

Evaluating policy changes using a network simulation model

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Abstract

This study was conducted in Al-Khobar's downtown area, Saudi Arabia. Traffic in this area experiences excessive delay during peak hours on weekends. The aim of this study is to analyze the existing traffic condition using a validated simulation model. The study also aims at evaluating several proposed traffic policy changes as follows: changing direction of travel (one way) on all streets, prohibiting through movement along main shopping area, signalization of the major intersection, restricting parking along some streets. The network wide measures of evaluation used are average delay per vehicle, total delay, delay/vehicle-mile, travel time, moving time to total time, average speed, and vehicle trip.

The use of a Network Simulation Model (NETSIM) in Saudi Arabia was found to require changing some of the default values that are standardly used to simulate traffic in other countries. Such a change was needed to incorporate the driving behavior in the area. The results also showed the changes in delay and speed of vehicles for each proposed alternative.