class action Labor/Community Strategy Center v. Los Angeles Metropolitan Transportation Authority; a case settled through a court ordered consent decree in which the MTA agreed to invest over one billion dollars on the bus system over the next 10 years. Previously, Mr. Garcia worked as a Western Regional Counsel for the NAACP Legal Defense & Educational Fund, Inc.

Jose Gomez-Ibanez is the Derek C. Bok Professor of Public Policy and Urban Planning at Harvard University, where he holds a joint appointment at the John F. Kennedy School of Government and the Graduate School of Design. He teaches courses in economics, infrastructure and transportation planning in both schools. Professor Gomez-Ibanez has published numerous articles on transportation and land use planning and has co-authored several books including *Regulation for Revenue: The Political Economy of Land Use Exactions* (Brookings, 1993); *and Going Private: The International Experience with Transport Privatization* (Brookings, 1993). Previously, Professor Gomez-Ibanez served as a consultant and advisor to U.S and other government agencies, served as senior staff economist to the President's Council of Economic Advisors and has chaired and served on numerous advisory panels.

LeRoy Graymer (Symposium Co-Coordinator) is Founding Director of the Public Policy Program at UCLA Extension, which he established in 1979. The program addresses public policy issues of state, national and international importance through numerous conferences, seminars, workshops, and facilitation activities. Dr. 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. Professor Graymer's most recent work includes a special research project for the California Policy Seminar on California political reform options.

Greg Harper is Chairman and Director of the Bay Area Air Quality Management District and oversees the air quality of nine Bay Area counties. He is a Councilmember for the City of Emeryville, and serves on the Emeryville Planning Commission. Mr. Harper is also a Councilmember for the Alameda County Housing Authority and Boardmember for the Alameda Congestion Agency. He was recently appointed to the Bay Area Water Transit Blue Ribbon Task Force, charged by the State of California to determine the feasibility and nature of a comprehensive ferry transit system for the San Francisco Bay area. In addition, Mr. Harper serves as Principal of Harper & Associates, a law firm specializing in business counseling, land use, environmental law, and public process.

Steve Heminger is Manager of Legislation and Public Affairs for the Metropolitan Transportation Commission (MTC), a regional transportation, planning and finance agency in the San Francisco Bay Area. He is primarily responsible for directing MTC's state and federal legislative advocacy

as well as its public outreach and information activities. Currently, he is also a member of the Board of Directors for Californians for Better Transportation, and the California Council of Governments Directors Association. He has served as Vice President of Transportation for the Bay Area Council, a regional public policy group, and as a staff assistant for the California State Legislature and U.S. Congress.

Roland Hwang is Director of the Transportation Program for the Union of Concerned Scientists (UCS) in Berkeley, California. UCS is an independent, non-profit organization dedicated to advancing responsible public policies in areas where technology plays a critical role. UCS is currently working to encourage a responsible stewardship of the global environment and life sustaining resources; promote energy technologies that are renewable, safe and cost effective; reform transportation policy, and curtail weapons proliferation. Mr. Hwang has authored or co-authored a number of UCS publications including, *An Equity Analysis of Pay-As-You-Drive Automobile Insurance in California, Driving out Pollution: The Benefits of Electric Vehicles,* and *Money Down the Pipeline: Uncovering the Hidden Subsidies to the Oil Industry,* among others. Mr. Hwang previously worked for the U.S. Department of Energy-Lawrence Berkeley Laboratory, and for the California Air Resources Board.

David Jones is a consultant specializing in strategic planning, corridor planning, and the use of consumer-oriented performance measures for metropolitan transportation system analysis. Previously, he served as a member of the research staff at the Institute for Transportation Studies at UC Berkeley. His published research includes a history of freeway development in California, a history of the Interstate Highway Program, and a history of mass transit in the United States. Dr. Jones' recent work includes a study of "Intermodal Performance Measures for the Bay Area Transportation System," published by the Metropolitan Transportation Commission.

Honorable Quentin Kopp is a California State Senator. He serves on numerous legislative committees including, Transportation (Chair), Budget and the Fiscal Review, and Budget Subcommittee #2 (Chairman of housing and land use, local government, and revenue taxation). Senator Kopp also serves as ex-officio member of the California Transportation Commission, is a practicing trial lawyer and Senior Partner in the firm of Kopp & DiFranco, and has sat on numerous local governmental policy making bodies affecting the Bay Area.

Thomas Keane is an Economist for the Federal Highway Administration's (FHWA) Office of Policy Development and is responsible for a variety of travel demand management (TDM) policy initiatives. He serves as the Project Manager for the Congestion Pricing Policy Program, is Editor of the Program's newsletter and is as a member of the Transport Research Board TDM Committee and Subcommittee for Pricing. Mr. Keane has worked on various Federal transportation finance issues such as developing the FHWA proposal for apportioning Federal-aid highway funds to the states under TEA-21, and modifying the U.S. Tax Code to allow nationwide implementation of Voluntary Parking CashOut.

Joanne Koegel is the Interim Executive Director for the Sacramento Area Council of Governments (SACOG), a multi-jurisdictional agency focusing on regional issues and planning, as well as the operation of the call box and rideshare programs. The SACOG planning area includes 19 local governments as members and two regional transportation planning agencies as non-members. Previously, Ms. Koegel held numerous transportation planning roles in the agency.

Daniel Malick is an International Transportation and Finance Advisor. He is an executive and management expert in the field of policy, financial, and administrative system development for public infrastructure development agencies. Currently, he serves as Director of the Federal

Highway Administration's (FHWA) Moscow Mission, where he leads institutional development experts of America, both public and private, in a broad range of technical assistance projects throughout all functional areas of international surface transportation policy. Mr. Malick is primarily responsible for the formulation of programs assisting the Russian Federal Highway Department in its efforts to implement major reforms to funding management, and contracting of highway projects across Russia.

Martine Micozzi is Special Assistant to Deputy Administrator Gloria Jeff of the Federal Highway Administration in Washington D.C. Previously, she worked in transportation demand management with the UCLA Ridesharing Program, was the Commuter Services Manager for the City of Anaheim, California and was a consultant with Crain and Associates. Ms. Micozzi also founded her own consulting firm, "Transportation Solutions," worked for the Office of the Secretary of Transportation, the U.S. House of Representatives, the Federal Transit Administration and was Project Manager for the San Diego Congestion Pricing Pilot Project. She was a founding member of the Orange County Chapter of the Woman's Transportation Seminars (WTS), and currently serves on the WTS Board of Directors.

Dowell Myers is Associate Professor of urban planning and demography at the USC School of Policy, Planning and Development. His program of research has pursued two contributions to the planning field: (1) bringing people back in as the focus of planning success; and (2) understanding planning as a temporal process of development in time. Recent research projects have focused on the upward mobility of immigrants to Southern California and the many changes they create in the city, as well as projections for the future of the California population. Dr. Myers is the author of *Analysis with Local Census Data: Portraits of Change* (New York: Academic Press, 1992) and he also serves on the Professional Advisory Committee of the Bureau of the Census. Most recently, Dr. Myers authored the chapter on population analysis for the newest edition of the ICMA Greenbook.

Reza Navai is Research Manager for the Transportation Planning Program at the California Transportation Department (Caltrans). Previously, he held positions as Chief of Energy and New Technology Branch, and Air Quality Planning Branch at Caltrans. He served as visiting assistant professor in the Department of Community and Regional Planning at Iowa State University and as instructor in the Department of Urban Planning and Design at the University of Washington. His research and policy analysis work includes transportation financing and pricing, transportation systems operations, alternative fuel and transportation technology, and land use-transportation models, planning theory, and methods.

James Ortner is Manager of Transit Technical Services for the Orange County Transportation Authority (OCTA) where he manages air quality issues. Dr. Ortner and his staff are responsible for developing specifications and ordering new buses, ensuring quality assurance on the operating bus fleet and identifying, testing and installing new technology on the operating bus fleet. Dr. Ortner is also the Program Manager for Metrolink's (regional commuter rail operator in Southern California) Low Emission Locomotive Program. This program will demonstrate use of liquefied natural gas as a locomotive fuel to significantly reduce emissions. Dr. Ortner is an adjunct Associate Professor in the USC School of Public Policy and serves on the Research Screening Committee of the California Air Resources Board.

Anne O'Ryan is Manager of Government and Public Relations for the AAA Oregon/Idaho and company spokesperson overseeing policy development, legislative analysis, and the Club's two-state lobbying efforts. Ms. O'Ryan also works as editor for the AAA members' publication and co-chairs the AAA Western Conference Legislative Committee. Previously, she served as Vice-

President and member for the Oregon Highway User's Conference. She has also represented the Chairman of the AAA National Board of Directors on the Oregon Transportation Commission's Blue Ribbon Task Force on Weight-Mile Taxes, and worked as the only "motorist" representative for the Portland Metropolitan Planning Organization where she served on the Citizen's Advisory Committee developing the Metro's 2020 Regional Transportation Plan.

Robert Poole is founder and President of the Reason Foundation, a national public policy think tank based in Los Angeles. Mr. Poole has been an advisor to the Federal Highway Administration, the Federal Transit Administration, the White House Office of Policy Development, California Transportation Department (Caltrans) and was a member of California's Commission on Transportation Investment. He served on the Caltrans Privatization Advisory Steering Committee, helping to oversee the implementation of AB 680, California's landmark private tollway law, that was inspired by a policy paper he authored. He has served on several transportation advisory bodies to the California Air Resources Board, the Southern California Association of Governments, and most recently as a member of SCAG's REACH Task Force on highway pricing measures. Mr. Poole has authored numerous policy studies and journal articles on transportation issues.

Sandra Rosenbloom is Director of the Roy P. Drachman Institute for Land and Regional Development Studies at the University of Arizona and a Professor of Planning where she teaches courses in public finance and transportation planning. Dr. Rosenbloom's research focuses on the travel implications of demographic changes in society, particularly the aging of the population and the growth of households headed by employed mothers. Her work stresses society's need to realistically identify and plan for changes in the way women and their families respond to the complex constraints they face. Her current research analyzes how older drivers compensate for the loss of driving skills and then identifies the implications of such compensatory measures on their mobility and quality of life. She recently completed a study on accessible transit options for travelers with disabilities in Australia. Dr. Rosenbloom sits on numerous boards and serves as a consultant to the American Association of Retired Persons (AARP).

Suzanne Sale is Chief Financial Officer for the Arizona Department of Transportation (ADOT), and oversees the agency's Financial Management Services (FMS). FMS provides a full range of financial planning and accounting services for ADOT. In her 22 years with ADOT, Ms. Sale has held positions as an Economist, the Manager of the Resource Management Group, and Deputy Director for Special Assistance for Strategic Management for the Administrative Services Division. She is an active member of the Transportation Research Board's Taxation and Finance Committee, and the Management and Productivity Committee. Ms. Sale has served as a Project Management Officer for the Industrial Development Organization of the United Nations in Vienna, Austria, and as a Program Manager for the National Science Foundation in Washington, D.C.

Craig Scott is Manager of Transportation Finance for the San Diego Association of Governments (SANDAG). In his twenty years with SANDAG, Mr. Scott has been involved in a wide variety of transportation planning efforts including, serving as Project Manager for the development of SANDAG's successful _% local sales tax measure-known as the TransNet Program. He also administers various local, state, and federal transportation funding programs for SANDAG, and coordinates financial planning activities for the long-range Regional Transportation Plan and the TransNet Plan of Finance. Mr. Scott also serves as Moderator of the statewide Regional Transportation Planning Agencies (RTPA) group. Previously, he was a transit planner for Tri-Met in Portland, Oregon.

Donald Shoup is chair of the Department of Urban Planning and Director of the Institute of Transportation Studies at UCLA. His resent research focused on parking as a neglected link

between transportation and land use. He teaches courses in public finance, the economics of planning, quantitative methods, and program evaluation.

Kenneth Simonson is Senior Economic Advisor in the Office of Advocacy, U.S. Small Business Administration. Previously, he spent 13 years as Vice President and Chief Economist of the American Trucking Association, where he was in charge of federal tax policy. He has also worked on tax and economic policy for the President's Commission on Industrial Competitiveness, U.S. Chamber of Commerce, and Norman B. Ture, Inc. He is author of eight booklets on tax issues and numerous testimonies and articles, including an article in Tax Notes on weight-distance taxes.

Kenneth Small is Professor of Economics for the University of California, Irvine, where he specializes in urban and transportation economics. He is the author of *Urban Transportation Economics*, and co-author of *Road Work*, published by the Brookings Institute. Professor Small served five years as North American co-editor of the journal *Urban Studies*, and is on several editorial boards. He has advised various governmental organizations including the Canadian royal commission, the European Union, and the World Bank. He recently served on a committee of the Transportation Research Board advising the Federal Highway Administration on its cost allocation study. Previously, he served as Associate Dean of Social Sciences and Chair of Economics.

Edward Sullivan is Professor of Civil and Environmental Engineering at Cal Poly State University in San Luis Obispo, California where he teaches transportation engineering and planning, traffic engineering, and engineering design courses. Previously he was a research engineer with the Institute of Transportation Studies, University of California, Berkeley, and an instructor for the Berkeley Civil Engineering Department. At both universities, Professor Sullivan served as a principal investigator and researcher on numerous projects for Caltrans, the federal D.O.T and the U.S. Forest Service, among others. Most recently, he served as principal investigator for the federal/Caltrans-sponsored study to monitor the impacts of the State Route 91 variable-toll express lanes in Orange County.

Kenneth Sulzer is Executive Director of the San Diego Association of Governments (SANDAG), and Chief Executive Officer of SourcePoint, a non profit public benefit organization chartered by SANDAG. Previously, Mr. Sulzer served as Deputy Director for Planning and Program Coordination for the County of San Diego. He has held previous positions as Urban Planner and Director for District Planning at the National Capital Planning Commission in Washington, D.C. and Senior Project Planner for the Boston Redevelopment Authority. Mr. Sulzer is a past and current board member of numerous councils and planning organizations.

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

Kurt Weinrich is the Director of the Regional Transportation Commission of Clark County, Nevada. He managed the creation, and subsequent expansions of the first public transit system in Clark County, and oversees a regional transportation planning and highway-funding program. He previously held various positions as traffic engineer, city engineer and director of public works for municipalities in three states. Mr. Weinrich is a professional engineer registered in Nevada, Ohio and Illinois

Catherine L. Wasikowski is Executive Director of RIDES for Bay Area Commuters, Inc., a nonprofit organization that provides San Francisco Bay Area Commuters with free information and assistance in using alternatives to driving alone. Prior to joining RIDES, she was Director of Transportation Programs for the South Coast Air Quality Management District in Diamond Bar, California. She also served as Vice President of Transportation Management Services, a private TDM consulting firm in Pasadena, California and as a transportation systems management specialist for the Orange County Transit District in Garden Grove. She has worked extensively in partnership with private and public sector employers, transportation management organizations, TDM professionals and the Southern California Association of Governments. Her experience includes overseeing development, revision and implementation of mobile source regulations, indirect source rules and transportation control measures.

APPENDIX C:
PARTICIPANT ROSTER

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