

Session Ten

Getting Started: Southern California Case Studies

Donald W. Dey, City of Menlo Park, California — presiding

District 12 Traffic Operations Center

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The first Caltrans Traffic Operations Center, located in Los Angeles, recently celebrated its 20th year in existence. This center has the capability to monitor 391 miles of freeways, including some in Orange County. Orange County was part of Caltrans District 7 until 1988. In that year, state legislators responded to the citizens' demand for a better transportation system by establishing a new Caltrans district, District 12, in Orange County.

District 12 includes all of Orange County, which currently has a population of approximately 2.4 million. The district has an extensive freeway system of approximately 140 centerline miles and a network of major surface streets. Approximately 220 miles of those surface streets have been identified as super streets, and emphasis is being placed on interjurisdictional cooperation in developing and operating them. Sixty percent of the freeway facilities in the district are congested. Also, the region falls within the South Coast Air Quality Management District and is part of a severe ozone non-attainment area.

Orange County does not have a traditional downtown business center, nor is there any one area that receives a significant majority of the traffic. Rather, there are several business/commercial areas throughout the county, including east Anaheim, the major activity center of Anaheim/Garden Grove/Orange, the civic center area in Santa Ana, the Spectrum area in Santa Ana, and the Spectrum area in Irvine. There are also several tourist areas like Disneyland, Knott's Berry Farm, and Newport Beach. Major event areas include Anaheim Stadium/Arena, Santa Ana Arena, the Orange County Fair-



grounds, and the Irvine Meadows Amphitheater. Finally, there are retail centers such as South Coast Plaza, Brea Mall, and Main Place in Santa Ana. In addition, two major universities, a major metropolitan airport, and several military bases are located in Orange County.

A number of innovative approaches to funding transportation improvements are used in the region. The Transportation Corridor Agency was created to build approximately 65 miles of new highways using development fees and tolls. A privatization project has been developed to construct an HOV and toll facility in the median of an existing freeway. The project is to include the most advanced forms of toll collection and HOV monitoring. There is an additional privatization project that proposes to extend Route 57 from the I-5/SR-57/SR-22 interchange to the

I-405/SR-73 interchange. The residents of the county also passed a one-half cent sales tax increase measure to fund transportation improvements. This will generate approximately \$3.1 billion in local funds over the next 20-year period.

Orange County's daily recurrent congestion is currently between 30,000 and 40,000 vehicle-hours per day. The average systemwide congestion is actually on the order of 60,000 to 65,000 vehicle-hours per day when congestion from holiday, weekend special event, beach, and incident sources is included. Since Orange County is no longer a bedroom community for Los Angeles, workers commute from Riverside, San Bernardino, Los Angeles, and San Diego Counties to their jobs in Orange County. This is due in part to the cost of housing in Orange County, which is the highest in the state.

Commuter lanes and transitway facilities are currently under development on major freeways in the county. Although drastically needed, these improvements are not expected to eliminate congestion and must be managed to maximize their potential. Also, two of the busiest interchanges in the nation currently are under construction with another three projects to begin this year, all on Interstate 5.

Orange County has designated 21 super streets. Super streets are major arterials that have been selected as candidates for high-flow arterial improvements. When used together, these improvements—including signal coordination, channelizing traffic, removal of street parking, and widening—will provide substantial relief to traffic congestion.

There are 13 major transportation centers throughout Orange County, the largest of which is John Wayne Airport. These centers are an integral link as mode transfer points. Each provides transit services for commuters. All locations, with the exception of the airport, are served by public transit. The airport is served with private taxi and shuttle services. Six locations are served by rail, and two are designated park-and-ride locations. These centers also

provide other amenities such as telephones and rest rooms, and some have food service and bicycle facilities.

The Division of New Technology, Materials, and Research, in cooperation with the cities of Irvine and Anaheim, UC-Irvine, and District 12, is developing an advanced traffic management system (ATMS) test bed to demonstrate the latest technology in Orange County.

Currently there are approximately 39,700 vehicle-hours of recurrent a.m. and p.m. congestion on District 12's freeways, and approximately 60 percent of the 242 directional miles experience daily congestion. That total represent daily averages during the winter months; congestion in the summer is roughly 60 to 70 percent of that, or about 25,000 vehicle-hours.

The recurrent congestion is about half the total congestion due to all causes, which includes weekends, holidays, special events, incidents, and planned lane closures. Each month, an average of 60 incidents occur that block at least one lane. Also in a typical month, there are 60 planned lane closures for maintenance on weekdays, and approximately 80 construction lane closures and 10 full freeway closures, generally occurring during the night.

A critical sections study showed that 90 percent of the freeway system in Orange County would experience congestion between 5:00 a.m. and 10:00 p.m. on weekdays if just one lane were closed. Flow rates during most weekday periods are greater than 1700 vphpl. Some sections experience rates of 1800–2200 vphpl almost all day. Computer records show 2–5 mile backups due to stalled cars or minor lane blocking incidents in the middle of the day. On weekends, congestion will occur on approximately 75 percent of the system if lane closures occur between 9:00 a.m. and 2:00 p.m.

Currently, 46.2 percent of the freeways in District 12, or 130.4 directional miles, are under surveillance. There are 232 ramp meters, 10 changeable message signs, 7 closed-circuit television cameras, and 2 highway advisory

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

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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.