

H.T.I.

CIVIL ENGINEERING COURSE

DIPLOMA PROJECT

TRAFFIC ANALYSIS

C/941

SAVOULLA VASSILIOU

JUNE 2001

HIGHER TECHNICAL INSTITUTE

CIVIL ENGINEERING COURSE

DIPLOMA PROJECT

TRAFFIC ANALYSIS

C/941

SAVOULLA VASSILIOU

JUNE 2001

HIGHER TECHNICAL INSTITUTE	PROJECT NO. 3211
----------------------------------	---------------------

**HIGHER TECHNICAL INSTITUTE  
CIVIL ENGINEERING DEPARTMENT**

*TRAFFIC ANALYSIS*

By: Savoulla Vassiliou

Project Report

Submitted to  
The Department of Civil Engineering  
of the Higher Technical Institute  
in partial fulfillment of the requirements  
for the diploma of

Technician Engineer

in

Civil Engineering

June 2001

HIGHER TECHNICAL	PROJECT NO. 2911
---------------------	---------------------

## ACKNOWLEDGMENTS

I would like to thank my supervisor Mr. Nicos Kathijotes, lecturer at Higher Technical Institute, who gave me guidance and advice I needed to complete this Project, my external assessor Mr. Yiangos Yiangou, Mr. Renos Serghides from the Department of Transportation of the Public Works Department and the Civil Engineering Department of the Higher Technical Institute for their valuable assistance, contributing to the successful accomplishment of this Project.

I would also like to thank my friends and family for their love and support during the preparation of this Project.

## LIST OF CONTENTS

Part		Page
	Summary-Objectives	
	Introduction	1
 <b>Part I – Road traffic problems in urban areas</b>		
1-1	Traffic flow characteristics	3
1-2	Capacity and Level of Service	6
1-3	Traffic congestion	8
1-3.1	Delays	9
1-4	Intersections	10
1-5	Accidents	13
1-6	Parking	21
1-7	Air pollution	25
1-8	Noise pollution	27
 <b>Part II – Methods of traffic analysis</b>		
2-1	Measurement of traffic flow	29
2-1.1	Methods of counting	29
2-1.2	Automatic traffic counts	29
2-2	Studies related with speed and traffic flow	33
2-2.1	Speed studies	33
2-2.2	Delay studies	36
2-2.3	Volume studies	38
2-2.4	Origin and Destination surveys	40
2-2.5	Parking survey	50
2-2.5.1	Parking supply survey	50
2-2.5.2	Parking usage survey	53
2-2.5.3	Concentration study	53
2-2.5.4	Duration survey	55
2-2.5.5	Parker interview survey	57
2-2.6	Accident studies	58

### **Part III – Practical part**

3-1	Introduction	65
3-2	Traffic Volume Counting	66
3-3	General Conclusions	71
3-4	Problems Observed	73
3-4.1	Traffic Situation	73
3-4.2	Accident Status	74
3-5	Proposed Solutions	76
	References	77
	Appendix	78
	Photographs	79

## **SUMMARY and OBJECTIVES**

**Project title:** Traffic Analysis

### **Objectives:**

1. To define conflict points and problems that may occur at traffic junctions.
2. To take actual counts at a junction or road span.
3. To carry out accident analysis.
4. To suggest corrective methods that will be applicable at the intersection under investigation.

### **Terms and conditions:**

The intersection under investigation was the Ayiou Prokopiou Street and Griva Digeni Avenue junction, with analysis of the Archangelou Michael Avenue. These roads can be seen on the map provided in the Appendix.

Student: Savoulla Vassiliou  
Supervisor: Mr. Nicos Kathijotes  
External Assessor: Mr. Yiangos Yiangou