

ASSIGNMENT
ON
FORCASTING FUTURE TRAFFIC FLOW
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There are various principles which must be considered when forecasting traffic flow in a given environment. These principles are divided in the following;

- Basic principles of traffic demand analysis
- Demand modelling
- Land-use models
- Trip generation
- Trip distribution
- Modal split
- Traffic assignment

Principle of Traffic Demand Analysis

Traffic demand analysis is a conscious attempt which involves the modification of existing roads or the construction of new roads. However, this requires proper forecast of the road link under consideration which is done by acquiring data like traffic volume of the link.

In a situation whereby a new road has to be constructed, data such as the type of vehicle and standard axle must be considered in order to provide the bases for design for the roadway lifetime. Furthermore, knowing the standard axles provide room for factor of safety which is required for allowable pavement thickness and standard width of lanes which is appropriate for geometric design for the road.

The traffic demand analysis provides a lot of advantages to road user more so for future references such as

- Provision of travel behaviour within an area,
- Adequate knowledge of traffic volume within an area,
- Data on existing highway designs etc.

Demand Modelling

For a proper and accurate highway modelling, the demand modelling requires all parameters for road activity to be identified and quantified.

However, for every trip that is completed, there is a purpose to it and once the purpose for the trip is asserted, the modelling process can work simultaneously to generate an accurate model.

Concurrently, the incorporation of purpose for every trip in a model helps to simplify a model. that is, when trip time and routine selected is taken into consideration.

Example can be seen during peak hours of traffic for work hours. For every road user going to work in the morning or returning from work in the evening the shortest, fastest and less congested road are the bases for the routine to be used.

Land-Use Model

This model can be generated through the frequent activity of people and active area in location under consideration. However, the movement to people is the fundamental prerequisite for transport planning process. For example, if the movement of people from routine A to B is favoured by more people compared to C to D, during modelling routine A to B becomes the primary route for design.

For a proper land use model, the collected data can be used to provide a forecast of future development in that area.

Trip Generation

This records the number of trips that is made in and out of a given zone and the total number of trips that can be produced in that area. Also, the denser and developed the area under consideration is, the more the income revenue that can be generated through transportation. Example can be seen in a situation where residence of an area have to go to a specific location to purchase necessities like food or have to go work. The use of commercial vehicle for every trip at peak hours can generate a lot of revenue.

Trip Distribution

This is also known as destination choice or zonal interchange analysis. This step created a 'trip table' by pairing a complete trip (origin to destination) in a table. This helps the development of transport planning model.

Modal Split

This can be defined as a decision process between different transport alternatives. It is given by a combination of an individual's socio-demographic factors, spatial characteristics, influence etc.

Modal trip calculates the proportion of trips between each origin and destination that use different transport modes.

Traffic Assignment

This mode allocates trip between each origin to destination by a particular mode using different routes. This is calculated under assumption that a driver will choose a route with the shortest travel time from his present location to his destination.