



# National Transportation Safety Board

Washington, D.C. 20594

## Response to Petition for Reconsideration

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Date: FEB 01 2008

Mr. P. Lamont Ewell  
City Manager (Petitioner)  
City of Santa Monica  
1685 Main Street  
Post Office Box 2200  
Santa Monica, California 90407-2200

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In accordance with 49 *Code of Federal Regulations* (CFR) Section 845.41, the National Transportation Safety Board has reviewed the city of Santa Monica's petition for reconsideration and modification of the probable cause and findings of Highway Accident Report NTSB/HAR-04/04, *Rear-End Collision and Subsequent Vehicle Intrusion Into Pedestrian Space at Certified Farmers' Market, Santa Monica, California, July 16, 2003* (HWY-03-MH-039).<sup>1</sup> Susan E. McCarthy, then city manager of Santa Monica, submitted a letter requesting reconsideration and modification of the accident's probable cause and five of its findings in February 2005.<sup>2</sup> Additional information in support of the petition (three depositions) was submitted in August 2005<sup>3</sup> by Hall and Associates consulting firm, representing the city of Santa Monica. In July 2007,<sup>4</sup> the city of Santa Monica forwarded supplemental information that modified the original petition to request that the Safety Board reconsider an additional finding, for a total of six findings to be reconsidered. Based on its review of these documents, the Safety Board denies the petition in its entirety.

The Safety Board adopted the report of its investigation of the accident on August 3, 2004. The executive summary stated:

On July 16, 2003, about 1:46 p.m. Pacific daylight time, a 1992 Buick LeSabre, driven by an 86-year-old male, was westbound on Arizona Avenue, approaching the intersection of Fourth Street, in Santa Monica, Los Angeles County, California. At the same time, a 2003 Mercedes Benz S430 sedan, occupied by a driver and front-seat passenger, was also westbound on Arizona Avenue and had stopped for pedestrians in a crosswalk on Fourth Street at the intersection with Arizona Avenue. The Buick struck the left rear corner of the Mercedes, continued through the intersection, and drove through a farmers' market, striking pedestrians

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<sup>1</sup> For additional information, read National Transportation Safety Board, *Rear-End Collision and Subsequent Vehicle Intrusion Into Pedestrian Space at Certified Farmers' Market, Santa Monica, California, July 16, 2003*, Highway Accident Report NTSB/HAR-04/04 (Washington, DC: NTSB, 2004).

<sup>2</sup> February 1, 2005, letter from Susan E. McCarthy, city manager of Santa Monica.

<sup>3</sup> August 22, 2005, letter from Hall and Associates consulting firm, representing the city of Santa Monica.

<sup>4</sup> July 11, 2007, letter from P. Lamont Ewell, city manager of Santa Monica.

and vendor displays before coming to rest. As a result of the accident, 10 people were fatally injured, and 63 people received injuries ranging from minor to serious. The Buick driver and both Mercedes occupants were uninjured.

As a result of its investigation, the Safety Board determined that the probable cause of this accident was:

...the failure of the Buick driver to maintain control of his vehicle due to his unintended acceleration. Contributing to the severity of the accident was the lack of a barrier system to protect pedestrians in the Santa Monica Certified Farmers' Market area from errant vehicles.

The petitioner submits that six of the Safety Board's findings and the probable cause are erroneous. The Safety Board will first address the disputed findings 3, 4, and 5 concerning the driver's response, then findings 8, 9, and 10 concerning inadequate traffic control, the need for a rigid barrier system, and the clarity of current guidelines regarding road closures. The Safety Board's response will conclude by addressing the probable cause.

The disputed findings concerning the driver's response are as follows:

Finding 3

The accident driver made an error in response execution, inadvertently accelerating when he intended to brake, that resulted in the collision with the Mercedes Benz.

Finding 4

The accident driver failed to detect his error in response execution, thereby inadvertently accelerating his vehicle and propelling it through the Santa Monica Certified Farmers' Market.

Finding 5

The accident driver most likely reverted to the habitual response of hard braking or "pumping" the brakes as his stress level increased and the vehicle failed to slow, but because his foot was on the accelerator rather than the brake pedal, this response led to increased acceleration.

The petitioner requested that the Safety Board consider the following information obtained from the driver's preliminary hearing, as well as evidence obtained from the driver's criminal hearing:<sup>5</sup>

- A Los Angeles Superior Court judge's determination that sufficient evidence exists to proceed with the driver's criminal prosecution for vehicular homicide.

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<sup>5</sup> According to the city of Santa Monica's February 1, 2005, petition, the preliminary hearing occurred October 25 through November 3, 2004; according to supplemental information submitted by the city on July 11, 2007, the criminal trial occurred in September and October 2006.

- Witness accounts of the incident that the petitioner believes contradict Safety Board findings 3 through 5, which conclude that the driver's actions resulted from inadvertent acceleration.
- The conviction of the driver on 10 counts of vehicular manslaughter on October 20, 2006.

With regard to the Superior Court judge's ruling and the conviction of the driver, the Board must note that it is not in a position to comment on the criminal proceedings or decisions against the driver. The Safety Board is charged by Congress to determine the probable cause of transportation accidents; therefore, its investigations focus solely on the issues of safety, not fault.

With regard to the witness accounts, the petitioner asserts that the information presented at the preliminary hearing and at the criminal trial demonstrated that, up to and at the time that the accident driver went through the barricades on Arizona Avenue, he had been operating his vehicle in a manner consistent with an individual who had control of his vehicle. The petitioner states that the driver did not experience a panic response or commit a pedal error. In support of these statements, the petitioner says witnesses observed the accident vehicle "slow down as it approached the rear of the Mercedes prior to colliding with it at Fourth and Arizona Avenue." The city noted in its 2007 supplemental information, "Mr. Weller [the driver] stopped at the time of impact with the Mercedes, turned towards his left, proceeded west on Arizona, applied his brakes and directed his car to the left in an apparent [attempt] to turn down an alley, then took his foot off the brake and redirected his car toward the barricades."

In its accident investigation report, the Safety Board cited similar witness statements<sup>6</sup> indicating that the driver was traveling slowly when his vehicle struck the Mercedes and then attained much higher speeds upon accelerating away from the collision. Damage to the vehicles was consistent with the witness statements. However, the Safety Board does not agree with the petitioner's interpretation that this contradicts the Safety Board's finding that the driver made an error in response execution. The accident driver indicated in his statement to police investigators that he may have gotten the brake and accelerator confused, showing that the driver knew he needed to stop his vehicle, knew that braking was the appropriate response, and attempted to execute that response. The Safety Board therefore believes that the driver unintentionally pressed the accelerator instead of the brake pedal.

The petitioner also cites witness statements indicating that witnesses saw the driver stopped after colliding with the Mercedes and saw the accident vehicle's brake lights applied prior to its entering the farmers' market. However, taken as a whole, the witness statements, including those cited in the Safety Board's accident investigation report and those presented at the criminal hearing, do not corroborate this information. For example, several witnesses said that the accident driver accelerated after striking the Mercedes, characterizing the incident as a hit-and-run accident. The driver of the Mercedes stated that, after impact, she looked in her rearview mirror and saw the accident vehicle turn to the left and accelerate around her vehicle

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<sup>6</sup> Safety Board investigators were unable to interview any of the witnesses named by the petitioner because investigators were denied access to witnesses. During its investigation, the Safety Board did obtain a copy of the California Highway Patrol's accident investigation report, which contains statements from witnesses named by the petitioner, except for police.

and then the “ROAD CLOSED AHEAD” sign. She said the vehicle swerved, then straightened out, and continued to increase its speed as it entered the farmers’ market. She described the acceleration of the accident vehicle as rapid and very loud. A statement from one witness, who said she was behind the driver, said that she saw the vehicle swerve and observed that the driver “lost control of the vehicle” before entering the farmers’ market, which contradicts the petitioner’s claim that the driver did have control of his vehicle before entering the farmers’ market. Another witness told police investigators that, from his vantage point on the south side of Arizona Avenue at Fourth Street, he observed no brake lights on the Buick.

Several witnesses at the criminal hearing described the vehicle proceeding through the market at a high rate of speed, which one witness described as “horrendous.” In its accident investigation report, the Safety Board cited similar witness statements, and the Board subsequently determined that the driver failed to detect that he was stepping on the accelerator instead of the brake. When the car did not stop, he most likely responded by “hard braking” and then “pumping” the brake. Because his foot was on the accelerator instead of the brake, the vehicle continued to accelerate. Finally, many of the witness statements submitted by the petitioner described the events following the accident, after the accident vehicle stopped, and their perceptions of the driver’s demeanor. Although these statements describe the tragic consequences and aftermath of the accident, they do not provide any information regarding the actions of the driver during the collision sequence. Further, because the Safety Board was denied access to the driver, it cannot make judgments or statements about how involvement in the accident affected the driver’s behavior. In its experience, the Safety Board has found that people exhibit a wide range of behaviors following a traumatic accident.

The Safety Board acknowledges that witness statements are an important data source regarding an accident. However, it is well established that memories are malleable and can be susceptible to outside influences.<sup>7</sup> Postevent information can be obtained in several ways, including conversations with another person, media coverage, or leading questions; such information is often incorporated into the recollection and influences the memory of the event. Eyewitness testimony gathered a year or longer after an event, such as that provided by the petitioner, is of limited value because an extended period of time has passed in which the memory can become altered. For this reason, the Safety Board generally does not rely exclusively on witness statements in determining the probable cause of an accident. In this case, the Safety Board reviewed the physical and mechanical condition of the vehicles involved in the accident; the accident site; and the driver’s history, physical condition, and toxicological results; the Board also conducted extensive reviews of scientific literature on unintended acceleration. The examination of these elements led the Safety Board to exclude the weather, the mechanical condition of the vehicle, alcohol and illicit drugs, driver fatigue, and the driver’s medical condition as contributing or causal factors in the accident. Had the accident vehicle been equipped with an event data recorder, important information regarding the driver’s behavior and unintended acceleration might have been available during the investigation.

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<sup>7</sup> For a recent review of the literature, see (a) Elizabeth F. Loftus “Planting Misinformation in the Human Mind: A 30-Year Investigation of the Malleability of Memory,” *Learning and Memory*, Vol. 12 (2005): 361-366; (b) Elizabeth F. Loftus, “Our Changeable Memories: Legal and Practical Implications,” *Nature Reviews Neuroscience*, Vol. 4 (2003): 231-234; (c) Gary L. Wells and Elizabeth F. Loftus, “Eyewitness Memory for People and Events,” in A.M. Goldstein (ed.), *Handbook of Psychology: Forensic Psychology*, Vol. 11 (New York: John Wiley and Sons) 149-160; and (d) Elizabeth F. Loftus “Memory Faults and Fixes,” *Issues in Science and Technology*, Summer 2002 (Washington, DC: National Academy of Sciences).

The Safety Board has reviewed the eyewitness testimony provided with the petitioner's request; the three additional depositions submitted August 22, 2005; and the witness statements submitted July 11, 2007, with the supplemental information to the petition. The Safety Board believes that none of this information provides compelling evidence to support the city of Santa Monica's petition and, further, the information is of marginal value because it was collected as long as 3 years after the accident. Consequently, the Safety Board finds no grounds to modify findings 3 through 5.

In conclusion, the Safety Board continues to believe that the driver made an error in response by accelerating when he intended to brake, thereby colliding with the Mercedes (finding 3); that the driver failed to detect his error in response execution, inadvertently accelerating his vehicle into the farmers' market (finding 4); and that the driver reverted to the habitual response of hard braking or pumping the brakes as his stress level increased and the vehicle failed to slow down (finding 5).

The disputed findings concerning traffic control and the need for a rigid barrier system are as follows:

Finding 8

Santa Monica's temporary traffic plan for closure of Arizona Avenue to accommodate the Santa Monica Certified Farmers' Market was not consistent with established local, State, or national guidelines and was inadequate to ensure the safe flow of vehicular and pedestrian traffic in the area.

Finding 9

Had Santa Monica installed a temporary rigid barrier system, such as bollards, at the closure limits of the Santa Monica Certified Farmers' Market, the barrier system might have arrested or reduced the forward motion of the accident vehicle, thereby preventing it from continuing into the farmers' market and eliminating or greatly reducing the number of casualties.

Finding 10

The *Manual on Uniform Traffic Control Devices'* guidance on temporary traffic control is insufficiently clear to ensure that users will apply it to road closures not associated with highway construction or maintenance.

The petitioner has requested that the Safety Board reconsider its position on these conclusions in light of the following assertions:

- The city's temporary traffic control plan fully complied with its own traffic control manual, the State's *CalTrans Traffic Manual* (CTM), and the Federal *Manual on Uniform Traffic Control Devices* (MUTCD).
- No State or Federal standards exist regarding bollards; therefore, the city should not be faulted for not using them.
- The Board has offered no data, test results, or other information to support its conclusion that a rigid barrier system would have prevented the driver from entering the farmers' market or have prevented deaths or injuries from occurring.

- A Superior Court judge determined that the city’s temporary traffic control plan was properly approved by a registered civil and traffic engineer.
- The Federal Highway Administration (FHWA) stated in its December 9, 2004, response to Safety Recommendation H-04-25 that the farmers’ market is considered a “special event” and is therefore addressed in the MUTCD.

The Safety Board disagrees with the petitioner’s statement that the city fully complied with city, State, and Federal guidelines in preparing and implementing its temporary traffic control plan, to include road closures, for the farmers’ market. In support of the petitioner’s claim that the city complied with established guidelines, the petitioner cites the FHWA’s response to Safety Recommendation H-04-25.<sup>8</sup> In its response, the FHWA indicated that the farmers’ market is considered a “special event” and therefore is addressed in the MUTCD. The petitioner said that this statement was significant because the city’s temporary traffic control plan for the farmers’ market “substantially complied with the specifications for temporary road closures for special events set forth in both the CTM as well as the MUTCD.” However, the city’s *Work Area Traffic Control Handbook*, which provides guidance for traffic control where work is being performed in a public street, to include news events, store openings, and commercial filming, suggests that the roadway be closed using two “ROAD CLOSED” signs mounted on type III barricades and that advance warning signs be located on the three approaches to the intersection, none of which the city provided. The CTM and the MUTCD also call for type III barricades and “ROAD CLOSED” signs. The city asserts in its petition that jurisdictions are allowed discretion in how they implement temporary traffic control plans and that the city deemed the type I barriers to be sufficient for the farmers’ market. The Safety Board notes that although the traffic control measures cited are intended as guidelines, not requirements, ensuring the *safe flow* of vehicular and pedestrian traffic in the area should have been the city’s first priority; this accident clearly demonstrated that the city’s measures did not ensure the safe flow of traffic in the case of the farmers’ market.

The petitioner also cites a Superior Court decision that the city of Santa Monica’s temporary traffic control plan was properly approved by the city’s registered civil and traffic engineer. The Safety Board observes that, according to testimony from the city’s engineer, the plan was approved in 1987.<sup>9</sup> Although the city’s temporary traffic control plan may have been properly approved, the Safety Board identified several weaknesses within the plan, including the failure to prescribe type III barriers. The city did not reevaluate the plan over the 16-year period from its approval until the accident.

The city stated that the Santa Monica Certified Farmers’ Market had operated continuously from 1981 to July 16, 2003, without similar automobile-versus-pedestrian incidents, and, therefore, the city could not have been expected to have foreseen such an event. However, engineering guidelines and practices, as well as local traffic patterns and volumes,

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<sup>8</sup> Safety Recommendation H-04-25 asked that the FHWA “Revise the *Manual on Uniform Traffic Control Devices*, Chapter 6, “Temporary Traffic Control,” to provide specific references and guidance on the use of barricades, barriers, crash cushions, and other devices, as appropriate, for road closure situations other than highway construction or maintenance.”

<sup>9</sup> During the Safety Board’s investigation, the director of the Santa Monica Certified Farmers’ Market told investigators the traffic plan had been developed in 1981, when the market was opened, and revised in 1986, when the market expanded to Second Street.

change over time. When the accident occurred, the city was still using a 16-year-old temporary traffic control plan. The Safety Board believes that, despite the long-running, predictable nature of the farmers' market, the city should have at least considered reevaluating the traffic plan and, in light of the potential hazard presented by vehicular traffic entering a location promoting the presence of vendor and pedestrian traffic, have been much more diligent in providing protection to pedestrians. The Safety Board therefore finds no basis to modify its original conclusion (finding 8) regarding traffic control.

With respect to finding 9, the petitioner states that the Safety Board's conclusion that the city should have used a rigid barrier system to protect pedestrians in its farmers' market is based on incomplete information or an inaccurate interpretation of the applicable guidelines concerning barriers for temporary road closures and the use of bollards. The petitioner also cites the FHWA letter concerning Safety Recommendation H-04-25, which stated that rigid barriers are not cost-effective.

The Safety Board neither endorses nor opposes the use of specific safety devices, including bollards. The Safety Board merely stated in its conclusion that a temporary or permanent rigid barrier might have arrested or reduced the forward motion of the accident vehicle, thereby preventing it from continuing into the farmers' market and eliminating or greatly reducing the number of casualties (10 fatalities and 63 injuries). Although the FHWA's letter suggests that rigid barriers are costly, the agency also acknowledged that rigid barriers can be effective in stopping vehicles. Santa Monica, at the Third Street pedestrian promenade, and New Orleans, at Bourbon Street, installed removable bollards to provide rigid, positive separations between vehicles and pedestrians.<sup>10</sup> The Safety Board reiterates its belief that the type I, A-frame plastic and wooden barricades that were used at the farmers' market are inadequate to prevent *any* vehicle from entering pedestrian space. Accordingly, the Safety Board finds no basis to modify its original conclusion (finding 9) regarding the benefits of a rigid barrier system.

The petitioner also questioned finding 10. The Safety Board issued Safety Recommendation H-04-25 because it was concerned that although the principles of incident management contained in the MUTCD and other related guidance are intended to apply to road closures for events such as the farmers' market, that application may not be clear to practitioners. Although the FHWA stated that the farmers' market was considered a special event and therefore addressed in the MUTCD guidelines, it also agreed with the Safety Board that practitioners may not be aware that the current MUTCD guidelines apply to temporary road closures. On February 3, 2005, the FHWA sent a memorandum to its field offices asking them to clarify to State and local jurisdictions that the guidance is applicable to such events. The FHWA sent a second letter to the Safety Board on October 5, 2007, updating its response to this recommendation. In the letter, the FHWA indicated that it planned to propose an amendment to the MUTCD recommending that a temporary traffic control plan be required for all special events and that it has discussed this change with the National Committee on Uniform Traffic Control Devices. The FHWA also said that it has been working with the American Association

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<sup>10</sup> For research on the crashworthiness of retractable bollards, see Dean C. Alberson, Wanda L. Menges, and Rebecca R. Haug, "Crash Testing and Evaluation of the Universal Bollard Security Systems Anti-Ram Retractable Bollards" (College Station, Texas: Texas Transportation Institute, The Texas A&M University System, February 2003). Research performed under contract number P2003007, project number 400001-UBS1, sponsored by Universal Bollard Security Systems, Midland, Texas.

of State Highway and Transportation Officials to include guidance intended for Section 5.2.3, “Bystanders, Pedestrians, and Bicyclists,” *Roadside Design Guide*, on the use of barriers for temporary road closures resulting from special activities in order to address the safety concern of potential injuries caused by a vehicle leaving the roadway. Because of the FHWA’s actions, Safety Recommendation H-04-25 is classified “Open—Acceptable Response.” The Safety Board is currently evaluating the FHWA’s most recent response to this recommendation. Given the FHWA’s response thus far to this recommendation and its current status, the Safety Board has determined that there is no reason to modify finding 10.

The Safety Board acknowledges the city of Santa Monica’s offer to participate in a “research group” to develop Federal guidelines for temporary traffic control devices, including various barrier alternatives. The Safety Board does not regulate or develop traffic guidelines and, therefore, suggests that the city of Santa Monica discuss this proposal with the FHWA.

Finally, the Safety Board finds no basis to modify the report’s probable cause, which stated that this accident was caused by the failure of the Buick driver to maintain control of his vehicle due to his unintended acceleration, for the reasons noted in the earlier discussion on findings 3 through 5. The Safety Board continues to believe that the driver of the accident vehicle inadvertently accelerated his vehicle instead of braking, collided with the Mercedes, and continued into the farmers’ market. In addition, the Safety Board finds no basis to modify the probable cause’s contributing factor, which states that the severity of the accident was increased by the lack of a barrier system to protect pedestrians in the farmers’ market area from errant vehicles. The Safety Board still believes, for the reasons noted in the earlier discussion on findings 8 and 9, that had the city of Santa Monica installed rigid barriers, the forward motion of the accident vehicle might have been arrested or reduced, preventing the accident vehicle from continuing into the farmers’ market, thus eliminating or reducing injuries.

Based on the foregoing, the review of the original accident investigation findings, and evidence submitted by the petitioner, the Safety Board finds no grounds to grant any modification to the findings or probable cause. Accordingly, the Safety Board denies the petition in its entirety.

Chairman ROSENKER, Vice Chairman SUMWALT, and Members HERSMAN, HIGGINS, and CHEALANDER concurred in the disposition of this petition for reconsideration.