

REPLICATION OF FREEWAY WORK ZONE CAPACITY VALUES IN A MICROSCOPIC SIMULATION MODEL

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ABSTRACT

Evaluating the traffic impacts of work zones is vital for any transportation agency for planning and scheduling work activity. Traffic impacts can be accurately estimated using microscopic simulation models due to their ability to simulate individual vehicles and their interactions that can have a strong impact on various performance measures such as capacity, queue length, and travel delays. One challenge in using these simulation models is obtaining the desired work zone capacity values which tend to vary from one state to another. Thus, the default parameter values in the model which are suitable for normal traffic conditions are unsuitable for work zone conditions let alone for conditions specific to particular states. A few studies have been conducted on parameter selection to obtain the desired capacity values. However, none of these studies have provided a convenient look-up table (or a chart) for the parameter values that will replicate the field observed capacities. Without such provision it has not been possible for state agencies to utilize many of the research recommendations. This research provides the practitioner a simple method for choosing appropriate values of driving behavior parameters in the VISSIM micro-simulation model to match the desired field capacity for work zones operating in a typical early merge system.