Los Angeles, 1984 Olympic Games

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Years of planning and coordination culminated in 16 days of perhaps the most successful Olympiad ever staged. From every perspective there is agreement that the 1984 Summer Games were a success. This was clearly evident from a transportation and traffic view.

The possibility of essentially congestion-free operation of the Los Angeles transportation system was not so evident when transportation agencies first assembled in 1982 to begin planning for Olympic traffic. On the freeway system alone, motorists experience daily congestion on nearly 225 of the 700 miles in the morning peak and 275 miles in the afternoon/evening peak. The Olympics would hit this system with an estimated 6 million spectators at 24 venues spread throughout the basin with events scheduled throughout the day and nearly 25,000 athletes, world media, and Olympic family members transported to the venues on set timetables.

From the beginning, it was clear that planners had neither time nor money to develop major new transportation facilities. This left public transportation agencies with the task of planning and managing Olympic traffic essentially through transportation system management techniques. Similarly, it became clear that there could be no single Olympic traffic director. The success of any plan would depend upon the willingness of each transportation and law enforcement agency to perform its traditional functions in cooperation with each other. Under the overall umbrella of the Integrated Planning Group, over 50 federal, state, county, and local agencies coordinated their Olympic planning efforts. Caltrans' Olympic Task Force, functioning through the Traffic Control Subcommittee of the Olympic Security Coordinating Committee, coordinated and stimulated the development of Olympic transportation plans with the California Highway Patrol (CHP), the Los Angeles City Department of Transportation (LADOT), the Los Angeles City Police Department (LAPD), the Los Angeles Olympic Organizing Committee (LAOOC), the Southern California Rapid Transit District (SCRTD), and numerous other government and private transportation planners and operators.

Initial planning began with the development of an inventory of transportation conditions and needs at each venue. Following this, planners identified Olympic event requirements and desired operational characteristics for each venue and related the resulting individual plans to the transportation system as a whole. These venue

transportation concepts led to the cooperative development of three primary transportation management tools:

- venue traffic management plans (19 plans)
- freeway traffic condition maps (12 maps)
- bus system plan (24 routes)

Typically, the venue traffic management plans provided such details as preferred spectator routes, bus priority streets and ramps, one-way streets, designated parking, parking restrictions, signing, traffic officer placement, signal timing, and other traffic management requirements. The major effects on traffic were around the Los Angeles Coliseum area and the Westwood/Los Angeles International Airport area. Daily operational strategies were developed to carry out each plan.

The traffic condition maps depicted the congestion that could be expected on the freeway system with no adjustments to traffic demand and travel patterns. These congestion forecasts were based on historical data for typical August traffic, upon which the best estimate of the effect of Olympic traffic was superimposed. Event capacity, expected attendance, spectator arrival time, vehicle occupancy, modal split, and route assignments (O&D) were the elements used in predicting the Olympic traffic demands. Three different Olympic event days were selected as typical, and estimated limits of congestion at 8 a.m., 11 a.m., 3 p.m., and 6 p.m. were developed for each. These typical days were weekends, non-Coliseum event weekdays, and Coliseum event weekdays (maximum Olympic traffic days). Congestion was defined as slow-and-go traffic, 10 to 30 mph.

The estimate of available parking and the transportation system capacity at each venue led to the development of modal split targets, and set the desired bus use as a function of the shortfalls. The resulting Olympic bus systems plan consisted of 24 routes for spectators using a fleet of 500 extra buses to supplement the regular public bus service. This plan provided three types of service—shuttle, park-and-ride, and express—from major activity centers in the region to and from Olympic venues. Each day's bus system and schedule was tailored to that day's Olympic event schedule and spectator needs. Part of the desired bus use was assigned to private charter services.

As the planning continued, it became apparent that success would require cooperation from the entire region. Caltrans took the lead in establishing an ad hoc committee to accomplish this goal of public awareness. Numerous public and private agencies from Los Angeles, Orange and Ventura Counties, meeting regularly, developed and carried out an Olympic traffic communications plan. The committee developed specific information for the business and industrial communities, daily commuters, Olympic spectators, and the general public describing traffic management plans and expected traffic conditions and suggesting techniques such as flex time, four-day work week, vacations, and changes in delivery schedules to help businesses operate and at the same time alter traffic patterns during the games. "Operation Breezeway," a joint Caltrans/CHP outreach program, provided information specifically for the trucking industry.

Telephone hotlines were set up to keep the general public informed. A permanent public display of venue traffic management and Olympic bus plans was placed in the lobby of the Caltrans District 7 office. A Caltrans mobile information van provided a traveling display at shopping and other community centers to get the word out to the general public. As a result, the business community and the public knew that normal travel patterns would have to be modified during the Olympics to prevent normal congestion patterns from worsening.

As the Olympic period approached, all agencies noticed that the media wanted more information about an anticipated Olympic traffic problem. Caltrans developed numerous media contacts, provided special interviews, and opened the Traffic Operations Center (TOC) to full press access. A media center was established in the district office building for use immediately before and during the Olympics. Caltrans, LADOT, CHP, and SCRTD held regular 9 a.m. and 1 p.m. press briefings at which time information on the prior day's traffic conditions, today's traffic experience, and forecasts of tomorrow's traffic conditions were discussed. The interest level at these media briefings and for special interviews remained high throughout the 16 days of the Games.

As the Games drew near, the transition from planning to operation began to take place. At a level of interagency coordination never before experienced, each agency put their Olympic personnel, equipment and facilities into action.

The Caltrans District 7 office became the Olympic Traffic Center for the region. A unique interagency operation—the Traffic Coordination Center (TCC)—was housed here, close to the district's Traffic Operations Center (TOC). The TCC was staffed on a 24-hour schedule by the operating public and private transportation agencies who used new traffic information to adjust their operations and manage the system. Traffic situations affecting the Olympics were managed through the TCC.

Major incident response teams were on continuous full alert. Maintenance and hazardous material identification teams were on standby, poised to support the rapid clearance of a spilled load or overturned truck or help manage traffic in a "SWAT"-like manner.

Almost the entire freeway system had been cleared of maintenance, construction, and encroachment permit activities that could affect traffic, even by gawking. All available lanes were placed in service, including peak hour shoulder lanes. The system was at maximum capacity.

Ramp metering, on those freeways leading to and through the Westwood/LAX and the Los Angeles Coliseum/downtown areas, was expanded to operate all day every day. The metering plan, tailored to each freeway segment, operated from as early as 5 a.m. to as late as 9 p.m.

Special temporary park-and-ride facilities were established throughout the region. Working through the individual school districts, planners converted school parking lots into carpool and bus parking facilities for commuters and spectators to use within the neighborhoods.

Olympic guide signs in each area pointed spectators to each sport. Guide panels, identifying the sport, were installed atop the freeway overhead signs and on the off-ramps and local streets in a pattern delineating the spectator routes identified in the venue traffic management plans. The signs were essential to the effective operation of the traffic management plans.

In addition to the fixed message venue guide signs, 50 ground-mounted changeable message signs (CMS) informed motorists of trouble locations and impending congestion on the system and suggested ways to avoid delay and alternate routes to the venues. At several locations, the CMS were integrated into the venue traffic management plans and were used daily to establish and adjust the operation. The signs were operated through the TOC with input from field units.

Each day the operating agencies put a specific traffic management plan into motion. On pre-set timetables, traffic management teams consisting of traffic engineers in sedans, trucks and trailers, and maintenance field units carried out Caltrans' portion of the plans on the freeways and state highways at the venue sites. Traffic patterns were altered, bus-only ramps established, ramps closed and opened, and motorists

informed of the current traffic situation. Field operations were closely coordinated with the CHP and local traffic and law enforcement units. Caltrans operations personnel ran field command posts at the venues, maintaining radio contact to field units and the TOC. In all, about 15 sedans, 20 CMS trucks and trailers, and numerous maintenance units were deployed.

On six separate occasions, urban freeways were used as sites for cycling and marathon practices and events. Segments of three different freeways, including a 17-mile stretch of one major freeway, were closed to all public traffic in both directions. The major closures were on weekends. During each closure traffic management strategies consisting primarily of diversion plans and signed detours were put into effect. Congestion on the system as a result of the closures was insignificant.

The TOC operated around the clock and was the center for Caltrans' traffic management activities. All incoming and outgoing information was funneled through the TOC for centralization and continuity. Over 200 miles of electronic surveillance supplied current, detailed traffic information to use in making and monitoring sound traffic management decisions. This information also provided a base for analyzing how the system was operating. Fifteen closed circuit television cameras (CCTV) instantly verified incidents and traffic situations at several key locations in the central Los Angeles area. The TOC was the radio link for all Caltrans field units and also the link, by telephone, for the flow of selected information to and from the TCC. Ground and air traffic observers further improved monitoring of the system. At 24 key locations along freeway routes, volunteers from all branches in the district monitored traffic from commercial and office buildings and sent incident and congestion information to the TOC hand-held radios. The Department of Defense (DOD) provided six helicopters for exclusive use in traffic management. Volunteer air observers responded to incidents and trouble spots and radioed detailed information to the TOC. The ground and air teams were indispensable for verifying how the system was operating during the Games.

Each day, officials compared levels of congestion in the system, identified by various monitoring techniques, to the pre-Olympic forecasts. Using the freeway traffic condition maps and the available traffic information from the TOC, a pictorial comparison was developed for each of the four time frames for each of the 16 days of the games. Six of the 64 maps have been selected as typical and are presented in Figures 1 through 6. Appropriate maps were displayed each day at the 9 a.m. and 1 p.m. press briefings held in the media center.

As the Olympics approached, the entire freeway system began operating with essentially no congestion, with total daily volumes (ADT) down about 2-3 percent. More important, the morning peak flattened, beginning some 30 to 45 minutes earlier. Peak-hour volumes were down about 7 percent with a noticeable decrease in the number of trucks.

The free-flow conditions continued through the first week of the Games. At that point, some evidence showed that the shifts in peak hour flows were beginning to slip back to pre-Olympic patterns. Light localized congestion began to appear in some areas. By Wednesday, the combined background and Olympics traffic was about equal to the pre-Olympic normal. On Friday, August 3, the Coliseum events began, and ADT rose to slightly above normal levels. The system continued to operate with very little congestion. Bus patronage to the Coliseum area was reasonably good, and the city streets operated quite well.

The second week began with about a plus 5 percent ADT and moderate congestion here and there. Bus patronage to the Coliseum continued to be good, and surface street operations improved as minor operational adjustments took effect. On Wednes-

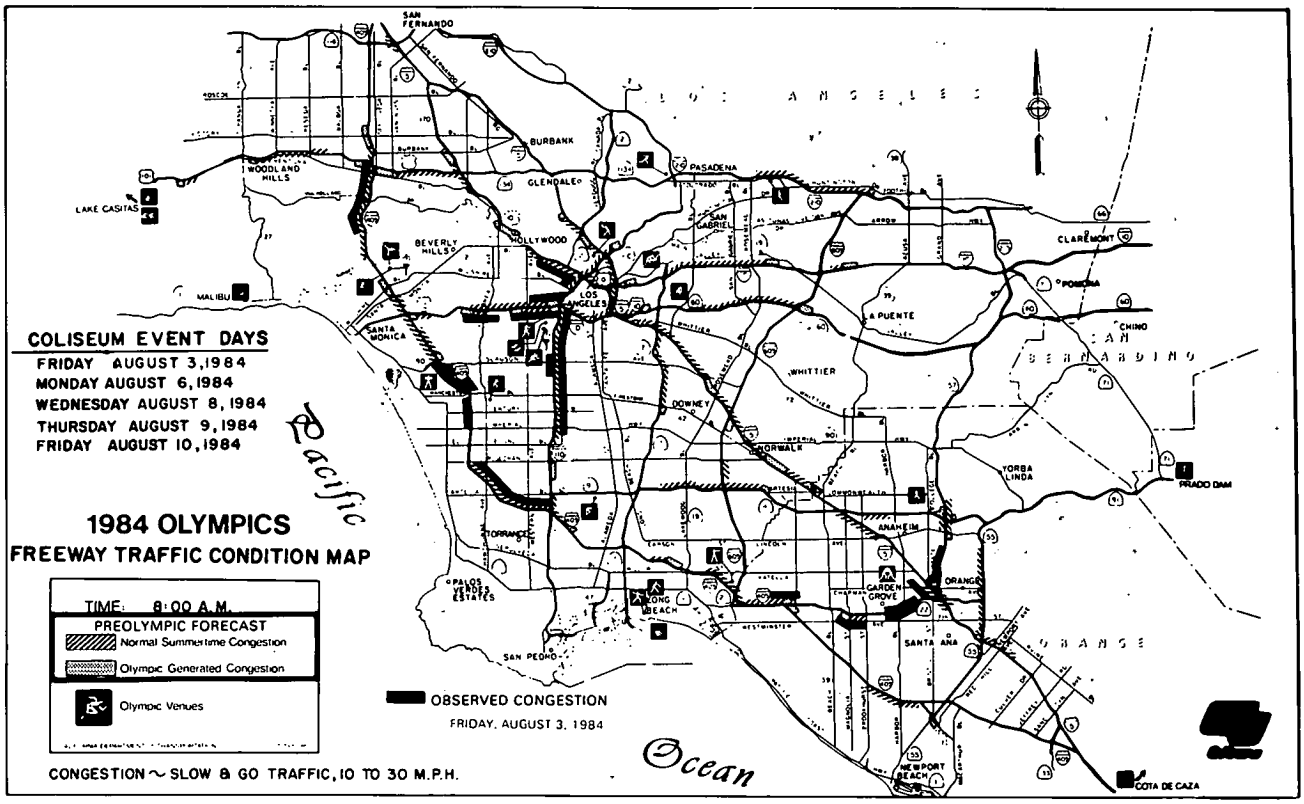

FIGURE 1 Freeway traffic condition map, August 3, 1984, 8:00 a.m.

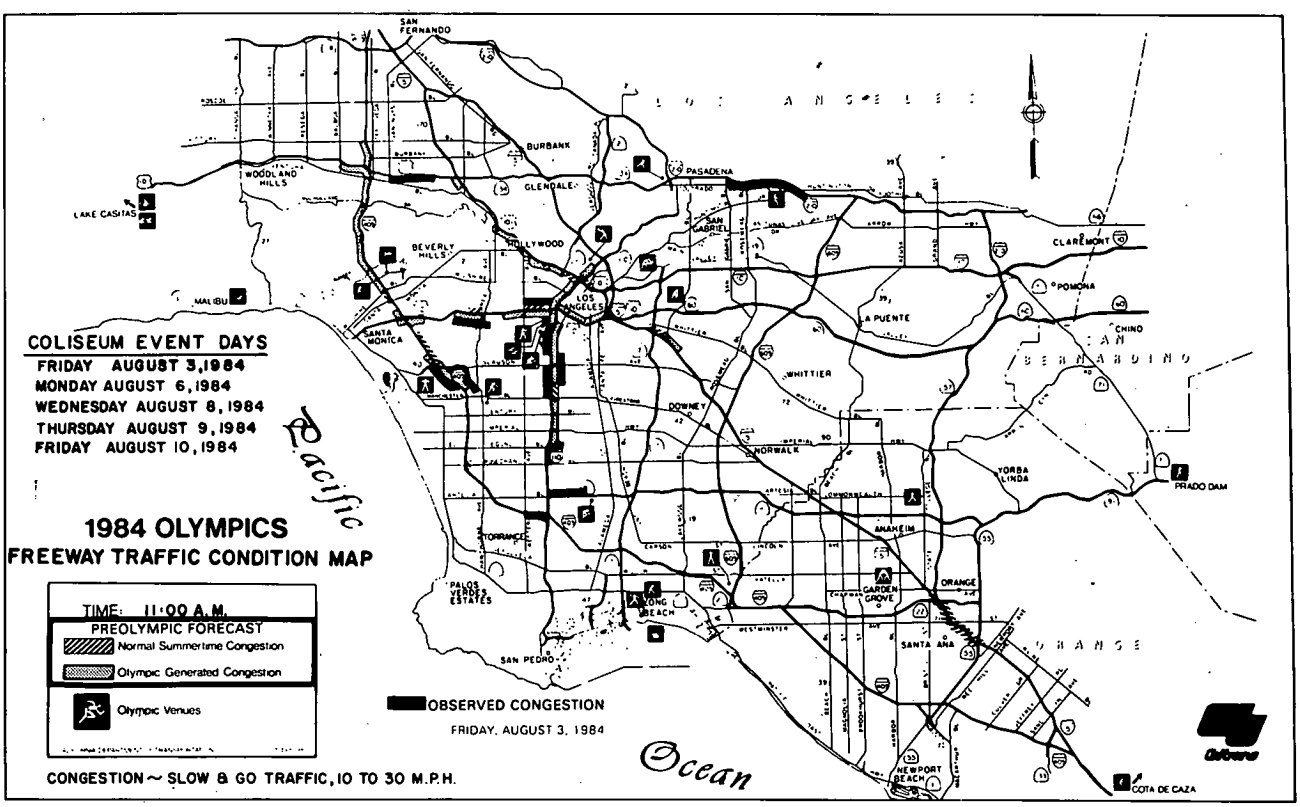

FIGURE 2 Freeway traffic condition map, August 3, 1984, 11:00 a.m.

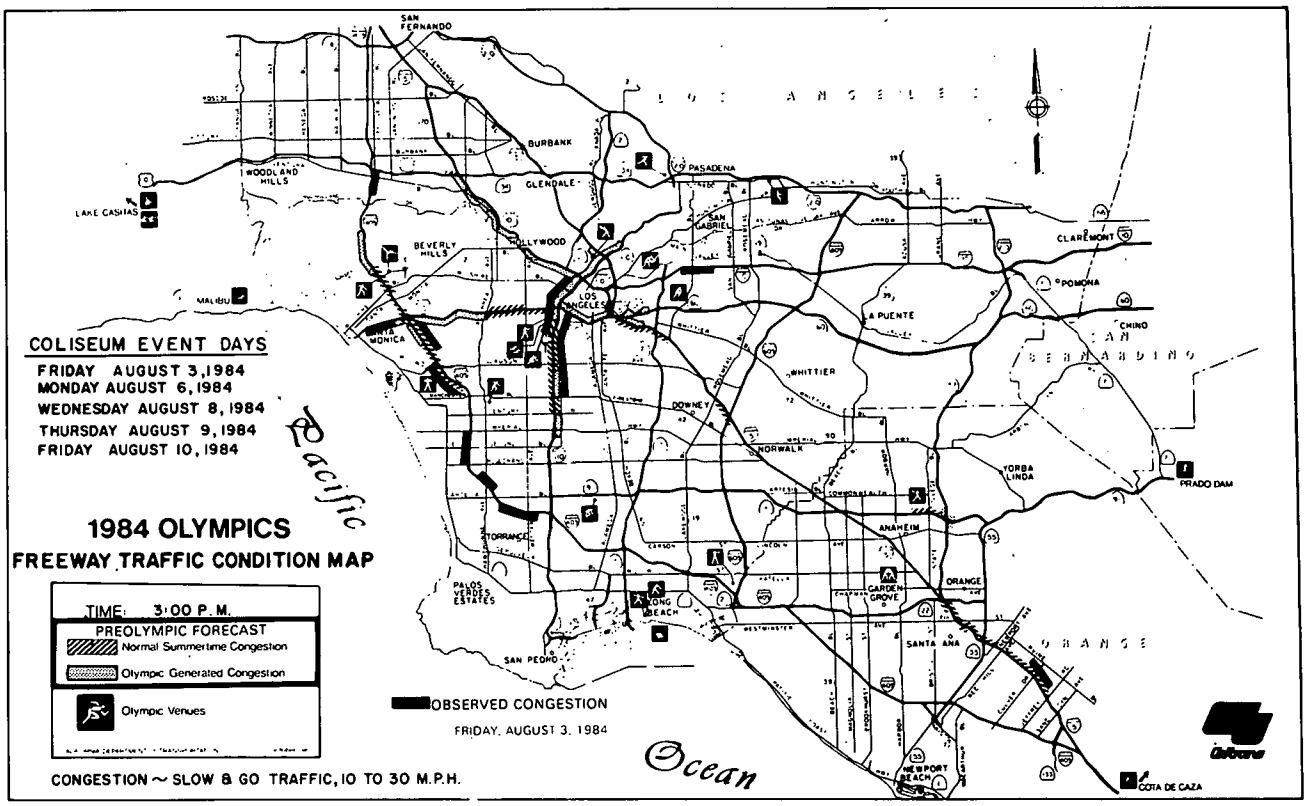

FIGURE 3 Freeway traffic condition map, August 3, 1984, 3:00 p.m.

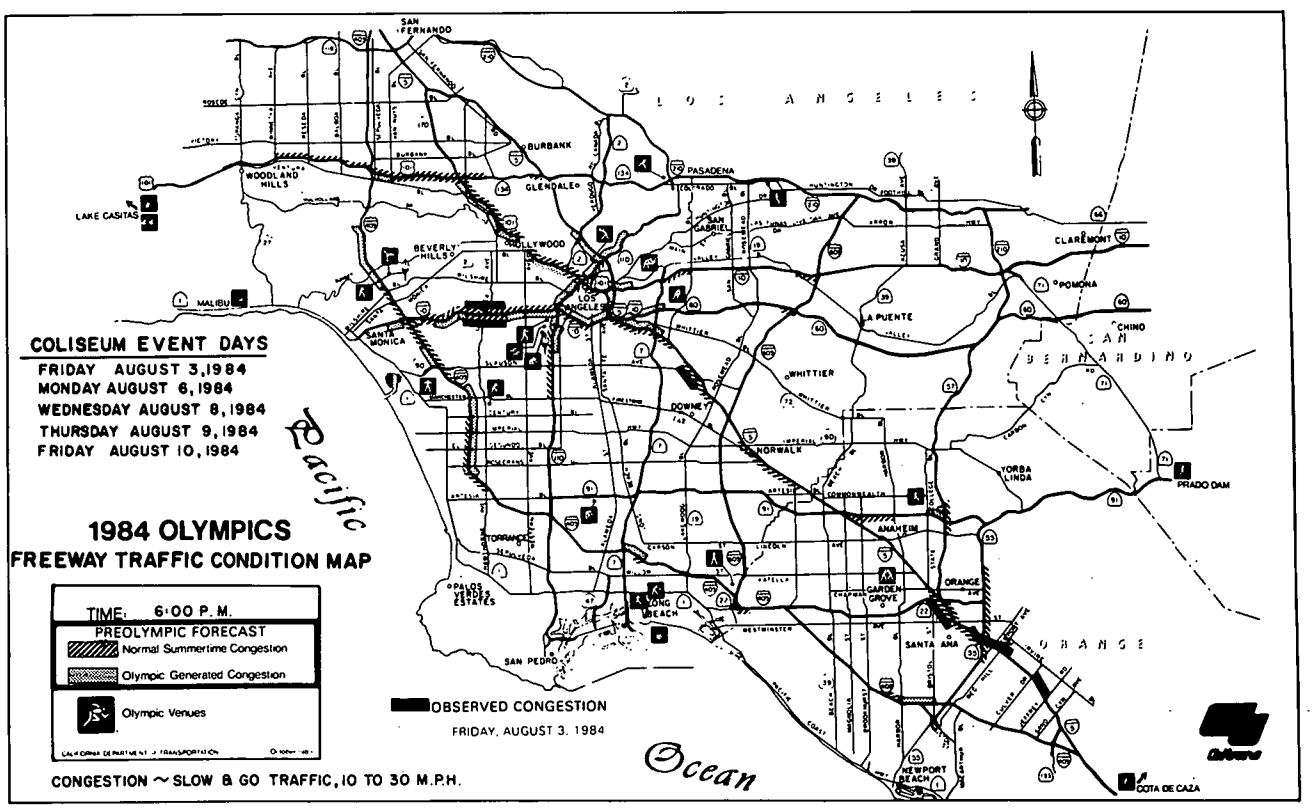

FIGURE 4 Freeway traffic condition map, August 3, 1984, 6:00 p.m.

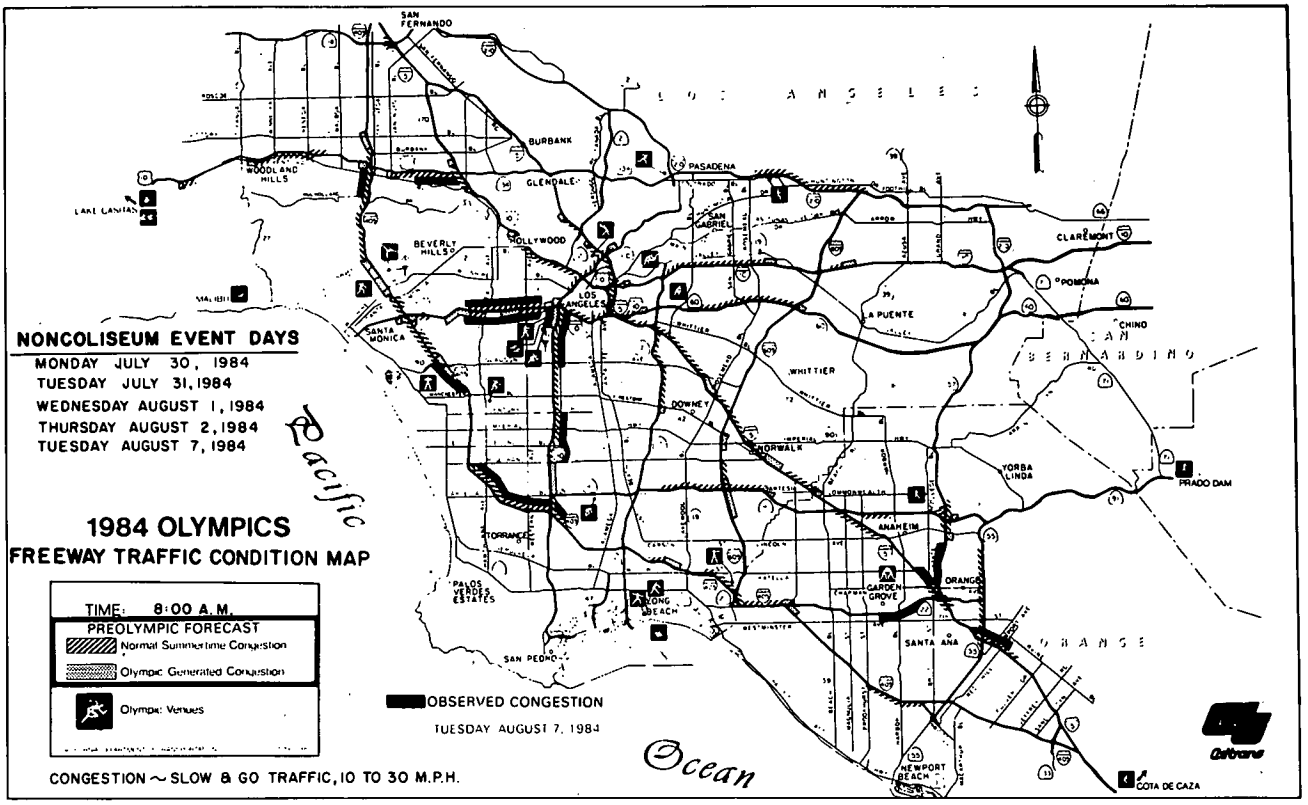

FIGURE 5 Freeway traffic condition map, August 7, 1984, 8:00 a.m.

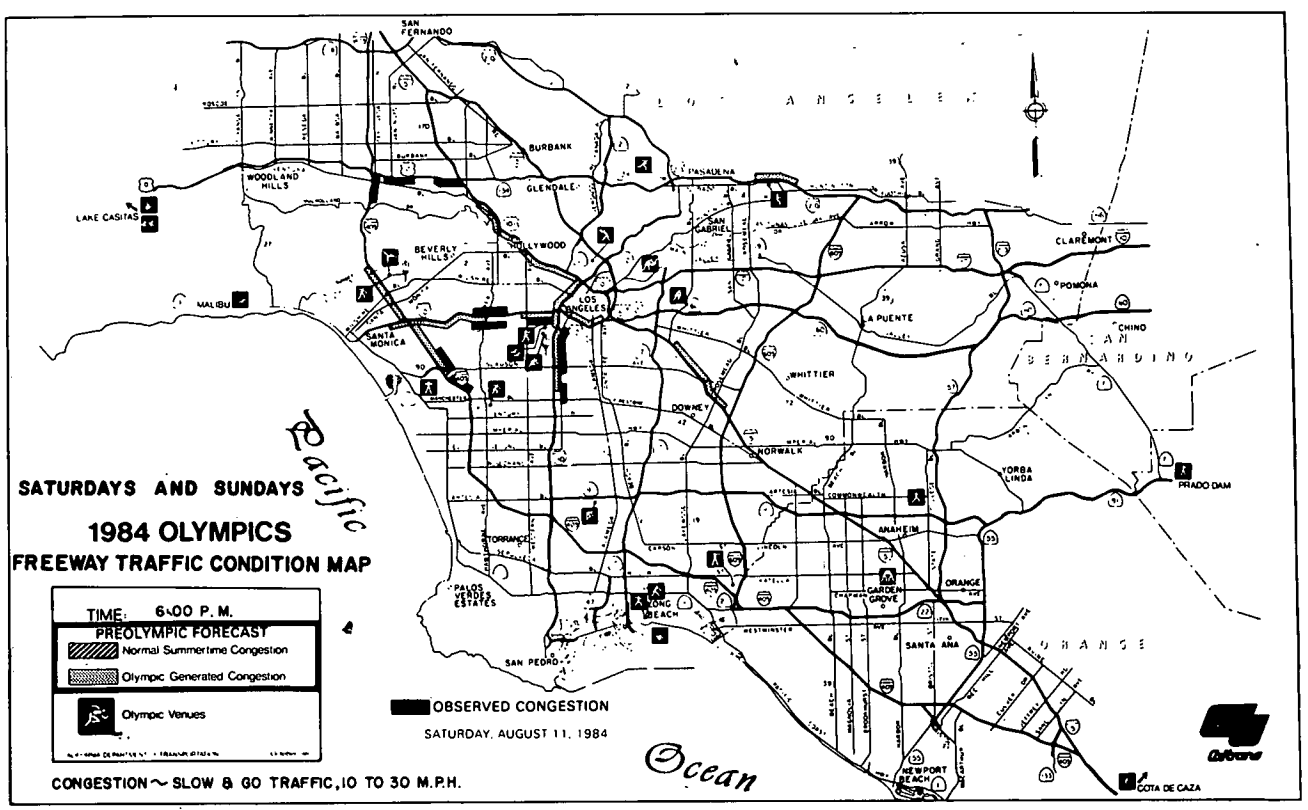

FIGURE 6 Freeway traffic condition map, August 11, 1984, 6:00 p.m.

day, August 8, the system operated well through the morning and into the afternoon with ADT at about plus 8 percent. That evening, with over 97,000 spectators attending the soccer game at the Pasadena Rose Bowl, the first patterns of extensive congestion occurred. The early 6 p.m. starting time and the low spectator bus patronage (only 6 percent) were the most likely causes.

Through the remainder of the week, the system continued to operate well, although ADT continued to climb and more congestion—still moderate—began to show, particularly in the evening peak. On Friday, ADT was at plus 11 percent. That evening, the Rose Bowl area operated with very little congestion. The Coliseum operation continued to work well. The Westwood area, however, experienced some heavy congestion as spectator and onlooker traffic mixed. There were no real problems during the final weekend, other than a helicopter crash early Sunday afternoon on the Harbor Freeway near the Coliseum. Quick clearance of the helicopter averted a major convergence with the closing ceremonies crowd.

For each day of the Olympics, daily traffic volumes and delays were compared to the normal summer conditions (August 1983 traffic data) for a portion of the freeway system known as the 42-mile loop. (See Figure 7, upper portion.) The 42-mile loop is a triangular network, located in central and west Los Angeles, consisting of the Santa Monica Freeway (I-10), the Harbor Freeway (I-110), and the San Diego Freeway (I-405). The loop is heavily equipped with electronic sensors embedded in the roadway pavement, which provide vehicular volume and speed data to a central computer in the TOC. Data are transformed into bar graphs depicting a percentage comparison of the volumes and delays (see Figure 8).

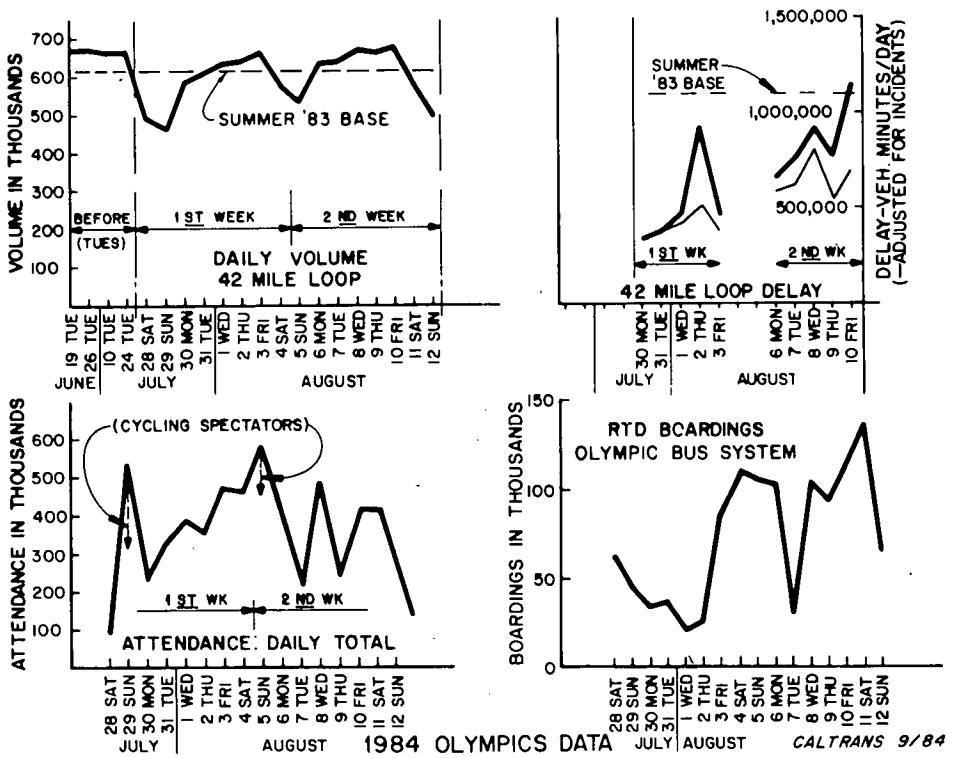

FIGURE 7 Daily traffic volumes, delays, attendance, and bus boardings, 1984 Olympics.

To benefit from the Olympic experience, we must pay closest attention to those factors that contributed the most to its success. Selective application of the lessons learned can improve day-to-day travel patterns.

First and foremost, the entire transportation system was in a maximum state of readiness. Traffic management strategies, techniques, and systems were in full operation. Venue traffic plans designed for special events were used daily, precisely and when needed. Motorist information systems kept commuters and spectators informed of the best routes. Accurate and up-to-date traffic condition information was shared by numerous agencies, each performing their traditional functions. Many agencies used the information to improve their daily operation. Joint decisions were made and plans adjusted accordingly. Public awareness was at its zenith. The system would have performed well even under worse conditions than were experienced.

A shift in the commuter travel patterns broadened and flattened the peak periods. Hourly volumes were down about 7 percent. The result—congestion was down by as much as 60 percent. A very light shift and reduction in peak hour volumes produced dramatic reductions in congestion. This concept, well known to transportation managers, was very clearly demonstrated.

Truck traffic was down, particularly during peak hours. Overall reduction was about 6 percent, as much as 16 percent during peak periods. With an estimated 1-to-5 ratio, trucks to automobiles, heavy dividends can be realized by shifting trucks to the non peak periods.

Very few major incidents occurred at critical times or locations. Undoubtedly, free-flow conditions and fewer trucks were key factors. With major incidents contributing heavily to the total congestion experienced each day, again, a small adjustment can have a dramatic impact.

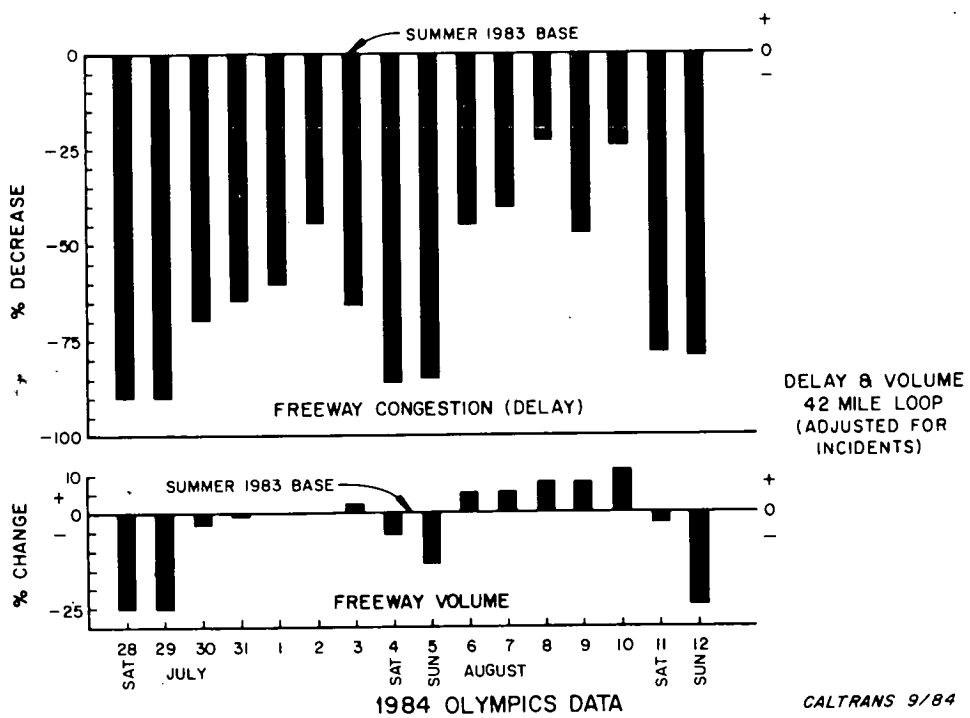

FIGURE 8 Percentage comparison of traffic volume and delay.

Commuter carpooling/ridesharing remained essentially unchanged. The only noticeable increase in vehicle occupancy was in spectator vehicles going to the Coliseum area.

Spectators used the SCRTD Olympic bus system extensively, particularly at the Coliseum and Westwood areas. Total ridership was 1,145,350 with a peak day of 135,000 (8/11/84). This was an essential element of the traffic management plan. During the one major congestion experience of the Olympics, the evening of August 8th at the Rose Bowl, bus patronage was a disappointing 6 percent. (See Figure 7 for daily spectator attendance at the games and daily bus boardings.)