

Adequate benefit analyses of ITMS are also lacking in most jurisdictions. Evaluations of ITMS often do not go beyond simple before-and-after studies. The costs and labor required to prepare these analyses are commonly mentioned as limiting factors. This is one area where we need to do a better job in the future. The levels of automation included in ITMS should help with these evaluations. These evaluations will be needed to assist in considering future alternatives and responding to questions from decision makers.

An important function I would like to mention is providing priority to transit vehicles. This has not been given full consideration in many metropolitan areas around the country because of the adverse impacts on cross-street traffic. Through the use of traffic-adaptive control techniques, however, we should be able to enhance the operation of transit without hurting other traffic.

Traveler information represents an area that has not been exploited fully. Many areas use changeable message signs and the radio and TV media to provide information to travelers. With ATMS and ATIS, there are many new opportunities to make information available to the traveling public for pre-trip planning and in-route decisions. This is critical to really achieve the potential of ITMS.

The development and agreement among the different agencies on the traffic management strategies to be pursued is a critical step. Development of specific strategies involves resolving a number of sensitive issues relating to traffic diversion, ramp metering, incident response, accident and enforcement policies, and traveler information. Reaching an agreement on these difficult issues is critical to the development of a successful ITMS program. A traffic management matrix can be used to document these plans. Maintaining flexibility to respond to rapidly changing highway conditions during incidents is essential.

The concern about operations and maintenance has already been mentioned. This is

indeed a nationwide concern. If operating and maintaining our existing systems is a problem, just think of the problems we will face with much more complex systems in the future. The recommendations made by the FHWA panel address a number of issues in this area. These include the need for specialized ongoing training for local agency staff, additional personnel with expertise in new areas, organizational changes, and additional funding.

In conclusion, it is my view from a city perspective that we can integrate local systems with those of other agencies at the regional and state levels and still maintain adequate local control over the system. In doing this we will have to provide a greater emphasis on traffic monitoring, reach agreement among agencies on traffic management policies and approaches, implement greater automation of all needed functions, and reexamine a broader range of techniques to communicate with the traveling public. If we can do this, the pay-off will be the more efficient utilization of our roadway system at a time when we can not afford to add new highways in many metropolitan areas.

### **User Perspective**

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I have been asked to discuss the benefits of ITMS from the users' standpoint, the institutional issues that will need to be addressed, and how the general public and groups like the Auto Club can better interact with state and local governments. In order to do this, I would like to start by providing you with an idea of how ITMS is viewed from the users' perspective.

Often the highway users' perspective is being stuck in traffic behind a truck without being able to see the highway signs or anything else. Further, the users' perspective in Los Angeles is often dominated by construction activities. I was pleased to note in the white papers that construction traffic management is one of the elements of ITMS. I think that Cal-



trans has done a good job in utilizing some very effective traffic management programs. I think these are more important from a users' perspective than a few seconds saved at a traffic signal or some other program.

Ramp metering is also an element of ITMS. I have not heard many complaints from users about ramp metering in the Los Angeles area. This may be because people are starting to get used to the meters. This also holds true for the use of HOV ramp by-pass lanes and HOV facilities, although we do hear a few more complaints about these types of facilities. I think users appreciate the benefits of spacing traffic and improving the flow of traffic that these types of facilities provide. I think the user perspective also focuses on busy intersections in our urban areas.

I think safety is a very important issue for users of our roadway systems. I think we can all be proud of the progress that has been made in the area of highway safety. For example, although the annual number of fatal accidents occurring in California between 1981 and 1990

has remained relatively constant, fatalities per 100 MVMT has dropped from 3.2 to 2.0. There are a number of reasons for this, including more extensive use of seat belts, DWI programs, safer vehicles, and safer highways.

The question is, How much better can we get? I have been looking toward IVHS as one way to keep the accident rate from increasing in the future. I think it is important to look at the safety aspects of ITMS. For example, if we divert motorists away from congested freeways to avoid an incident, are we taking them from one kind of safety environment to another?

Operations and maintenance is another major issue area that users are concerned about. There is a session that will focus on this topic tomorrow. Given its importance, it may have been appropriate to have scheduled this as one of the first workshops. The Auto Club is very concerned about traffic signal operations and maintenance because it relates to both benefits and operational issues. The user bears the brunt of poor signal management and operation. The Auto Club has printed a booklet on this problem because it is such an important issue.

I would like to suggest that careful thought is warranted as we approach many of the "whiz-bang" ideas associated with IVHS and ITMS. This is especially important at a time when maintenance of any kind is coming under the gun due to limited budgets. If the loops don't work, it doesn't matter how well integrated your signal controllers are. The user is the ultimate loser in this.

Another concern I have is how we will measure the benefits of IVHS and ITMS. This is not a new issue. It has been raised regarding TDM, congestion pricing, IVHS, and other programs. The user may not comprehend what a term like "experimental design" means, and may not care. It is the user who is paying the bill for these systems, however. Thus, the user deserves some assurance that these systems and programs are providing their money's worth—that they will indeed see benefits.

I fear that many of our grand schemes are littered with speculative and unproven benefits. These are often promised without informing the users that these will be achieved only if accompanied by radical changes in travel behavior. Thus, many of these programs may be based on unrealistic expectations, because we have not shown that we can truly deliver the projected benefits. As we move forward with ITMS projects, it is important that we focus on presenting a realistic picture of the benefits of ITMS. We also need to distinguish between demonstrations, where we are simply trying to show that we can develop and operate system elements, and field experiments, where the impacts and benefits are being measured and evaluated.

I think the institutional issue that concerns me the most relates to the "B" word—bureaucracy. It is no secret that we are in an era of mistrust in government. This has been evident here in Orange County and in other parts of the country. So far, however, I think we have been fairly successful in the transportation field at keeping transportation in a good light in the public eye. For example, we have been successful in California in getting increased funding for transportation projects approved at the state and local levels. There are a number of reasons for this. The agencies that are receiving these funds are viewed as performing well. Caltrans continues to set new records in getting projects out for contracting and here in Orange County the development of the Route 55 carpool lanes was done in record time.

As new projects come on line, however, we have to be aware of numerous new issues and requirements. Both ISTEA and the Clean Air Act Amendments are spawning new programs, new regulations, new fees, new permits, and new required approvals. As we move forward with ITMS we should be careful to streamline, to coordinate, and to consolidate, rather than build weighty new governmental structures.

Over the course of the symposium, I think you will hear a number of good examples of solutions to the institutional issues associated

with ITMS. These include the Smart Corridor project, the Anaheim Traffic Management Center, and the Los Angeles Freeway Service Patrol.

There are number of other points I would like to cover relating to the need to look beyond just smart corridors to focusing on whole smart systems, the short-term tools for managing congestion offered by ITMS, and the somewhat disappointing results to date for many voluntary ridesharing and TDM programs. However, let me close by offering one final observation. Although it is important to understand the federal, state, and local perspectives, it is really the user that is the client we need to focus on. We need to pay attention to the needs and wants of the customer and how they are willing to behave. The most successful businesses are those who know their customers and meet the needs of these customers. I think ITMS has the potential to be the ultimate public/private partnership with the public providing the systems in response to the needs of the private users.