Session Four
Planning for ITMS: LA Smart Corridor Case Study

A. Keith Gilbert, Automobile Club of Southern California — presiding

Smart Corridor Introduction

Jack L. Kay
JHK & Associates

Mr. Kay began the panel discussion with a general introduction to the Los Angeles Smart Corridor project. The major points he made during his presentation are summarized below.

- The purpose of the Smart Corridor project was not to dream up new technological toys and then find ways to apply them. Rather, the needs in the corridor were examined first and then appropriate technologies were identified. The goal of the project was to test technologically advanced methods for improving regional mobility.

- There were three primary objectives or functions of the Smart Corridor project: to operate the freeways and surface streets at their highest level of efficiency, to balance the flow of traffic between the freeway and surface street systems, and to concentrate on the use of motorist information as a control option.

- A series of premises were established for the Smart Corridor project. They were to: build upon on-going activities, recognize agency charters, coordinate the agency responses, recognize that it is a demonstration project, adapt to on-going research, make it part of a regional plan, and work on advance agreements among the agencies.

- The Smart Corridor project focuses on the Santa Monica Freeway, which is one of the busiest freeways in the country. The corridor also encompasses 5 parallel and 15 perpendicular arterial streets. There are several agencies that have been integrated or linked together through the project, including: Caltrans, the Los Angeles Department of Transportation, the California Highway Patrol, the Los Angeles Police Department, and the Southern California Rapid Transit District.

- The Smart Corridor is really not a control system itself. It is more accurately described as a central data base for collecting and redistributing corridor information. The real control goes back out to the various agencies and their own systems. An important point is that each participating agency in the Smart Corridor project retains its traditional role.

- System elements to maximize the efficiency of the freeway and surface streets are: freeway ramp metering, computer traffic signal control, freeway incident detection, incident response teams, and freeway service patrols.

- The project planners did not envision a significant amount of diversion from the freeway to the surface streets. Rather, they wanted to be able to alert motorists of unusual conditions before they entered the freeway, when they might be convinced to use an alternate entrance or route. The system elements to balance the flow of traffic between the freeway and the arterial surface streets are surface street changeable message signs and site specific highway advisory radio.

- System elements to gather and manage information include: inductive loop detectors, closed-circuit television, changeable message signs, highway advisory radio, in-vehicle navigation systems, call-in services, media communications, digital broadcasting and teletext.

- There are a few features that will be used to provide operational support for the com-

bined decisions made by the various agencies in real-time. They will include: a combined information data base, shared data among agencies (including video images), decision support mechanisms, strategies to influence route choice, and adaption of the network to conditions in real-time.

- Despite its apparent size and complexity, the Smart Corridor system configuration is rather simple. Basically, it is a network of workstations and high-end PCs; there is no large single computer at the center of the Smart Corridor project. One important aspect to operating this distributed system effectively will be to have established standard operating procedures and agreements among the participants.

Mr. Kay concluded his presentation by discussing the use of expert systems for decision support in the Smart Corridor. Some examples of potential expert system uses include arterial incident detection, incident correlation, and incident response support.

Project Development

S. Edwin Rowe
Los Angeles Department of Transportation

Following the general introduction to the Smart Corridor project, Mr. Rowe focused on the evolution of the project concept and the implementation process. He described the following major steps in the process.

- The process began in 1987 with the development of a vision for the Smart Corridor concept. At that time, the traffic conditions were getting noticeably worse in Los Angeles County and continued growth in the demand was expected. With very little new capacity being constructed, it became obvious that the existing facilities would need to be used much more efficiently. That situation led to the vision of a network of corridor integrated traffic management systems in the county. That concept, which came to be known as the Smart Corridor, drew heavily from the experiences of the 1984 Summer Olympic Games. The idea received initial approval from the Los Angeles County Transportation Commission (LACTC).

- After obtaining initial approval and preliminary funding, the project moved forward into a concept design study during 1989. That process involved detailed studies of over 40 separate functional elements that were being considered for the project. The results of those studies were summarized in a concept report that was essentially a recommendation for the system. It had a system definition, an idea of the costs, and a project plan. The report also contained the results of some parallel research conducted by several universities. The LACTC approved the project, which then went into detailed design.

- A systems manager approach was used during the detailed design of the overall program, which began in mid-1990. Much of the work and detailed design was done by the operating agencies, like Caltrans and the Los Angeles DOT. JHK & Associates, the project consultant, was responsible for the development of the computer systems and software. They were also responsible for the integration and advising of the various agencies. It was very important that all of the elements being developed worked together as an organized system.

- The project is now being implemented, and should be completely in place by the summer of 1993. At that point, the Smart Corridor will go into full operation and a year of intense evaluation. Some topics for evaluation will include the various motorist information elements, the expert systems, and the relationships and coordination among the operating agencies. In addition, there will be an overall performance evaluation of the impact on the corridor in terms of moving traffic, increasing throughput, and increasing travel time reliability. Based on the results of that evaluation, a decision will be made