PRESENTATION OF RESOURCE PAPERS AND KEY ISSUES

State-of-the-Practice, Driving Forces, and Demographics

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It is a pleasure to have the opportunity to summarize the first three resource papers: *State-of-Practice of TDM* by Michael D. Meyer, Sarah Siwek, and Wayne Berman; *Driving Forces That Have Shaped TDM* by Tad Widby; and *Demographics and Market Definition* by Brad Edmondson. I think these three papers do an excellent job of setting the context for the more detailed discussions that will occur in the working groups over the next two days.

I would like to start with Tad Widby's paper which examines the driving forces behind TDM programs. He uses four categories—regulations, economic forces of employers, individual behavior, and demographics and land use—to describe the key factors that have shaped TDM strategies. He notes that the two major regulatory issues behind most TDM efforts are a result of concerns over severe traffic congestion and non-attainment of air quality standards. Both of these issues are exerting pressure on many areas to implement a variety of TDM measures.

A number of economic forces affecting employers may also motivate the use of TDM programs. These factors include zoning ordinances, uniform building codes, working conditions and employee benefit packages, and other related elements. In this environment, TDM programs may be used to support employee recruitment and employee retention. In some cases TDM may be used as part of a relocation package or to reduce costs for the employer. For example, TDM programs may be promoted by employers to reduce the cost of building new parking facilities or other improvements.

Individuals are also responding to a wide range of social, economic, and environmental factors. We are well aware of the preference for the automobile across the country. Demographics and land use represent the last category of forces behind TDM identified by Widby. These are structuring agents which help segregate activities and different population segments.

Widby describes TDM in the context of asset management. This suggests that there can be productivity improvements and innovations, but that there will not be any wholesale changes in these forces. Thus, he cautions against painting too rosy a picture for TDM.

The paper provides a good summary of the different federal, state, and local legislation and policies that have influenced the development of TDM programs. At the federal level, the National Environmental Policy Act of 1970 and the Clean Air Act of 1970 helped establish the initial course for TDM by identifying air quality non-attainment areas and requiring transportation control plans. More recent amendments to these acts and the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 further strengthen many of these provisions. The Energy Tax Act was also important in that it established tax credits for employers investing in vanpool programs.

At the state level, Widby notes that a number of states have passed legislation relating to requirements for planning, implementing, and evaluating TDM programs, state tax credits for TDM activities, and trip reduction regulations. Many local governments have developed similar programs and policies to address specific concerns.

The paper suggests that the ISTEA and the 1990 Clean Air Act Amendments institutionalize TDM. The flexible funding offered by the ISTEA, as well as the new requirements, all support TDM activities. The paper stresses that TDM alone can not address all the congestion and environmental issues facing many areas, however. Thus, expectations for TDM programs need to be realistic.

The paper concludes by raising a number of questions related to the future of TDM. The first of these addresses the need for a better analytical basis for estimating the expected results of different TDM strategies. The second examines how many programs are developed based on the hope that the desired results will in fact occur. The third considers what would happen to TDM programs if air

quality concerns were not a driving force. The last set of questions relates to potential alternative future directions if TDM measures are successful and also if they are not successful.

I would next like to summarize the paper by Brad Edmondson on the demographic and market factors that may influence TDM. The paper begins with an overview of recent trends in commuting. These include the increased use of single-occupant vehicles from 1980 to 1990 and the corresponding decrease in rideshare modes. This is occurring at a time when the number of jobs increased by some 19 million; accounting for an increase of approximately 22 million more drivers.

The paper includes a number of graphics that illustrate the percentage of the population within geographic regions that drive alone to work. The trends indicate that single occupant vehicle use increased faster where it was already high and in areas of rapid economic growth. There are many factors contributing to the increase in drive-alone commuters. These include the increase in multiple function commutes, the increase in women in the work force, and changes in lifestyles. For example, he notes that one of the most rapid increases in single-occupant commuters was among mothers with pre-school children.

The paper also discusses the impact of demographic trends on commuting patterns. For example, the largest increase in vehicle miles of travel (VMT) between 1983 and 1990 was in the 16 to 19 year old age group. Older individuals are also driving more. Between 1983 and 1990 VMT for males over 65 increased by 27 percent and VMT for females over 65 increased by 44 percent. At the same time the low income population—which traditionally has relied heavily on public transportation—increased, but their use of transit decreased.

Edmondson notes that Americans appear to be more environmentally conscious today, with some 70 percent of the population describing themselves as environmentalists. This does not necessarily translate into concern over changing driving habits, however. Changing commute habits is often ranked low in terms of environmentally friendly actions that individuals would take. He stresses that the more complex patterns of commuting in the 1990s reflect a more complex society, where individual demographic and lifestyle choices are far more powerful determinants of behavior than group or institutional affiliations.

He also describes recent changes in employment and how these changes are affecting travel. Some of the trends discussed in the paper include the continued growth of new jobs in suburban areas, the changing nature of employment from manufacturing to service-based, greater use of staggered and flexible work hours, split-shift parents, two job households, and two job workers. All of these trends have resulted in a greater dispersion of commuter traffic—both geographically and in time.

Edmondson briefly discusses recent trends in home-based work and different types of telecommuting, which are described in more detail in other resource papers. Estimates are that approximately 20 million to 39 million Americans currently work at home. Most of these are manufacturing or service jobs and 25 percent of these are self-employed individuals.

The paper concludes with a summary of the factors that appear to be working against greater use of high-occupancy commute modes, as well as the trends that may support HOV use. Most of the demographic and geographic trends are working against ridesharing and transit. The dispersion of both the population and jobs, along with trends toward more diverse work shifts, erratic schedules, smaller offices, and multiple-stop commute trips are not conducive to increasing the use of high-occupancy modes. On the other hand, there are a few trends that may encourage greater use of transit. Since mobility usually declines with age, the increase in the population in the 45 and older age group may result in more stable communities, longer job tenure, and more predictable daily routines. If this occurs, many of the programs now being implemented could be effective for a long period of time.

The last paper is the *State-of-Practice of Transportation Demand Management* by Michael D. Meyer, Sarah Siwek, and Wayne Berman. The authors note that TDM programs are being implemented and evaluated at all levels of government, in private industry, and at different points in the transportation planning and program development process. Provisions in the ISTEA provide further incentives to the evaluation of TDM strategies in metropolitan areas.

This paper examines TDM programs in the context of travel markets and identifies some of the market characteristics that may influence the success of different strategies. Alternative TDM strategies are reviewed with respect to both geographic application and trip purpose. The geographic levels discussed include sites, subareas or corridors, and regions. The authors evaluate the TDM strategies used at these levels by trip purpose. They note that TDM programs have been most successful at the

employment site level, with fewer successful applications recorded for programs covering larger geographic areas. Thus, most TDM strategies focus on work trips. The paper also examines the various delivery methods that have been used with TDM measures. Most site specific programs focus on a single employer, while Transportation Management Associations or Organizations (TMAs/TMOs) provide the basis for subarea or corridor programs. At the regional level, metropolitan agencies are often responsible for developing and implementing TDM programs.

The authors note that the most successful TDM strategies have involved a mix of incentives and disincentives. Financial incentives, which reduce the cost of travel, may include direct subsidies and transportation allowances. Indirect incentives could include awarding points for ridesharing which could be redeemed for merchandise or additional vacation time. Parking supply and pricing could be used as incentives or disincentives. It appears difficult to implement parking strategies on a subarea or regional level, however.

The paper discusses the importance of packaging different TDM strategies for a successful program, rather than just focusing on a single strategy. The authors raise a concern with this approach however, in that alternative strategies may be mixed without adequate consideration being given to the desired impact. They note that more analysis needs to be done on what combination of TDM strategies is most appropriate. Too often one TDM strategy after another is implemented without an overarching strategic plan.

The financing problems commonly associated with TDM programs are discussed in the paper. At the regional level, most TDM activities rely on traditional funding sources available through FHWA and FTA, while site specific programs are usually financed by private businesses. They note the need to develop strong public and private constituencies to allow TDM to successfully compete with more traditional projects in the transportation planning and project selection process.

Several barriers to the successful implementation of TDM programs are identified and discussed. These barriers generally fall into the three areas of motivation, empowerment, and perceptions. The authors further identify approaches to address and overcome these barriers. For example, since TDM necessitates change from existing behavior, there must be some motivation to achieve the desired change. This motivation usually takes the form of some benefit that participants hope to gain. A second factor for success is empowerment—which includes providing the political, organizational, technical, and financial resources necessary for a successful program. Finally, many barriers are the result of misperceptions concerning TDM measures. Communication, understanding, and compromise are key ingredients for overcoming these misperceptions.

A case study of a county-wide TDM program in the Los Angeles area is also summarized. This case study illustrates the use of multiple delivery systems, multiple funding sources, and the packaging of demand management strategies. It also points out the importance of building a political constituency for TDM and the need to use a variety of financing methods. Finally, the case study illustrates the lack of evaluation funds typical of most TDM projects.

The paper concludes with a series of recommendations for additional research. Suggested issues for further study include identifying and assessing TDM packages of alternatives for application at the subarea and corridor level and on a wider regional level. The need for more detailed evaluations of case study examples is also noted. Examining TDM applications for non-work trips, especially in tourist areas, represents another research topic. Other recommendations for further research include examining alternative funding sources, conducting longitudinal studies of trip reduction programs in the air quality non-attainment areas, and further market research to better understand travel behavior.

State-of-the-Practice of Travel Demand Management

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Ms. Siwek discussed the resource paper that she co-authored with Michael Meyer and Wayne Berman. In addition to highlighting a few points from the paper, she identified some concerns related to the future of TDM. She noted that these issues reflect her experience in the public sector with planning, implementing, and evaluating TDM measures. She emphasized the paper's recommendations for research and stressed the importance of following through on these. Ms. Siwek discussed the following issues in her presentation.

- Although the ISTEA and Clean Air Act Amendments have elevated TDM into more of a key component of the transportation planning and programming process, TDM still does not appear to be considered a full