

Lessons Learned from Accident Investigations

Traffic Planners Urged to Improve Safety on Temporarily Closed Streets

A tragic crash at a California farmers' market that killed 10 people and injured 63 sends an urgent warning to state and local traffic planners to make sure that safety barricades, detour signs and barriers are adequate at locations where streets are temporarily closed, Federal safety officials said.

"There are more than 3,000 farmers' markets throughout the country and even more festivals, parades, and similar activities, many resulting in temporary road closures," said National Transportation Safety Board Chairman Ellen Engleman Connors. "It is imperative that cities understand the hazards associated with road closures and apply countermeasures that will prevent the intrusion of vehicles into pedestrian areas."

The Safety Board concluded its investigation into a July 2003 crash involving an 86-year-old driver whose vehicle hit another car at an intersection in Santa Monica, California, and then drove into a temporarily closed street where a farmers' market was being held, striking pedestrians and vendor displays.

The Safety Board said the driver failed to maintain vehicle control because he probably mistakenly stepped on the accelerator instead of the brakes. The Safety Board was also concerned about an inadequate barrier system to protect pedestrians at the market, which contributed to the severity of the accident.

Santa Monica's temporary traffic plan to close the street was not consistent with its own established local traffic procedures or with State or national guidelines and was inadequate to ensure the safe flow of vehicle and pedestrian traffic in the area, the Safety Board said. Plastic A-frame barricades were used to close the roads instead of sturdier and more easily recognized Type III barricades. In addition, signage indicating the road closure was inadequate.

The temporary traffic control plan for the market had been developed more than 2 decades ago and revised only once 5 years later, the report said. Since the city's last control plan revision for the market in 1986, both California's traffic manual and the national Manual on Uniform Traffic Control Devices (MUTCD) have been updated several times. The Safety Board urged the city of Santa Monica to annually review and update its traffic control plan for the farmers' market and urged other municipalities to do the same.

To aid city traffic planners, the Safety Board also urged the Federal Highway Administration to revise the MUTCD, Chapter 6, "Temporary Traffic Control," to provide specific references to road closure situations, other than highway construction or maintenance, for which the guidance is applicable.

Most of the information presented in both the MUTCD and the Roadside Design Guide focuses on work zones. While these countermeasures may also be employed for other types of street closures, the references and information in the guides have such a strong emphasis on work zones that users may have difficulty recognizing their applicability to other situations, according to the Safety Board.

Additional signs and Type III barricades alone would not have prevented the accident vehicle from entering the pedestrian zone in the farmers' market. But Safety Board investigators said they believe a positive rigid barrier system, such as removable bollards, would very likely have accomplished this. The city had installed removable bollards in another location on a street that had once been a through street, and had been turned into a permanent pedestrian mall. While the farmers' market location was temporary, it was a regularly recurring event that used part of a street twice a week; that section was open to traffic the rest of the time.

"Segregating pedestrian from vehicular traffic is a key element in pedestrian safety. Positive barriers between pedestrians and vehicles, although not always viable, are the best method of ensuring this segregation," Engleman-Conners said.

Safety Board investigators also pointed to other jurisdictions that have recognized the utility of barriers, such as bollards, in protecting pedestrians during temporary road closures. For example, in the early 1980s, the New Orleans city council passed an ordinance making Bourbon Street a pedestrian mall during nighttime hours. To protect pedestrians on the closed street, the city placed removable bollards in the roadway. The Bourbon Street bollards, which extend about 40 inches above ground and 6 inches into the ground, are placed each night into metal collars embedded in the roadway. The Safety Board urges municipalities to consider installing barricades, such as bollards, at locations where recurring activities require temporary road closures.

For the complete accident report, visit the NTSB Web site at this address:
<http://www.nts.gov/publicctn/2004/HAR0404.pdf>