

The aim of this research is to develop traffic queue prediction models at traffic detector for signalized junctions. The CU Traffic Simulation Model is used as a basic tool.

First, vehicles are generated onto a simple network in which traffic detectors were incorporated. Results of the simulation were traffic volume pass over detectors entering signalized junction and volume and time occupancies detected at detectors. Next, the queued-length model is developed based on traffic parameters : volume and time occupancy. Finally , a suitable position of traffic detectors is recommended.

The queue length models were developed into two parts : based on traffic volume and time occupancy . If traffic volume parameter were used, a suitable position of detector from stop-line for a uniform arrival model is approximately 50 percent of road link. If the traffic arrival is random, the suitable position is approximately 90 percent. With regard to time occupancy, the suitable position of traffic detector from the stop-line is approximately 40 percent and 90 percent for uniform and random arrival, respectively.

From this research, it can be concluded that traffic queue at signalized junctions can be predicted by traffic volume or time occupancy. If the traffic volume was used the traffic stream model, namely Greenshield, was applied. Time occupancy could directly be used for prediction of queue length, by using simple linear regression.