

1. INTRODUCTION

1.1 Background

- 1.1.1 In January 1994, the Government carried out the second review of the 1989 White Paper "Pollution in Hong Kong - A Time to Act" and identified the need to review the practicability of reducing noise impacts due to traffic on existing roads. As a consequence, a two-stage study was launched to assess the feasibility of reducing traffic noise using direct technical remedies.
- 1.1.2 The Stage 1 "Scoping Study for Providing Retroactive Road Traffic Noise Mitigation Measures" was completed in December 1996 and a list of roads with potential for retroactive noise mitigation was identified. The Stage 2 "Feasibility Study for Providing Retroactive Road Traffic Noise Mitigation Measures" continued to assess the engineering feasibility of the recommendations made in Stage 1 study and was completed in mid 1998.
- 1.1.3 Flyovers were specifically excluded from both of these studies. As most of the existing flyovers were located in densely populated areas and largely sat on top of other roads, independent structures for noise mitigation such as barriers and enclosures were considered impractical. However with the latest engineering know-how, direct remedies on existing flyovers do not appear to be infeasible. Subsequently, a separate study was commissioned in October 1996 and is referred as "Scoping Study for Providing Direct Technical Remedies on Existing Flyovers" (hereafter called 'Scoping Study').
- 1.1.4 In the Scoping Study, a total of 188 existing flyovers were examined. Taking into account the location of flyovers, government constraints, special requirements and acoustic effectiveness of the direct noise mitigation measures, 11 flyovers were recommended for further investigation. In order to optimize the utilization of resources and to meet the tight time frame, 3 of these flyovers have been selected for a detailed assessment of engineering feasibility in providing direct technical remedies, namely, Kwai Chung Road Flyover, Ap Lei Chau Bridge and Tsing Tsuen Bridge. The selection covers typical flyover-receiver configurations, type of direct technical remedies and both high/low implementation priorities.
- 1.1.5 Feasibility Study on Kwai Chung Road Flyover has recently been completed by the same Consultant Team under the supplementary assignment in the "Feasibility Study for providing Retroactive Road Traffic Noise Mitigation Measures". The other two flyovers, namely Ap Lei Chau Bridge and Tsing Tsuen Bridge, are covered by the assignment in this feasibility study. The findings on the three flyovers would be presented in the Final Report in this study.

1.2 The Assignment

- 1.2.1 Maunsell Consultants Asia Ltd. in association with Enpac Ltd., Hassell Ltd. and Consolidated Consulting Engineers Ltd. were commissioned by the Environmental Protection Department (EPD) to perform the Study under Agreement No. CE 95/97 in June 1998. The overall study is under the management of the Noise Management and Policy Group (NMPG) within EPD.
- 1.2.2 The Study is primarily focused on the engineering feasibility providing noise mitigation measures such as barriers and enclosures on the two existing flyovers. Study results of the separate study on Kwai Chung Road Flyover under "Feasibility Study for Providing Retroactive Road Traffic Noise Mitigation Measures" would also be incorporated into this Study Report. The findings of the Study would form the basis for the formulation of implementation strategy to tackle traffic noise from existing flyovers.
- 1.2.3 The specific objectives, approach, methodology, task definition, liaison, and programme of the Study were covered in the Inception Report issued in 13th July 1998. Services as stated in Clause 6 of the Brief of the Agreement No. CE 95/97 were provided.

1.3 Structure of the Report

- 1.3.1 This report summaries, concludes and generalises the findings of the above assignment and is divided into the following sections.
- 1.3.2 Section 1 introduces the background and objectives of the Study.
- 1.3.3 Section 2 highlights the methodology adopted in the Scoping Study on Existing Flyovers and the changes since the completion of the Scoping Study.
- 1.3.4 Section 3 outlines the approach and methodology adopted in the Study.
- 1.3.5 Section 4, 5 & 6 describe the scheme development process for the selection of appropriate and effective direct technical mitigation measures at the three existing flyovers, including Ap Lei Chau Bridge, Tsing Tsuen Bridge and Kwai Chung Road Flyover.
- 1.3.6 Section 7 presents the simplified assessment procedures for providing noise mitigation measures on existing flyovers in a more generalised basis.
- 1.3.7 Section 8 outlines the development of priority ranking system.
- 1.3.8 Section 9 provides recommendations on implementation strategy.
- 1.3.9 Section 10 summarises the findings of the above and give recommendation if applicable for any further site investigation, surveys and study necessary to fulfil the Objectives of the Study.