

radio systems installed in the district. In the next year, additional equipment will be installed, including 27 ramp meters, 8 changeable message signs, 19 closed-circuit television cameras, 3 highway advisory radio systems, and communications conduit on 30 directional miles. District 12 has 92.6 directional miles of HOV lanes, and 18 additional miles will be opened in the next year. The full system of 185 miles will be implemented by 2001.

A Traffic Operations Center provides the district with the capability to obtain maximum utilization of the urban highway system. In early 1990, the decision was made to set-up a Traffic Operations Center in the Caltrans District 12 facility. The center is a joint Caltrans and CHP operation, providing traffic engineering, maintenance, and law enforcement expertise. Roles for each agency were established in a joint operational policy statement. Staffing levels, equipment, and training needs were also established as well as targeted activity milestones.

District 12 opened its interim Traffic Operations Center in November 1990. The Traffic Operations Center serves as the focal point for traffic management and information for Orange County freeways, providing a rapid and coordinated response to incidents and up-to-the-minute traffic information to the media and motorists. The center is staffed with law enforcement, engineering, and maintenance personnel. It is in full operation Monday through Friday, from 5 a.m. to 7 p.m. The maintenance dispatch is in operation 24 hours a day, Monday through Friday. Current equipment and activities at the District 12 Traffic Operations Center include:

- Three dispatch areas (maintenance, traffic operations, and service patrols)
- Graphics display showing freeway status
- Modcom computer
- Changeable message sign terminal
- Automatic vehicle detector monitor
- Highway advisory radio recording studio
- Ham radio operator console
- California Highway Information Network (CHIN) system
- Media information officers

- Large screen graphics display
- Thirteen closed-circuit television monitors
- Media information terminals
- Computer workstations
- Two CHP officers per shift
- Two traffic operations engineers per shift, plus a supervisor
- Two maintenance personnel per day shift, one at night

Because of computer integration, District 12 is somewhat dependent on District 7—if the District 7 computers go down, the District 12 system would be inoperable as well. District 12 is in the process of contracting with a consultant to install an interim system that will be independent but still connected to District 7. The plan for the ultimate system is to have District 12's Traffic Operations Center integrated with the others in Southern California, but operated separately.

Sophisticated equipment and computers, the so called "bells and whistles," are important, but the most critical thing in a successful Traffic Operations Center is the cooperative attitudes of the people. The center is a reality because of the partnership with the California Highway Patrol, the maintenance personnel and engineers working together, the work with local agencies such as the cities of Anaheim, Irvine, and Santa Ana, and the support of the Orange County Transit District. As a result, the district can provide better and safer travel in Orange County.

### **ITMS Experiences in Los Angeles County**

*Dave Barnhart  
Los Angeles County  
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Institutional issues comprise approximately 80 percent of the concerns in implementing ITMS. In comparison, the technical issues usually make up roughly 20 percent. Funding is also a major concern. This afternoon, I would like to focus my comments on the development of a multi-jurisdictional coordinated traffic management system in the Los Angeles area.

This effort has been underway since 1988. I would like to discuss how the process has been organized, some of the issues encountered, and the current status of the different elements. It is important to stress the evolving nature of both the process and the system.

Coordinating the activities of the different jurisdictions and agencies involved in traffic management in the Los Angeles area is not easy. Maintaining ongoing communication among all groups and ensuring that everyone is aware of the current status of the different activities has been an important part of the process. The lack of knowledge and understanding about a project can often lead to unnecessary opposition. Thus, effective communication is critical to building strong coalitions.

The process in Los Angeles County started with the development of a multi-jurisdictional committee, called TRAFFIC, formed by the county Board of Supervisors. This group was responsible for bringing together staff representatives from the different agencies and organizations involved in traffic management. In addition, the committee had two full-time staff people from the county Public Works Department. These individuals have been instrumental in keeping the committee focused on key activities and following up with specific tasks. A consulting firm, JHK & Associates, has also performed specific activities in support of the committee. These have included both technical and institutional issues.

There are a number of examples of coordination on a project-by-project basis in the Los Angeles area. Many of them have been implemented without a great deal of publicity. However, we still need to do more, especially in a formalized manner. Furthermore, that formal approach should be developed through consensus, rather than imposing a solution from above.

Los Angeles County has approximately 9 million residents. It is a large urban county, with some 10,000 traffic signals operated by 88 different cities, Caltrans, and the county. There are also approximately 500 miles of freeways.



This is a relatively small amount given the size and population of the county. As a result, roughly 50 percent of all travel in the county is on the surface streets. The interjurisdictional coordination of traffic signals is a very important element of the overall coordination of the traffic management system. It is important to remember, however, that traffic signal coordination is just one element of ITMS.

The Los Angeles County Transportation Commission (LACTC) is a unique organization in many ways. It was created by the state of California 17 years ago as a programming and planning agency. The need for coordination was another reason for its creation. The commission programs over \$2.5 billion annually in highway, rail, and bus funding. LACTC also has its own sales tax authority. Legislation was passed this year that will merge the LACTC and the Southern California Rapid Transit District (SCRTD). The resulting agency will have responsibility for planning, programming, constructing, and operating the different modes of surface transportation in Los Angeles County.

TRAFFIC, which stands for Traffic Reduction and Free Flow Interagency Committee, is comprised of individuals from many different jurisdictions and agencies. It includes not only engineers, but also representatives from enforcement agencies, trucking associations, and automobile clubs. TRAFFIC was formed in 1988, and was organized around the three "Es:" Enforcement, Engineering, and Education. The initial focus of the committee was on coordinating low cost approaches to traffic management.

Much of TRAFFIC's work is carried out through the use of subcommittees. For example, the Engineering Subcommittee was responsible for the countywide traffic signal synchronization, operations, and maintenance program. The goal of this project was to establish the system and institutional arrangements for operating and maintaining a coordinated traffic signal system within the county. The first two elements of the program focused on consensus building and developing an implementation program. The third phase, which includes a pilot program, is just being initiated.

During the consensus building it became clear that one central approach for all 88 cities would probably not work. Therefore, the county was divided into smaller sub-regions that provide the focus for the project. There are currently 11 sub-regions in the county. A Signal Support Group was established to help with coordination and implementation. The emphasis was placed on the peak-period operation of the system. Several focus groups were held in the sub-regions as one technique for identifying and discussing issues and solutions.

One of the main issues in the second phase was determining where the Signal Support Group should be housed. The alternatives considered included both using an existing agency or creating a new agency. Other issues were the definition of the Signal Support Group and development of model interagency agreements for timing, operations, and maintenance of signal systems. Informational brochures, special meetings, and presentations were used during this phase to reconfirm the consensus. The final

decision on the Signal Support Group was that it should be a permanent staff located at the LACTC offices. LACTC was perceived as a neutral location for the Signal Support Group and the commission represents all of the agencies. The staff for this group will be hired soon.

The pilot project for phase three, which focuses on nine cities in the San Gabriel Valley, has been initiated. \$1 million in "fast start" ISTEA funding has been earmarked for this project. Now the task of the Signal Support Group is to finalize the needed interagency agreements. This pilot project is expected to provide a model for future programs.

### **IVHS Test Bed in Orange County**

*Dr. Wil Recker  
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I would like to focus most of my comments on the institutional issues associated with the Orange County project. To do this, however, I would like to first provide a brief overview of the major elements of the Orange County IVHS Test Bed. This project has evolved over a 2-year period from a relatively well-defined, specific, and compact project to a larger, more diverse effort.

The program can be traced back to a Caltrans ATMS and ATIS initiative started a few years ago. The mission of this initiative was to expedite deployment of full-function advanced transportation management systems, including advanced traveler information systems, in California. A number of more specific goals were outlined in the initiative. It is important to briefly discuss these, as they influence the institutional issues associated with the Orange County project.

The first goal was to provide Traffic Operation Center (TOC) and Traffic Operations System (TOS) designers and operators with state-of-the-possible ATMS evaluations based on actual field trials. The two key parts of this goal are the use of state-of-the-possible technology and