

## Chapter 1 INTRODUCTION

### 1.1 *Preamble*

- 1.1.1 Wilbur Smith Associates Ltd in association with ERM Hong Kong Ltd and others have been commissioned by Transport Department to undertake the Third Comprehensive Transport Study (Agreement No. CE84/96) (hereafter referred to as the Study). As part of the Study, a Strategic Environmental Assessment (SEA) was required. ERM undertook the SEA to address the environmental implications of different transport scenarios developed from the Third Comprehensive Transport Study (CTS-3).
- 1.1.2 The Study commenced on 29 August 1997 and this SEA Technical Report is the fifth output of the SEA which reports the environmental assessment conducted on the Main Model Runs, and includes the Recommended Transport Strategy up to year 2016.

### 1.2 *Background of CTS-3*

- 1.2.1 In 1973 the Comprehensive Transport Study (CTS-1) was commissioned by Government to prepare an infrastructure and policy programme for Hong Kong. This study was comprehensive in the sense of examining all modes of transport for the whole Territory, as compared with previous studies which had examined individual modes or sub-areas. The study carried out surveys, developed transport models and investigated the requirements to "Keep Hong Kong Moving" for the then foreseeable future. The most lasting results of CTS-1 were the decision to construct the MTR system and the realization that it would be necessary to restrain private car travel.
- 1.2.2 The study made many other recommendations including the development of a trunk road system containing the Aberdeen Tunnel, the Island Eastern Corridor and West Kowloon Corridor. It also recommended that tolls at Lion Rock Tunnel should be used to control traffic to achieve acceptable levels, and that consideration should be given to the imposition of toll charges on major expressways. Overall, it formed the basis of transport planning in the Territory up to the mid-1980s.
- 1.2.3 In 1986-1989, the Second Comprehensive Transport Study (CTS-2) formulated a transport strategy for the Territory up to the year 2001 for a population forecast of 6.3 million under a "Kai Tak Retained" scenario. In view of the considerable uncertainties of transport planning at the time, the study recommended that the implementation of the transport development strategy should be monitored, and that the strategy should be updated at regular intervals, taking into account any new development plans.
- 1.2.4 Accordingly, from 1990 to 1993, the Updating of the Second Comprehensive Transport Study (CTS-2 Update) was undertaken to review the CTS-2 strategy, taking into account the results of the Port & Airport Development Strategy (PADS) Study. The CTS-2 Update includes the relocation of Hong Kong's airport to Chek

Lap Kok, Metroplan and various reclamation studies. The planning horizon was also extended to 2011 for a population forecast of 6.6 million.

1.2.5 Subsequent to CTS-2 Update, a number of major transport and planning studies have been completed, with over 40 listed in the Brief. The most relevant to the Third Comprehensive Transport Study (CTS-3) include:

- *Territorial Development Strategy Review (TDSR)* - completed in mid-1996 and which has formulated an integrated land use strategy up to 2011;
- *Crosslinks Study* - completed in July 1996, has assessed the ability of Hong Kong's environment and transport infrastructure system to cope with additional traffic generated by additional road links from Mainland China. A Crosslinks Further Study is now being carried out by Planning Department;
- *Railway Development Study* - led to the Railway Development Strategy of December 1994, giving a rail infrastructure strategy to meet forecast rail demand up to 2011; and
- *Working Party on Measures to Address Traffic Congestion* - prepared a list of policies and a package of measures that will form one of the bases of this study.

1.2.6 In addition, two other studies are currently under way that will rely on CTS-3 to provide major inputs:

- *Feasibility Study on Electronic Road Pricing (ERPFS)* - is due to be completed in 1999, and will advise Government on the applicability of ERP to Hong Kong; and
- *Study on Sustainable Development for the 21st Century (SUSDEV21)* - is due to be completed in early 2000, and will provide a tool for sustainability evaluation of policies and projects.

1.2.7 CTS-3 will differ from earlier comprehensive studies in that it has essentially been split into four parts, with some of the data collection and model development having already been carried out by separate studies. CTS-3 will form the fourth part and will carry out model adjustments and improvements, integrate the results, and prepare the transport programme, using inputs from the earlier three parts, which consisted of:

- *Travel Characteristics Survey (Final Report, May 1993)* - collected the data on which the person travel models are based;
- *Freight Transport Study (Final Report, April 1994)* - collected data and prepared models for freight transport; and
- *Conversion and Enhancement of CTS-2 Computer Programs (Final Report, January 1995)* - prepared the person travel models.

1.2.8 The projects and policies in CTS-3 are subject to a strategic environmental

assessment for the first time in a comprehensive transport study. It focuses on the air quality, noise and ecological aspects of the environment. All projects proposed by CTS-3 which are classified as Designated Projects under the *Environmental Impact Assessment Ordinance* will undergo an environmental impact assessment process during project feasibility study stage.

### 1.3 *Objective of CTS-3*

- 1.3.1 The overall objective of the Study was to determine what has to be done to achieve and maintain an acceptable level of mobility for passengers and freight by road, rail and ferry up to 2016, taking due regard of budgetary constraints and environmental issues. In establishing the acceptable level of mobility, factors including the international competitiveness of Hong Kong, public acceptance, congestion level, traffic speed, journey time, availability of alternative routes and transport modes, etc shall be considered.

### 1.4 *Scope of CTS-3*

- 1.4.1 The primary product of the Study is a transport plan for major infrastructure and policies for Hong Kong, quantified in terms of costs, preliminary alignments, benefits and timing, covering the planning horizon up to 2016.
- 1.4.2 The study has also produced a validated transport model for 1997, and traffic forecasts for future design years. This model and the scenario flows may provide information for the regional and district level studies that will be required later.
- 1.4.3 The Study also provided inputs to other streams of the planning process, including railway development, territorial development, electronic road pricing and sustainable development studies.
- 1.4.4 It is certain that Hong Kong will continue to change rapidly and so the study has also provided the tools needed for continuing analysis, together with appropriate training for the users of those tools.

### 1.5 *Objectives of the SEA Study*

- 1.5.1 In order to develop a transport strategy in Hong Kong with due regard to the environment, a Strategic Environmental Assessment (SEA) is essential to form part of CTS-3 to address potential environmental impacts of different transport strategies to ensure future CTS-3 transport developments are realized in an environmentally acceptable manner. The SEA also examined the environmental constraints on further strategic transport developments, and of the air and noise pollution as well as general ecological profile to identify where strategic transport developments should be avoided.

### 1.6 *Scope of SEA*

- 1.6.1 A baseline report was produced to provide background information on

environmental quality in terms of air, noise and ecology of the HKSAR. The baseline air quality study has identified areas where air pollution is of concern. The noise study has set the baseline for comparison of transport scenarios. The ecology baseline study has identified ecologically sensitive areas where new transport infrastructure projects should be avoided.

- 1.6.2 Air quality assessment has been conducted in terms of emission inventories and detailed modelling. The emission inventories have compared transport scenarios on a district by district basis and identified districts where air quality could deteriorate. The detailed air quality modelling has predicted the future air quality in terms of Air Quality Objectives.
- 1.6.3 Noise assessment has been conducted in terms of noise conditions relative to the baseline (1997).
- 1.6.4 Ecological appraisals were conducted when planning new infrastructure projects to identify potential ecological impacts at sensitive areas. The potential loss of habitats has also been identified for proposed infrastructure projects.
- 1.6.5 Mitigation measures were also identified for air and noise to improve the environment and a strategic environmental monitoring and auditing system has been proposed.

## ***1.7 Structure of This Report***

- 1.7.1 The remainder of this report is organized in the following manner:
  - Chapter 2 briefly describes the structure of the CTS-3 Study
  - Chapter 3 presents the baseline environmental conditions
  - Chapter 4 describes the CTS-3 input assumptions
  - Chapter 5 details the air quality assessment for CTS-3
  - Chapter 6 details the noise assessment for CTS-3
  - Chapter 7 includes the ecological appraisal for CTS-3
  - Chapter 8 proposes the mitigation measures
  - Chapter 9 proposes the strategic environmental monitoring
  - Chapter 10 presents the Conclusion and Recommendations