

# **IMPACT OF ROAD SIDE FRICTION ON CAPACITY OF URBAN ROAD – IN PATAN CITY**

**M Tech Dissertation**

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by

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# ABSTRACT

This study examines the relationship between the three main fundamental parameters of traffic e.g. speed, flow and density. Our main contribution is to estimate the capacity for an urban divided road with different encroached road width in CBD area where illegal on-street parking, standing vehicles and pedestrians movement affect the capacity.

To achieve an objective, traffic survey was conducted on two selected stretch of 30m trap length (two-lane one way) of urban road in Patan city of Gujarat State. Both the trap length located on same continuous road and almost 250 meters away from each other on the same Continuous road, its clear evidence that one section cannot affect another one.

The speed characteristics of sample data were collected to derive the DPCUs value and establishing the fundamental relationships. For the side friction data, two surveys were conducted such as parking accumulation survey and pedestrian volume count survey. Both the section named as Section A (combined effect of illegal on-street parking and pedestrian movement) encroached width is 3.5m and section B (only pedestrian movement) encroached width is 0.5 to 1.0m out of total road width of 7 meters.

The present study demonstrates that mix heterogeneous traffic stream can be converted into a homogeneous traffic stream by multiplying the total traffic volume. It will avoid the problem of estimation of PCU values for individual vehicle categories in the traffic stream. Traffic flow converted into three different PCU values and thereby to estimate the capacity of the particular stretch.

The capacity of sub-arterial (two-lane, one-way) road in (SECTION A had combined effect of on-street parking and pedestrians) present study estimated at 847 dynamic PCU/hr, 977 Indo-HCM PCU/hr and 2299 static PCU/HR. where in SECTION B (had only effect of parallel pedestrians movement) present study estimated capacity at 1968 dynamic PCU/hr, 2325 Indo-HCM PCU/hr and 5246 static PCU/hr.

The results are useful for evaluation of better traffic management measures and to decide appropriate parking policy, which will improve the roadway capacity of urban streets in CBD area under the influence of on-street parking.