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**(ACE-EIA Paper 1/2005)**

*For Advice*

**Environmental Impact Assessment Ordinance (Cap. 499)  
Environmental Impact Assessment Report  
Kowloon Southern Link**

**Purpose**

This paper presents the key findings and recommendations of the Environmental Impact Assessment (EIA) Report for the Kowloon Southern Link (KSL) (hereafter known as the Project), submitted under Section 6(2) of the Environmental Impact Assessment (EIA) Ordinance. Kowloon-Canton Railway Corporation (KCRC) and their consultants will make a presentation. Comments from the public and ACE will be taken into account by the Director of Environmental Protection when he makes his decision on the approval of EIA report under EIAO.

**Advice Sought**

2. Members' views are sought on the findings and recommendations of the EIA report.

**Need for the Project**

3. The Project will connect the East Tsim Sha Tsui Station to the West Rail Nam Cheong Station and provide a railway link for residents in the North West New Territories to reach the Tsim Sha Tsui area using West Rail or to connect to other areas served by the East Rail without the need to interchange.

**Description of the Project**

4. The Project comprises the following key items:

- (i) A 3.7 km underground railway with its alignment running under Salisbury Road, Canton Road and the West Kowloon Reclamation area;
- (ii) A station, the West Kowloon Station (WKN), at West Kowloon;

- (iii) A centralised fresh-water cooling facility within the West Kowloon Station to serve both the station and the tunnel;
- (iv) Two ventilation/plant building to provide tunnel cooling and ventilation: the Yau Mai Tei (YMT) Ventilation Building and the Canton Road Plant Building (CRPB);
- (v) An Emergency Egress Point (EEP) at Canton Road and south of No. 1 Peking Road.

5. The KSL scheme was gazetted in March 2004 and proposed amendments were gazetted in January 2005. The alignment of the Project is shown in Figure 1. The Proponent has prepared an appendix in the EIA report to present the environmental implications of these amendments.

6. The Project is classified as a designated project under Item A.2, Part 1, Schedule 2 of the EIA Ordinance i.e. "A railway and its associated stations".

### **Consideration of Alternative Alignments and Construction Methods**

7. Alternative alignments (Figure 2) have been considered, including two sea based alignments (Kowloon Point and Harbour City Schemes) and two land based alignments (Canton Road and Kowloon Park Drive Schemes). Various factors, including environmental issues, have been taken into consideration during the route selection process. On the basis that the Canton Road Scheme can avoid encroaching into Kowloon Park, all the Champion trees along Haiphong Road will be kept intact and the use of bored tunnelling will minimise construction noise and dust impacts, the EIA report selects the Canton Road Scheme as the preferred alignment.

8. A number of construction methodologies have been considered for the preferred alignment. In addition to bored tunnelling along Canton Road that will minimise generation of spoil, mined tunnelling will be adopted under the Former Marine Police Headquarters (FMPHQ) and the Old Fire Station Buildings (OFSB) to ensure these buildings will not be adversely affected by the construction of the Project. Other tunnel sections will be constructed by cut-and-cover technique.

9. Independent of the EIA study, the Government has asked the City University of Hong Kong (CityU) to verify the proposed tunnelling method along Salisbury Road. CityU has confirmed that the cut-and-cover method would be the most appropriate method for constructing the tunnels along Salisbury Road.

### Specific Environmental Aspects to Highlight

10. The key environmental issues identified are construction airborne noise, construction and operation groundborne noise, waste, landscape and visual and cultural heritage.

#### *Construction Airborne Noise*

11. With the incorporation of all recommended mitigation measures, there is still predicted exceedance over the daytime construction noise criteria of 4dB(A) at two schools and 2dB(A) at one residential building. However, the EIA report estimates that the exceedance at the two schools will be for two months only and the exceedance at the residential building will be for four months only. Given the extent of the exceedances and the durations, the EIA report did not recommend Indirect Technical Remedies (ITR) in the form of enhanced glazing or air-conditioning for these receivers.

#### *Construction and Operational Groundborne Noise*

12. Daytime construction groundborne noise criteria adopted in the EIA study for Hong Kong Cultural Centre (Grand Theatre, Studio Theatre, Concert Hall), Hong Kong Space Museum (Planetarium, Recording room) and school classrooms are 60dB(A) (with a 5dB(A) reduction to the criterion i.e. 55dB(A) for school during examination period); and 65dB(A) for hotel guestrooms along Canton Road and Salisbury Road and domestic premises along Canton Road. Results indicate no residual construction groundborne noise impacts and mitigation measures are not required.

13. Projections of operational groundborne noise at identified representative sensitive receivers have been performed based on the guidance manual "Transit Noise and Vibration Impact Assessment" (FTA Manual) issued by the Federal Transit Administration (FTA), US Department of Transportation. Following the FTA Manual, the EIA report proposes an operational groundborne noise limit of  $L_{\max}^1$  25dB(A) for the Hong Kong Cultural Centre (Grand Theatre, Studio Theatre, Concert Hall) and the Hong Kong Space Museum (Planetarium, Recording Room). The operational groundborne noise criteria applied to school classrooms, hotel guestrooms along Canton Road and Salisbury Road and domestic premises along Canton Road during daytime is  $L_{\text{eq } 30\text{mins}}^2$  55 dB(A). Nighttime operational groundborne noise criteria

<sup>1</sup> The maximum noise level during a designated time interval or a noise event.

<sup>2</sup> Equivalent Noise Level,  $L_{\text{eq } 30\text{mins}}$  - It is an equivalent continuous sound pressure level measured over 30 minutes. It is defined as the constant sound pressure level, which would result in the same amount of sound energy as that due to the actual noise, if operated over the same measurement period.

applied to hotels and domestic premises is  $L_{eq\ 30mins}$  45 dB(A). Hong Kong Cultural Centre, Hong Kong Space Museum and school classrooms are considered by the EIA to be noise sensitive during daytime and evening only. Special trackform has been recommended to control operational groundborne noise to within the criteria.

14. The Proponent has also agreed to include appropriate control and enforcement measures in the Project Agreement to further protect the Hong Kong Cultural Centre and Hong Kong Space Museum from the potential impacts of groundborne noise.

#### *Waste*

15. The EIA study estimates that about 1,218,800m<sup>3</sup> of construction and demolition (C&D) materials will be excavated; of which an estimated 331,100m<sup>3</sup> could be reused, approximately 870,200m<sup>3</sup> to be disposed off-site as public fill and about 17,500m<sup>3</sup> will be disposed of at landfills.

16. Additionally, about 94,900m<sup>3</sup> marine deposits and alluvium are estimated to be generated during the construction of the Project. A Sediment Quality Report indicates 28,080 m<sup>3</sup> of Type 2 sediment will require confined marine disposal with the remaining 66,820 m<sup>3</sup> of marine deposits subject to Type 1 open sea disposal.

#### *Landscape and Visual*

17. The maximum number of existing trees affected will not exceed 1,200, of which not more than 105 will be of high amenity value. A minimum of 80% of the affected trees of high amenity value shall be transplanted. There will be no impacts on Champion trees nor impacts on any trees in the Former Marine Police Headquarters site. The number of compensatory trees planted shall be at least 130% of the total number of affected trees. The residual landscape and visual impacts in the construction and operation phases are considered acceptable with mitigation measures.

#### *Cultural heritage*

18. The EIA study recommends mined tunnelling to avoid physical contact with the OFSB. A vertical separation distance of 6-16m between the KSL tunnels and the heritage elements in the FMPHQ compound will be maintained. Any proposed site works (including ground investigation and tunnelling work) and structural monitoring measures within the boundary of the declared monument would need to comply with the requirements under the Buildings and Antiquities and Monument Ordinances.

#### *Other Impacts*

19. The EIA has also considered construction dust, operational airborne noise,

land contamination and water quality issues. Residual impacts on these issues are not anticipated.

### **Environmental Monitoring & Audit (EM&A)**

20. An EM&A programme has been proposed in the EM&A Manual submitted together with the EIA report. Implementation of the EM&A programme will be included as an Environmental Permit condition. A continuous noise monitoring mechanism throughout the entire construction period of the Project will be implemented at a school and a residential building. The Proponent will also establish a Community Liaison Office. For operational groundborne noise, the EM&A Manual recommends a noise commissioning test at selected key noise sensitive receivers.

### **Public Consultation**

21. KCRC has made the EIA report, EM&A manual and Executive Summary available for public comment under the EIAO on 18 January 2005. Members will be briefed at the meeting about any comments received from the public.

**Environmental Protection Department**  
**February 2005**

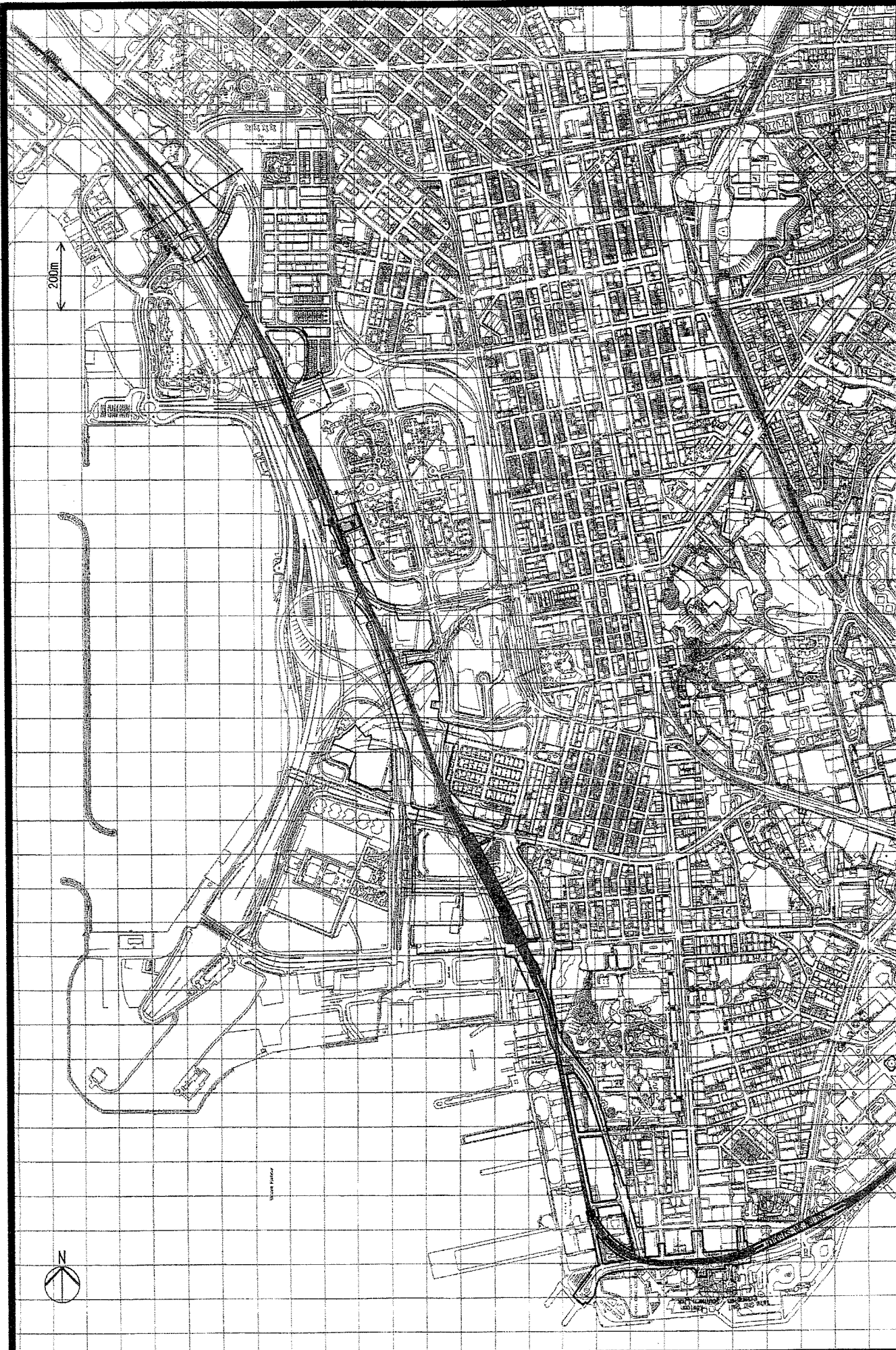
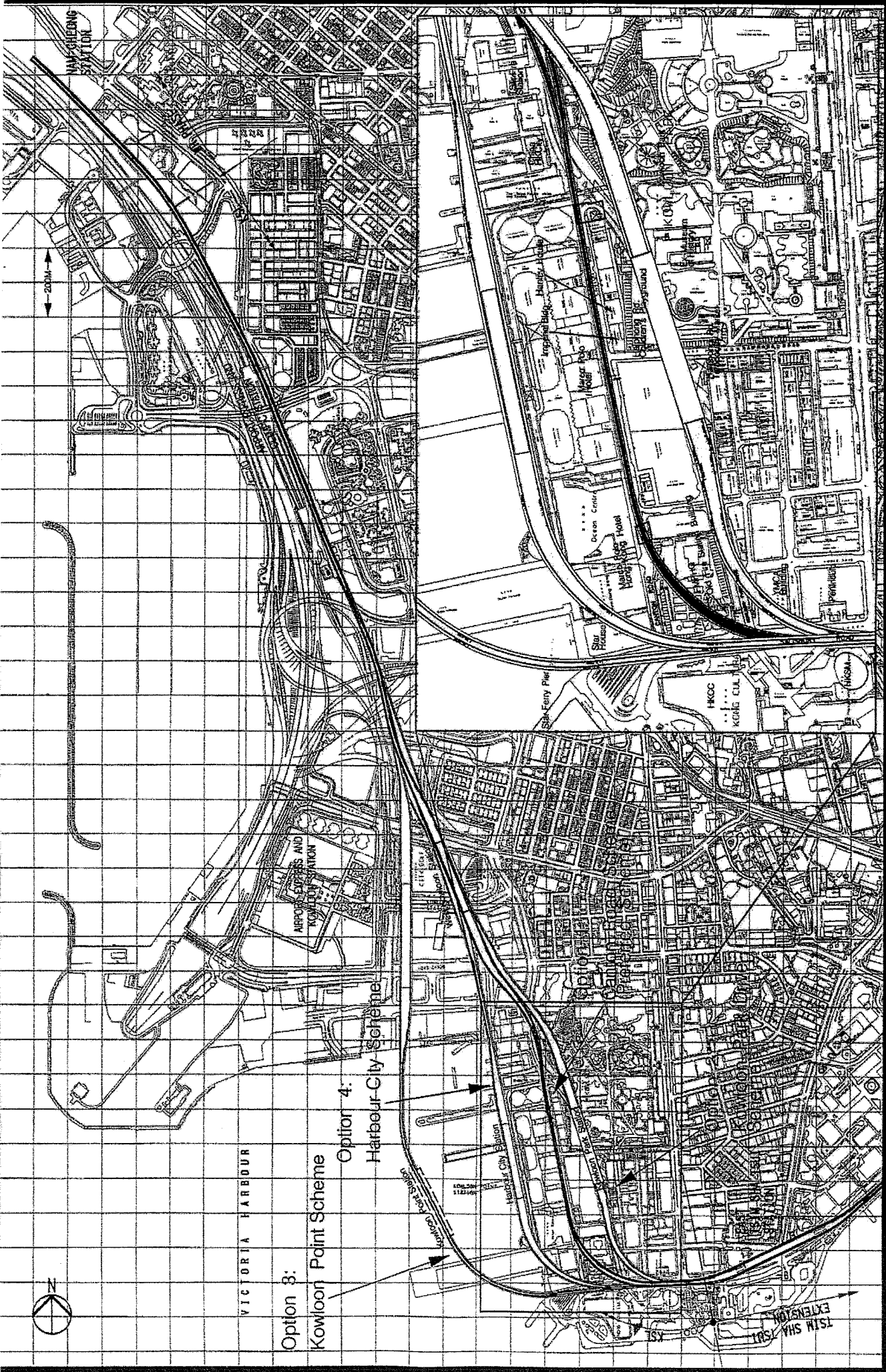


Figure 1

Kowloon Southern Link  
General Alignment



Kowloon Southern Link  
Alternative Alignments

Figure 2