

USE OF MICROSIMULATION FOR THE STUDY OF VEHICLE TRAFFIC ON URBAN ROADS

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ABSTRACT

The vehicular congestion, a result of the ever-increasing traffic in rapidly growing cities, has become a social issue exacerbated by ongoing road works and a lack of signage. The objective of this study is to analyze the Level of Service in vehicular flows at the urban intersections of the PE-1S road through microsimulation using the Synchro Trafficware software. Vehicle counts were conducted in the area for three consecutive days, with each day lasting 12 continuous hours. Subsequently, microsimulation was performed for both the current scenario and a future scenario, considering the high levels of vehicular congestion generated. The results obtained revealed that in the current scenario, the level of service at the intersections is classified as C and F, with delay times of 31.4 and 267.5 seconds, respectively. In the future scenario, the levels of service were classified as F and F, with delay times of 81.7 and 103.3 seconds, respectively. In conclusion, the determined level of service in the study area indicates a high index of vehicular congestion. It is anticipated that this congestion will become uncontrollable in the future, leading to discomfort for users. Therefore, it is recommended to implement lane expansions and exclusive turning directions in the area as optimal improvement alternatives, which optimize the service levels to C and D.

Keywords: Vehicular Congestion, Vehicular Flows, Road Intersection, Microsimulation, Service Level.

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