



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: February 23, 2006

In reply refer to: H-06-14

Honorable John T. Gregorio
Mayor of Linden
City Hall
301 North Wood Avenue
Linden, New Jersey 07036

The National Transportation Safety Board is an independent Federal agency charged by Congress with investigating transportation accidents, determining their probable cause, and making recommendations to prevent similar accidents from occurring. We are providing the following information to urge the city of Linden to take action on the safety recommendation in this letter. The Safety Board is vitally interested in this recommendation because it is designed to prevent accidents and save lives.

This recommendation, which addresses speed enforcement, is derived from the Safety Board's investigation of a May 1, 2003, accident involving a passenger vehicle median crossover and subsequent collision with another vehicle¹ and is consistent with the evidence we found and the analysis we performed. As a result of this investigation, the Safety Board has issued three new safety recommendations, one of which is addressed to the city of Linden. Information supporting this recommendation is discussed below. The Safety Board would appreciate a response from you within 90 days addressing the actions you have taken or intend to take to implement our recommendation.

On May 1, 2003, about 2:11 a.m., eastern daylight time, a 1998 Mercedes Benz CLK320 (Mercedes), driven by a 34-year-old off-duty police officer, was traveling southbound on U.S. Route 1 (U.S. 1) through the city of Linden in Union County, New Jersey. The vehicle was traveling in the right lane of a six-lane divided highway. The weather was clear, and the roadway was dry, except for a puddle of water adjacent to a service station on the west side of the roadway.

Near milepost (MP) 41.4, the Mercedes, traveling 48 to 62 mph, hit the curb on the west side of the road and swerved to the left. The Mercedes crossed the other two southbound lanes; mounted and crossed an 11.5-foot-wide, 6-inch-high raised concrete curb median; and entered the northbound lanes, where it collided head on with a 1986 Ford Taurus (Ford) traveling in the left northbound lane. The Mercedes rolled up and over the Ford and landed on its roof. The

¹ For more information, read National Transportation Safety Board, *Passenger Vehicle Median Crossover and Head-On Collision With Another Passenger Vehicle, Linden, New Jersey, May 1, 2003*, Highway Accident Report NTSB/HAR-06/02 (Washington, DC: NTSB, 2006).

Mercedes slid approximately 80 feet across the northbound lanes and struck a wooden utility pole next to the east side of the roadway, where it came to rest straddling the right northbound lane and the grassy area to the east of the roadway. Following the collision, the Ford remained upright, rotated about 163 degrees counterclockwise, and slid about 50 feet, where it came to rest in the right northbound lane.

During the accident sequence, the Mercedes' contact with the raised median caused the vehicle to rotate about its longitudinal axis. A postcrash examination of the vehicles revealed that the right-front fender of the rotating Mercedes made contact with the Taurus' driver-side A-pillar. As a result, the crash forces were primarily directed into the passenger compartment of the Ford, dramatically increasing the severity of the crash.

The Ford was occupied by a 33-year-old driver and four passengers ranging in age from 18 to 31. The Mercedes driver, the Ford driver, and three of the four Ford Taurus passengers died at the scene. The fourth Ford passenger died several hours later in a hospital.

The National Transportation Safety Board determines that the probable cause of this accident was the Mercedes driver's loss of control of the vehicle due to alcohol impairment. Contributing to the severity of the accident were the lack of barriers separating traffic in the northbound and southbound traffic lanes and the failure of the Mercedes driver to wear his seat belt.

During the course of the accident investigation, Safety Board investigators determined that the Mercedes driver was traveling 48 to 62 mph at the time of the accident and, therefore, speeding; further, investigators discovered that few other drivers observe the posted speed limit of 40 mph on the accident segment of U.S. 1.

Signs² indicating the posted speed limit of 40 mph are located on both the northbound (near MP 41.2) and southbound (near MP 41.6) approaches to the accident area. Other than a 1965 New Jersey Department of Transportation (NJDOT) memorandum authorizing the 40-mph speed limit, the NJDOT had no records regarding speed limits on U.S. 1 in the city of Linden or any record indicating that a speed survey had ever been conducted in that area. According to the construction plans, the design speed for the accident segment of U.S. 1 is 45 mph.

The month after the accident, Safety Board investigators conducted a speed survey that recorded the speeds of 102 vehicles on U.S. 1, MP 41.4, from 9:45 p.m. to 12:15 a.m. The 85th percentile speed was 72 mph, and the median speed was 62 mph. Of the 102 vehicles measured, only 2 were traveling at or below the posted speed limit and 6 were measured to be traveling at speeds of 80 mph or greater, more than twice the speed limit. Seventy percent of the vehicles were traveling between 50 and 70 mph. At the request of the Safety Board, the NJDOT conducted two spot-speed studies near the accident location. Those studies, conducted during daytime hours for northbound vehicles only, yielded 85th percentile speeds of 58 mph and 52 mph, substantially higher than the posted 40-mph speed limit.

² U.S. Department of Transportation, Federal Highway Administration, *Manual on Uniform Traffic Control Devices*, Section 2B-10, Speed Limit Sign (R2-1) (Washington, DC: FHWA, 2003).

Linden Police Department (LPD) officials noted that they were aware of the high frequency of speeding on U.S. 1 in the vicinity of the accident but had not conducted directed speed limit enforcement there because of limited resources.³ The LPD was unable to provide the number of traffic citations issued on U.S. 1 because the department's database could not accommodate such a query.

The widespread disregard for the speed limit suggests a low level of speed enforcement on the accident segment of U.S. 1; the Safety Board therefore concludes that drivers are not complying with the posted speed limit of 40 mph on U.S. 1 in the vicinity of the accident and that the apparent lack of traffic law enforcement in this area may contribute to the higher travel speeds. Speeding⁴ contributed to 30 percent of fatal accidents in 2004,⁵ resulting in nearly 13,192 lives lost. Slightly less than 12 percent of all fatalities in New Jersey are speeding related.⁶ Further, speeding reduces a driver's ability to steer safely around curves or objects in the roadway, extends vehicle stopping distance, and increases the distance a vehicle travels while the driver reacts to a dangerous situation.⁷ Consequently, the Safety Board believes that the city of Linden should develop and implement a speed enforcement plan for U.S. 1.

The Safety Board recognizes that the increasing number of vehicles, drivers, and vehicle miles driven, combined with competing demands for law enforcement personnel, have made traditional patrol car enforcement less practical and efficient. However, other methods of speed management and enforcement, such as speed cameras or photo radar,⁸ variable message signs, and roadway design, are being implemented⁹ and should be considered. These methods are discussed in more detail in the Safety Board's report.¹⁰

Another hazardous characteristic of the accident site was the lack of a median barrier. The northbound and southbound lanes near MP 41.4 in the city of Linden are divided by an 11.5-foot-wide raised median with a 6-inch-high raised concrete curb median. American Association of State Highway and Transportation Officials (AASHTO) guidelines, which the NJDOT has adopted, suggest that raised curb medians, such as the one at the accident site, are best used on *low-speed* urban arterial roadways to prevent midblock left turns and provide a

³ As of August 18, 2005, the LPD consisted of some 136 officers. The patrol division is responsible for traffic law enforcement.

⁴ The National Highway Traffic Safety Administration considers an accident to be speeding related if the driver was charged with a speeding-related offense or if the officer indicated that racing, driving too fast for conditions, or exceeding the posted speed limit contributed to the accident.

⁵ National Highway Traffic Safety Administration, *Traffic Safety Facts 2004 Data: Speeding*, DOT HS 809 915 (Washington, DC: NHTSA, 2005).

⁶ C. Liu, C. Chen, R. Subramanian, and D. Utter, *Analysis of Speeding-Related Fatal Motor Vehicle Traffic Crashes*, DOT HS 809 839 (Washington, DC: NHTSA, 2005).

⁷ DOT HS 809 915.

⁸ New Jersey statute prohibits the use of speed cameras (New Jersey Statute 39:4-103.1). In 2004, the New Jersey legislature proposed legislation to authorize the use of photo-radar devices for enforcement purposes on certain local streets. The legislature did not act on this bill (Assembly Bill No. 2369, February 23, 2004).

⁹ Insurance Institute for Highway Safety, *Q&A: Speed—Law Enforcement* <www.iihs.org/research/qanda/speed_lawenf.html>.

¹⁰ NTSB/HAR-06/02.

place for pedestrians and signs.¹¹ The AASHTO guidelines also note that on high-speed roadways, striking a raised median curb can cause a driver to lose control, with the vehicle contacting the curb tripping, overturning, or becoming airborne, as was the case in this accident.

As a result of its investigation, the National Transportation Safety Board makes the following recommendation to the city of Linden:

Develop and implement a speed enforcement plan for U.S. Route 1. (H-06-14)

The Safety Board also issued safety recommendations to the Federal Highway Administration and AASHTO and reiterated a previously issued recommendation to the State of New Jersey. Please refer to Safety Recommendation H-06-14 in your reply. If you need additional information, you may call (202) 314-6177.

Acting Chairman ROSENKER and Members ENGLEMAN CONNERS, HERSMAN, and HIGGINS concurred in this recommendation.

[Original Signed]

By: Mark V. Rosenker
Acting Chairman

¹¹ (a) American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highways and Streets* (Washington, DC: AASHTO, 2004). (b) American Association of State Highway and Transportation Officials, *Roadside Design Guide* (Washington, DC: AASHTO, 2002).