

## Capacity Loss of Urban Arterial Roads under the Influence of Bus Stop

**Authors :** Sai Chand, Ashish Dhamaniya, Satish Chandra

**Abstract :** Curbside bus stops are provided on urban roads when sufficient land is not available to construct bus bays. The present study demonstrates the effect of curbside bus stops on midblock capacity of an urban arterial road. Data were collected on seven sections of 6-lane urban arterial roads in New Delhi. Three sections were selected without any side friction to estimate the base value of capacity. Remaining four sections were with curbside bus stop. Speed and volume data were collected in field and these data were used to estimate the capacity of a section. The average base midblock capacity of a 6-lane divided urban road was found to be 6314 PCU/hr which was further referred as base capacity. Effect of curbside bus stop on midblock capacity of urban road was evaluated by comparing the capacity of a section with curbside bus stop with that of the base capacity. Finally, a mathematical relation has been developed between bus frequency and capacity loss. Also a relation has been suggested between dwell time and capacity loss. The developed relations would be very useful for practising engineers to estimate capacity loss due to bus stop.

**Keywords :** bus frequency, bus stops, capacity loss, urban arterial

**Conference Title :** ICCSCE 2014 : International Conference on Civil, Structural and Construction Engineering

**Conference Location :** Singapore, Singapore

**Conference Dates :** July 05-06, 2014