

Effect of vehicle dimensional characteristics on highway geometric design

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Abstract

Among the many issues surrounding vehicle size and weights, is the concern of the impact any change, particularly an increase in truck size, would have on the operational characteristics of rural and urban highways. The highway network in any given area is the result of an evolutionary process representing among other things a mix of geometric design principles and practices. Any significant changes in vehicle dimensional characteristics should require an assessment both of the geometric design practices and of the impact of vehicle change on the existing highway system in terms of operational aspects and safety.

This thesis contains recommendations for representative large vehicle dimensions, based on dimensional characteristics studies of large vehicles in the Eastern Province. Using the recommended large vehicle dimensions, the necessary changes required in the existing design standards for those highways geometric elements, which are affected by change in vehicle dimensions, have been determined. The purpose of the study was to summarize the effects that an increase in truck limits would have on highway geometric design elements, and whether various elements of highways system require redesign and modifications to facilitate their safe and efficient operations.