



Speed-Flow-Density Relationship – A Case Study on Shivamogga City

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Introduction

Traffic Flow depends upon the driver's movement and the interactions done by the vehicles in between two points. Traffic Flow behaviour cannot be predicted only by the driver's movement which is more difficult to analyse. The basic parameters of traffic flow are speed, density and flow which are most essential to design, plan and operate the roadway facility [Parameswaran and G. Asaithambi] and these parameters would also help to determine the capacity of a roadway facility [C. Achyuta, R. Swamy, and C. R. Munigety]. Some models to determine the speed –density and flow relationship are given below:

- Green shield's macroscopic stream model: $v = v_f - (v_f / k_j) k$
- Greenberg's logarithmic model: $v = v_o \ln(k_j / k)$
- Underwood's exponential model: $v = v_f * e^{-(k/k_o)}$

The present study was carried out on a selected four-lane divided urban road in Shivamogga city. The speed- density- flow data was collected on the study stretch by manual counts covering both peak and non-peak hours, Based on the R^2 value, the best fitting model was selected for the determination of capacity from speed - flow relationship.

Materials and Methods

