

(ii) **Operating speed and design speed**

Design speed is the speed adopted for the design of each element of the road. Based on this speed, the design values for geometric elements of the roadway are selected.

“Operating speed” is the 85th percentile speed of cars at a time when traffic volumes are low. This means, that 85% of drivers will travel less than this speed while 15% will drive faster. The 85th percentile operating speed should be used for design.

(iii) **Road capacity, service flow and level of service.**

Level of Service: the qualitative measures describing operational characteristics of the road experienced by the motorists

Service flow: the maximum flow can pass through a given point during a given period of time under selected or specified level of service

Road Capacity: the Max flow rate of vehicle can reasonably be expected to traverse a point during a given period under the prevailing roadway traffic and control condition

(iv) **Capacity, saturation flow and degree of saturation for a traffic signal movement.**

Capacity: it is under signalized movement is determined by $(Q?)=s*(g/c)$. Capacity is an adjustment of the saturation flow rate that takes the real signal timing into account, since most signals are not allowed to permit the continuous movement of one phase for an hour.

Degree of Saturation: The degree of saturation for a movement is the ratio of a movements flow to capacity.

Saturation Flow: The Saturation Flow, (s) for each movement is the maximum departure rate which can be achieved when there is a queue. $s = S_b * ((F_w * F_g)/F_c)$

(v) **Trip distribution growth models and gravity models.**

Gravity Model: it estimated the number of trips between zones, based on the production from origin zone, the attraction to the destination zone and the travel impedance between zones (usually travel time or travel into account network conditions and are the major models for trips distribution, they are often called synthetic models since they do not rely on observed trip patterns..

Trip distribution growth model; it makes the future substantially the same, therefore there are only suitable for short term planning horizons. direct use of previous "observed" trip matrices, the assume that future trip making patterns remained the accuracy of base year trip matrix a major weakness of the model is that they don't take into account the changes in cost of future trips.

(vi) **Spot speed and space speed**

Space Speed: The speed of all vehicles in a single snapshot over a specific distance. (a photo of all speeds at an instant)

Spot Speed: The instantaneous speed of a vehicle at a specific point in time, (km/h).

(vii) **Capacity for an uninterrupted road**

Capacity: The maximum hourly (flow) rate at which vehicles can reasonably be expected to traverse a point during a given time period (eg. 15 minutes) under the prevailing roadway, traffic & control conditions. It is a measure of a highways ability to accommodate traffic and is a function of the physical and operational characteristics of the road and traffic.

(viii) **Flow ratio and degree of saturation for a signalised intersection movement**

Flow ratio: The ratio of arrival (demand) flow rate to saturation slow rate.

Degree of saturation: The ratio of arrival (demand) flow rate to capacity during a given flow period.

(ix) **Headway and spacing**

Headway: The time interval (or gap) between vehicle arrivals at a point, measured from the same point on vehicles

Spacing: The distance between the same point on two successive vehicles in a traffic lane

(x) **Trip generation and traffic generation**

Trip Attraction is to predict the number of trips attracted to each zone or to a particular land use. In many ways, estimating attractions is similar to estimating trip productions. Thus, cross-classification, regression, and discrete choice methods can be used to estimate the number of trips attracted to a zone.

Trip Generation the model is developed and used to estimate the total trips entering or leaving a parcel of land or a zone.