



**HONG KONG GOVERNMENT
ENVIRONMENTAL PROTECTION
DEPARTMENT**

**SCOPING STUDY FOR PROVIDING RETROACTIVE ROAD TRAFFIC NOISE
MITIGATION MEASURES**

**FINAL REPORT
(Volume 1 : Main Report)**

CONQUEROR

ENPAC

**HONG KONG GOVERNMENT
ENVIRONMENTAL PROTECTION DEPARTMENT**

**SCOPING STUDY FOR PROVIDING
RETROACTIVE ROAD TRAFFIC
NOISE MITIGATION MEASURES**

**FINAL REPORT
(Volume 1: Main Report)**

ENPAC Limited

December 1995

TABLE OF CONTENTS

List of Tables

List of Figures

1. INTRODUCTION
 - 1.1 Background
 - 1.2 Terms of Reference
 - 1.3 Structure of the Report
2. STUDY METHODOLOGY
 - 2.1 General Approach
 - 2.2 Noise Assessment Criteria
 - 2.3 Initial Assessment of Noise Impacts
 - 2.4 Assessment of Potential for Noise Mitigation
3. IDENTIFICATION OF PRACTICABLE DIRECT TECHNICAL REMEDIES
 - 3.1 Representative Road-receiver Configurations
 - 3.2 Available Forms of Practicable Noise Mitigation
4. APPLICATION OF NOISE MITIGATION MEASURES TO EXISTING ROADS IN HONG KONG
 - 4.1 Considerations in Application to Existing Roads
 - 4.2 Examples of Successful Application of Noise Mitigation Measures in Hong Kong
5. DEVELOPMENT OF SCREENING CRITERIA FOR PROVIDING RETROACTIVE NOISE MITIGATION
6. SELECTION OF EXISTING ROADS FOR RETROACTIVE NOISE MITIGATION MEASURES
7. PRELIMINARY APPRAISAL AND COST ESTIMATION FOR NOISE MITIGATION
8. PRIORITIZATION OF NOISE MITIGATION WORKS PROGRAMME
9. DISCUSSION
10. CONCLUSIONS AND RECOMMENDATIONS
 - 10.1 Conclusions
 - 10.2 Recommendations

LIST OF TABLES

Table 1 Analysis of Traffic Noise Complaints Statistics

Table 2 Representative Road-Receiver Configurations

Table 3 Noise Barriers and Enclosures in Hong Kong

Table 4 Roads with Potential for Retroactive Noise Mitigation

Table 5 Unit Costs for Noise Mitigation Measures

Table 6 Prioritization of Noise Mitigation Works

Table 7 Implementation Programme for Retroactive Noise Mitigation Measures

LIST OF FIGURES

- | | |
|------------|---|
| Figure 1 | Typical Road-Receiver Configuration (Type 'A') |
| Figure 2 | Typical Road-Receiver Configuration (Type 'B') |
| Figure 3 | Typical Road-Receiver Configuration (Type 'C') |
| Figure 4 | Typical Road-Receiver Configuration (Type 'D') |
| Figure 5 | Typical Road-Receiver Configuration (Type 'E') |
| Figure 6 | Typical Road-Receiver Configuration (Type 'F') |
| Figure 7 | Typical Road-Receiver Configuration (Type 'G') |
| Figure 8 | Typical Road-Receiver Configuration (Type 'H') |
| Figure 9 | Typical Road-Receiver Configuration (Type 'I') |
| Figure 10 | Typical Road-Receiver Configuration (Type 'J') |
| Figure 11 | Typical Road-Receiver Configuration (Type 'K') |
| Figure 12 | Conceptual Arrangement of Noise Mitigation Measures (Sheet 1 of 4) |
| Figure 13 | Conceptual Arrangement of Noise Mitigation Measures (Sheet 2 of 4) |
| Figure 14 | Conceptual Arrangement of Noise Mitigation Measures (Sheet 3 of 4) |
| Figure 14A | Conceptual Arrangement of Noise Mitigation Measures (Sheet 4 of 4) |
| Figure 15 | Flow Chart for Selection of Noisy Road with Potential for Retroactive Noise Mitigation |
| Figure 16 | Conceptual Arrangement of Noise Mitigation Measures
Island Eastern Corridor - Tai Koo Shing (Sheet 1 of 1) |
| Figure 17 | Conceptual Arrangement of Noise Mitigation Measures
Tung Tau Tsuen Road (Sheet 1 of 1) |
| Figure 18 | Conceptual Arrangement of Noise Mitigation Measures
Che Kung Miu Road (Sheet 1 of 1) |
| Figure 19 | Conceptual Arrangement of Noise Mitigation Measures
Tai Chung Kiu Road (Sheet 1 of 1) |
| Figure 20 | Conceptual Arrangement of Noise Mitigation Measures
Ma On Shan Road (Sheet 1 of 1) |
| Figure 21 | Conceptual Arrangement of Noise Mitigation Measures
Ting Kok Road (Sheet 1 of 1) |
| Figure 22 | Conceptual Arrangement of Noise Mitigation Measures
Po Lam Road North (Sheet 1 of 1) |
| Figure 23 | Conceptual Arrangement of Noise Mitigation Measures
Fung Shue Wo Road (Sheet 1 of 1) |
| Figure 24 | Conceptual Arrangement of Noise Mitigation Measures
Tai Po Road - Fanling (Sheet 1 of 1) |

- Figure 25 **Conceptual Arrangement of Noise Mitigation Measures
Tuen Mun Road (Sheet 1 of 3)**
- Figure 26 **Conceptual Arrangement of Noise Mitigation Measures
Tuen Mun Road (Sheet 2 of 3)**
- Figure 27 **Conceptual Arrangement of Noise Mitigation Measures
Tuen Mun Road (Sheet 3 of 3)**
- Figure 28 **Conceptual Arrangement of Noise Mitigation Measures
Castle Peak Road - Hung Sui Kiu (Sheet 1 of 1)**
- Figure 29 **Conceptual Arrangement of Noise Mitigation Measures
Castle Peak Road - Ping Shan (Sheet 1 of 1)**
- Figure 30 **Conceptual Arrangement of Noise Mitigation Measures
Hiram's Highway (Sheet 1 of 1)**
- Figure 31 **Conceptual Arrangement of Noise Mitigation Measures
Tolo Highway (Sheet 1 of 2)**
- Figure 32 **Conceptual Arrangement of Noise Mitigation Measures
Tolo Highway (Sheet 2 of 2)**
- Figure 33 **Conceptual Arrangement of Noise Mitigation Measures
Cheung Pei Shan Road (Sheet 1 of 1)**
- Figure 34 **Conceptual Arrangement of Noise Mitigation Measures
Junk Bay Road (Sheet 1 of 1)**