

Study on Peak-hour Traffic Reduction and its Influence on the Pasyala Junction.

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Abstract

When traffic demand meets or surpasses the highway system's available capacity, there are more vehicles on the road than there is sufficient space on the road. The volume of traffic varies according to the time of year, the day of the week, and even the hour. This research was carried out to find an appropriate method to reduce traffic congestion. And this study is based on the Pasyala junction which is an un-signalized skew intersection where there is huge traffic congestion during rush hour. On Colombo Kandy road, the Pasyala intersection is located. At this four-way intersection, the Colombo Kandy road and the Attanagalla Giriulla road meet. Both roads are two-lane roads with one lane on each side in this location. The intersection is congested during rush hour with vehicles from office transit systems, public and private buses, school buses, personal vehicles, and other utility vehicles. Primary data were collected by conducting a reconnaissance survey around the junction. As well as secondary data was gathered by CCTV video-based manual traffic count survey by implementing CCTV cameras close to the junction. CCTV Cameras are specially mounted to conduct a manual classified traffic count survey from 6 AM to 9 PM. According to survey results, obtained and evaluate traffic characteristics such as peak periods, vehicle contributions by each turning movement, vehicle volumes, major and minor condition and compared results with 2016 manual classified survey which was conducted by RDA and obtained growth differences related to the junction. The traffic data were extrapolated based on these growth rates. Following past studies, several alternatives were studied as alternative solutions. Established on the data, observations, and results, evaluate traffic signal implementation through VISSIM simulation to forecast and recommend alternative solutions. The considerable parameters such as design speeds were used for the VISSIM simulation and they were validated according to the existing traffic behavior.

Keywords: *skew intersection, growth rate, peak hour, traffic signal*

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