

HIGHER TECHNICAL INSTITUTE

CIVIL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

# TRAFFIC NOISE POLLUTION

C/940

BY

THEODOROU GEORGIOS

JUNE 2001

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# TRAFFIC NOISE POLLUTION

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Theodorou Georgios

Project Report

Submitted to:

THE DEPARTMENT OF CIVIL ENGINEERING

Of the

HIGHER TECHNICAL INSTITUTE

NICOSIA ,CYPRUS

In the partial fulfillment of the  
Requirements for the diploma of  
Technician engineer

In

CIVIL ENGINEERING

(C/940)

June 2001

HIGHER TECHNICAL INSTITUTE	PROJECT NO. 3210
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## **Acknowledgments**

I would like to thank the following people for their valuable help in the completion of my project: Mr. Nicos Kathijiotis my supervisor, Mr. Michalis Loizides, Mr. Antonis Antoniou, Mr. Kostas Papastauros and my friend Andreas Yiapatos.

## **Summary**

The traffic noise is a main problem in nowadays. In this project lots of things are examined. In the first part their being examined the transportation and air quality planning and the impact of transportation. At the second part the noise was studied. There is also a significance reference about the ways which noise can be reduce.

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**Summary**

### **Part 1**

**Transportation planning**

**Transportation and air quality planning**

**The environmental impact of noise and the noise situation in the European union**

**Transport and environment**

### **Part 2**

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**Types of noise**

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## INTRODUCTION

News stories related to environmental noise problems abound. Some stories are dramatic, most less so, but huge effort and great sums of money are often invested in conflicts involving environmental noise.

Environmental noise is a worldwide problem. However, the way the problem is dealt with differs immensely from country to country and is very much dependent on culture, economy and politics. But the problem persists even in areas where extensive resources have been used for regulating, assessing and damping noise sources or for creation of noise barriers. For example, huge efforts have been made to reduce traffic noise at source. In fact, today's cars are much quieter than those manufactured ten years ago, but the traffic volume has increased so much that the effect of this effort has been wiped out and the annoyance level has increased. Manufacturing quieter cars might have eased the problem for a period but it certainly hasn't removed it.

There are no worldwide estimates of the impact and cost of environmental noise. However, one prominent example covering most of Europe does exist — the European Union's Green Paper on Future Noise Policy (1996).

The Green Paper estimates that, in terms of the number of people affected by noise, 20% of the population (i.e., 80 million people) suffer from unacceptable noise levels that cause sleep disturbance, annoyance and adverse health effects. An additional 170 million citizens in Europe live in areas where noise levels cause serious annoyance during the daytime

In financial terms, environmental noise costs society an estimated 0.2% to 2% of the Gross Domestic Product. Even the lower of these figures represents an immense cost

## **Environmental Noise Protection**

Noise protection programmes differ from country to country. Legal requirements are not identical, techniques and methods differ, and political focus varies. However, there are common aspects to the work of all environmental noise officers.

- Planning new developments of residential areas, industrial sites, highways, airports, etc.
- Handling complaints from citizens, either during the planning process or afterwards
- Assessing the compliance/non-compliance of noise sources (industrial plants, fairgrounds, airports, highways, railroads, etc.) according to regulations and legislation
- Within any of these major areas of work, the environmental officer can be called upon to perform many tasks including:
  - Making measurements in the field
  - Assessing noise from specific sources
  - Calculating expected noise levels



- Mapping noise levels
- Preparing reports for citizens or decision makers
- Archiving and retrieving data
- Acting as an expert witness

These tasks are demanding and, considering the extent and significance of noise pollution, a proper level of understanding of the issues is required, not only from professionals working in the field but also from decision makers and citizens.