Roadway Design and Road Safety

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Abstract

Human factors issues associated with roadway design and operations are critical components of improving highway safety. First, the three major components of highway safety are driver behavior, vehicle safety, and roadway safety. The general philosophy in roadside safety follows the priorities of (1) remove the hazard, (2) relocate the hazard, (3) make the hazard forgiving, and (4) shield the hazard. Roadway safety refers to that portion of overall highway safety that is determined by the roadway’s physical features such as road design, roadway signs, pavement markings, operating conditions, roadside objects (such as utility poles, signs, trees, guardrails), bridges, and intersections. It should be kept in mind that traffic barriers and crash cushions are hazards in themselves, and their use is limited to situations in which the severity of impacting the traffic barrier or crash cushion is less than that of impacting the hazard the barrier or crash cushion is shielding. The personal and economic costs of highway crashes to our citizens and communities are enormous. Here are a few points to consider: Unlike driver behavior and vehicle design, where significant gains have been made, the percentage of deaths related to crashes with roadside hazards has actually increased over the past two decades.

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