

A partial solution to ease up traffic congestion in Nugegoda  
metropolitan area




A. A. Princely Liyanage

May 2002

To my ever loving daughter Paramee, wife and parents

## Declaration

I do hereby declare that the project report titled "A partial solution to ease up traffic congestion in Nugegoda metropolitan area " contains my own work and that no part of this report has been submitted previously to this or any other University or Institution.

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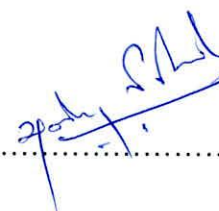
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**A partial solution to ease up traffic congestion in  
Nugegoda metropolitan area**

A Thesis

By

A.A. Princely Liyanage

Submitted in partial fulfilment of the requirements for the

**Postgraduate Diploma**

**in**

**Industrial Mathematics**

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## ABSTRACT

Congestion, i.e. abnormal accumulation of vehicles, cannot be brought down to zero level in a commercial city. On the other hand, we, as responsible citizens of this country, should not allow this condition to persist or to get any worse because the consequences of congestion are mostly irrecoverable. Two of the most threatening factors of congestion are the high rate of import of vehicles and the poor planning for the setting up of commercial and various other establishments in close proximity to a junction.

A critical analysis of the problem of congestion in various major towns and cities in and on the periphery of Colombo led to the choosing of the Nugegoda metropolitan area for further research into the problem. A sharp increase in business activities in Nugegoda due to the closure of some important roadways leading to the one time business capital Pettah and a comparatively large number of schools and other public and private establishments falling within a radius of 1/2 a kilometre from the Nugegoda junction are the leading factors for the congestion in this area. Congestions in the adjacent junctions, namely Gamsaba, Delkanda, Kattiya and Supermarket, were found to have direct impact on congestion at Nugegoda junction.

The turning movements of vehicles at each junction, except Kattiya, were obtained through videoing. Manual method was used at Kattiya for the same. Details of car parking, pedestrian flows and accident data too were collected. Improper control of signal lights at Nugegoda junction, on-street parking, lack of parking facilities, pavement hawkers, lack of alternative routes and disorderly movements of pedestrians too were identified as some of the other contributing factors of traffic congestion.

The study thus led to the calculation of a new set of time allocations for signal lights at Nugegoda junction and proposals for the implementation of signal lights at those junctions where they are non-existent at present.

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## **LIST OF ABBREVIATIONS**

MC	-	Municipal Council
MCC	-	Manually Classified Count
O-D	-	Origin-Destination
PC	-	Provincial Council
PCU	-	Passenger Car Unit
PRDA	-	Provincial Road Development Authority
PT	-	Public Transport
RCDC	-	Road Construction and Development Company
RDA	-	Road Development Authority
UC	-	Urban Council
UDA	-	Urban Development Authority
UoM	-	University of Moratuwa
WP	-	Western Province

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