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## Bus Priority on Roads Carrying Heterogeneous Traffic: a Study using Computer Simulation

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### Abstract

The desirable goal in passenger transportation is moving more people in fewer vehicles. This goal, in respect of road transport, can be attained by encouraging public transport modes like buses by assigning priority. This paper is concerned with application of micro simulation technique to study the impact of provision of reserved bus lanes on the flow of highly heterogeneous traffic on urban roads. The specific objectives of this paper are (i) to modify and validate a newly developed model of heterogeneous traffic flow using field observed data and (ii) to apply the validated simulation model to study the impact of exclusive bus lanes introduced on urban arterials for a wide range of traffic volume levels. The impact of introduction of an exclusive bus lane is measured in terms of the reduction in speed of other categories of motor vehicles, due to the consequent reduction in road space, over a wide range of traffic volume. The main finding of this paper is, that if an exclusive bus lane is provided under highly heterogeneous traffic conditions, (prevailing in Indian cities), then, the maximum permissible volume to capacity ratio that will ensure a level of service of C for the traffic stream comprising all the motor vehicles, except the buses, is about 0.53.

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