

## **Traffic Impacts at Dehiwala Flyover on Level of Service of the Intersection: Case Study**

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### **Abstract**

Delay is the principal measure of level of transportation service at a signalized intersection. It was discovered that Dehiwala intersection has being over burdened with newly constructed flyover resulting in traffic delay problems. In addition to designing appropriate access for new developments, it is vital to maintain a satisfactory level of service. Therefore, this traffic impact study will be helpful to determine the need for any improvement.

Data were collected through direct field surveys (delay survey, speed survey, classified traffic counts, Queue length survey, Pedestrian counts and Bus circulation survey) under mixed traffic operations and poor lane discipline prevailing at Dehiwala intersection. It was found that traffic congestion occurs at the intersection from 8.00 a.m. to 9.00 a.m. During this period the overall efficiency of the intersection is unacceptable. Queue formation of buses at the far side bus stop towards Colombo reaches 20 buses during the peak blocking the entire intersection. The adverse impacts which causes delay are long queues which form along Galle main road (A2) in both directions thereby vehicles entering the intersection from Galle side and Colombo side waste time in queues. Reduction in approach speeds at all four approaches were observed during the study period.

After collecting data on queue formation, waiting time for buses, traffic flow, delay for vehicles and average speed, it was observed that there is no advantage of installation of flyover at the location. Observed average speed on Galle Road during the peak period is around 8 km/h having the flyover with two lanes in the same direction. Compared to the delay of vehicles, calculated Level of Services of Four approaches Hills Street, Galle Road towards Galle, Station Road are in under category 'D' and the Galle Road towards Colombo is under category of 'E'. Considering factors which contribute to above impacts, measures such as relocation of far side bus stops, area traffic management plan, expedite the extension of Marine Drive up to Dehiwela are recommended to overcome traffic congestion and allow the intersection to maintain a satisfactory level of service.

Keywords: Traffic Impacts, Control Delay, Level of Service

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