

PROJECT PROFILE FOR NORTH HONG KONG ISLAND LINE (NIL)

1. Basic Information

1.1 Project Title

North Hong Kong Island Line (NIL)

1.2 Purpose and Nature

The NIL Project Profile describes the construction and operation of a new railway line on the North Coast of Hong Kong Island. The NIL has been included as a high priority MTR Corporation project in the recently announced Railway Development Strategy 2000.

The 3.5 km fully underground NIL will extend the existing Tung Chung Line (TCL) from Hong Kong Station to link with the existing Island Line at Fortress Hill, effectively extending the TCL along the Island Line (ISL) eastwards to Chai Wan. In order to achieve this, it will be necessary to “Swap” the ISL such that stations west of Tin Hau (i.e. Tin Hau to Sheung Wan) will become part of the Tseung Kwan O Line. The Swap will greatly relieve future interchange movements at Quarry Bay and North Point Stations, which are predicted to become congested soon after the opening of the Tseung Kwan O Extension in 2002 and will provide two parallel lines on Hong Kong Island. The NIL will also give greater penetration on Hong Kong island for passengers travelling on the Tung Chung Line from Lantau, West Kowloon and North West New Territories helping to improve the ability of the Tung Chung Line to relieve crowding on the Tsuen Wan Line.

1.3 Detailed Project Description

The NIL alignment commences from the east end of the Hong Kong Station Extended Overrun Tunnel (EOT) and continues east to Tamar Station. Track level at Tamar Station is approximately – 10mPD. Tamar Station is an underground station with an island platform and a concourse above the platform.

The NIL has two alignment options east of Tamar Station, i.e. the “seaward” and “inland” alignment. Both the “seaward” and “inland” alignment will be investigated in the EIA study for the NIL.

Under the “seaward” alignment, the NIL tunnels run along or close to the existing shoreline through the Central Reclamation III and Wanchai Development II areas. The tracks then run underneath Victoria Park, Wing Hing Street and Kings Road before joining with the Island Line tracks immediately west of Fortress Hill Station. Track levels range from –10mPD to –23mPD. A new underground station, Exhibition Station (EXH), is proposed north of the Indoor Games Hall and the bus terminus, adjacent to the Hong Kong Convention and Exhibition Centre.

The “inland” alignment is very similar to the “seaward” alignment between Tamar Station and the Hong Kong Exhibition and Convention Centre but swings inland near

the Hong Kong Exhibition and Convention Centre to run underneath Convention Avenue, the Wanchai Sports Ground and Gloucester Road. Exhibition Station will be located under the Indoor Games Hall and the bus terminus. The “inland” alignment merges with the “seaward” alignment at Victoria Park.

If the routing of the proposed Shatin to Central Link (SCL) on Hong Kong Island is via Exhibition Station, a section of the SCL will overlap with the NIL alignment between the Hong Kong Exhibition and Convention Centre and the Police Officer’s Club. In this case, EXH will be an interchange station between the NIL and SCL. Track levels for the NIL and the SCL will be approximately –10mPD and –16mPD respectively at EXH.

If the routing of the SCL on Hong Kong Island is via Victoria Park, then a NIL Victoria Park Station (VIP) will be constructed within the existing Victoria Park to interchange with the SCL.

As part of the NIL project, the tunnels for the Tseung Kwan O Line will be extended by approximately 100m to connect with the Island Line tracks immediately east of Tin Hau Station.

The route length of the NIL is approximately 3.5km. Whilst the main structures are underground, surface facilities in the form of utility connections/diversions, ventilation shafts, ventilation buildings, entrances and access shafts will also be required.

1.4 Proposed Method of Construction

The NIL stations will be constructed using cut-and-cover methods. The tunnels will be constructed as either cut-and-cover tunnels or bored tunnels.

For the cut-and-cover method, a cofferdam will be formed using sheet-piles, diaphragm walls, contiguous bored pile walls or similar. Struts will be installed at different levels as the excavation proceeds. If diaphragm walls or contiguous bored pile walls are selected, they will also form the permanent structure of the stations or tunnels.

Bored tunnels will be constructed using blasting or tunnel boring machines, with compressed air and/or ground treatment to assist with ground stabilisation, depending on the ground conditions.

Connections with the Island Line tunnels will be formed by cutting the existing linings by mechanical means.

The NIL tunnels may clash with the foundations of the bridges east of the Wanchai Sports Ground and will run very close to the foundations of Fat Cheong Building and Victoria Court. Specialist underpinning methods may be used to underpin the foundations of these structures.

1.5 Name of Project Proponent

The project proponent will be the MTR Corporation Ltd.

1.6 Location and scale of the Project

Two A3 size location plans of the NIL are attached for reference.

1.7 Number of Types of Designated Projects

This Project Profile describes one (1) Designated Project, a new railway line.

1.8 Contact Person and Details

2.0 Planning and Implementation Programme

Preliminary design of the section of the NIL within Central Reclamation III has commenced in early July 2000. Preliminary design of the remaining section of the NIL is scheduled to commence in October 2000. Detailed design of the NIL will commence by the end of 2001. Preliminary and Detailed Design will be undertaken by consultants under the supervision of MTR Corporation Ltd.

The Environmental Impact Assessment will be undertaken by a specialist consultant that is independent of the engineering design. The Corporation's Environmental Manager will manage the EIA directly. The EIA consultant will be appointed in October 2000.

Construction of the main civil works will commence in the last quarter of 2003 and will be complete by September 2007. Some advance works may commence in early 2003.

Allowing 6 months for testing and commissioning, the NIL is scheduled to open in early 2008.

A preliminary NIL programme is attached for reference. Based on information received from TDD, the construction period of the NIL may overlap with the construction period for Central Reclamation III, Wanchai Development II and the Central Wanchai Bypass, as well as construction of the SCL.

3.0 Environmental Appraisal

3.1 Construction Impacts

3.1.1 Tamar Station

- Constructed on land reclaimed by Government as part of the Central Reclamation III Project;

- Formed by cut and cover methods utilizing contiguous piles on diaphragm walls with internal slabs probably formed “bottom-up” using temporary strutting, with excavation from the surface;
- Nearest buildings are modern high rise office developments with sealed windows and air conditioners;
- Victoria Harbour is the nearest Water Sensitive Receiver, however the station is inland which will help to minimize any run-off impacts;
- Dust impacts are likely to arise from excavation works, stockpiling and transportation activities. However, due to the site location, significant impacts are not expected;
- Construction noise impacts are likely to arise, but significant impacts are not expected due to the location away from sensitive receivers;
- Water quality discharge will be controlled by the site discharge license and is not expected to have any significant effect;
- Inert solid wastes from excavation will be disposed off-site;
- The Tamar works will be one of many works along the reclamation. These works would therefore not be a specific source of visual impact;
- Normal MTRC site practice and housekeeping measures will be sufficient in controlling impacts from this site;
- No residual impacts are expected.

3.1.2 Tamar Station to Exhibition Station

- Most probably constructed by cut and cover methods using contiguously bored pipe pile walls or diaphragm walls;
- Pre-cast tunnel sections on piles may be used where the NIL crosses over the existing Tsuen Wan Line (TWL);
- The Academy for Performing Arts (100m), the Hong Kong Arts Centre (140m) and the Servicemen’s Guides Association are potential sensitive receivers. The remainder of the sensitive receivers are the HK Convention center, the Grand Hyatt and Renaissance Harbour View Hotels;
- Impacts from the cut and cover works in the soft ground are not expected to be significant, but a detailed analysis is needed to confirm this;
- Where the NIL passes over the TWL, a new sea wall may be needed. Limited dredging could cause disturbance of marine sediments with impacts on Suspended Solids (SS) Levels and Dissolved Oxygen (DO) Levels. The dredged material could be contaminated and may require special handling. This area is expected to be very localized;
- Specialized dredging techniques may be considered;
- Convention Avenue may have to be temporarily closed with traffic diverted. The diverted traffic flow is not expected to negatively affect noise or air quality in the area;
- No residual impacts are expected, but a quantitative assessment of traffic flow along Convention Avenue will be needed.

3.1.3 Exhibition Station

- For the “inland” alignment, the station will be located beneath the existing bus terminus, Harbour Road Indoor Games Hall, and the Wan Chai Public Swimming Pool. For the “seaward” alignment the station box will be located in new

reclaimed land north of the seawall. In both cases the station will be constructed using contiguous piles or with diaphragm walls;

- The nearest Sensitive Receivers are the Exhibition Centre, offices and hotels along Convention Avenue, the Great Eagle Centre and the Harbour Centre. The Sun Hung Kai Centre, the Prevention of Cruelty to Animals Building (SPCA) and the Wanchai Sports Ground may also be affected. There are no areas of ecological interest affected by the proposed works;
- Noise and air impacts are possible, but as the sensitive receivers are modern buildings with sealed windows and air conditioners, the impacts are not expected to be significant. Bored piling near the existing sea wall could lead to temporary increase in noise levels and quantities of waste water;
- If the “inland” alignment is adopted demolition of the Indoor Games Hall and Swimming Pool will be required.
- The application of mitigation measures similar to those used for Tamar Station is expected to be sufficient to reduce the impacts to acceptable levels; and
- No residual impacts are expected.

3.1.4 Exhibition to Fortress Hill Station

- The section is likely to be in a mixture of cut and cover and bored tunnels. Underpinning works near the Canal Road Flyover may be needed, which could be undertaken in a cut and cover section. Soft ground bored tunneling would extend underneath Victoria Park until rock is reached near Hing Fat Street. A temporary access shaft is envisioned at Hing Fat Street and a works area will be needed in this area;
- The Wanchai Sports Ground will be the most vulnerable sensitive receiver though the Sun Hung Kai Centre and the SPCA may also be affected. Offices, commercial businesses and residential properties along Gloucester Road including the World Trade Centre may also be affected, though impacts from soft ground bored tunneling works should not be significant. Consideration will be given to the possible impact on the petrol station at the corner of Gloucester and Victoria Park Roads.
- East of Victoria Park, the alignment will pass under residential blocks at Hing Fat Street and King’s Road. Impacts of a possible temporary access shaft near this area may need to be examined;
- The use of cut and cover techniques and bored tunnel will have very different impacts, which will need to be further investigated. If the cut and cover method is chosen, the Wanchai Sports Ground may need to be temporarily closed. On the other hand, if bored tunneling method is used, the impact would be much less and continued public use of the Wanchai Sports Ground should be possible;
- The chosen alignment from the sports ground to Canal Road is unlikely to result in any adverse impacts, as receivers are located south of Gloucester Road at least 80m away. At Hing Fat Street and Comfort Terrace, residential properties are likely to be affected by noise and dust;
- If the SCL routing on Hong Kong Island is via Exhibition Station, Victoria Park should be largely unaffected, though some mature trees and vegetation may need to be removed near the access shaft at Hing Fat Street;
- The use of Fortress Hill Site would result in the loss of some vegetation of little ecological value and could also have noise and dust impacts during excavation of access shaft;

- Normal MTRC good site practice will provide sufficient mitigation for the section between Exhibition to Fortress Hill;
- Additional mitigation may be needed at the eastern worksites. This could involve noise barriers or enclosures and restrictions to the numbers of plant; and
- No residual impacts are expected though this would be the subject of additional study.

3.1.5 Victoria Park Station

- The station would have to be constructed using cut and cover methods which would require demolition of the Bowling Green and temporary occupation of the sites.
- Noise and dust impacts would be similar to Tamar and Exhibition Stations and would impact sensitive receivers in Victoria Park, Hing Fat Street and Gloucester Road;
- Application of mitigation measures will reduce impacts to acceptable levels;
- No residual impacts are expected.

3.1.6 Extension of Tseung Kwan O Line to Tin Hau

- This will be constructed by mechanical means operating within the existing tunnels and therefore will have no impacts on sensitive receivers.

3.2 Operational Impacts

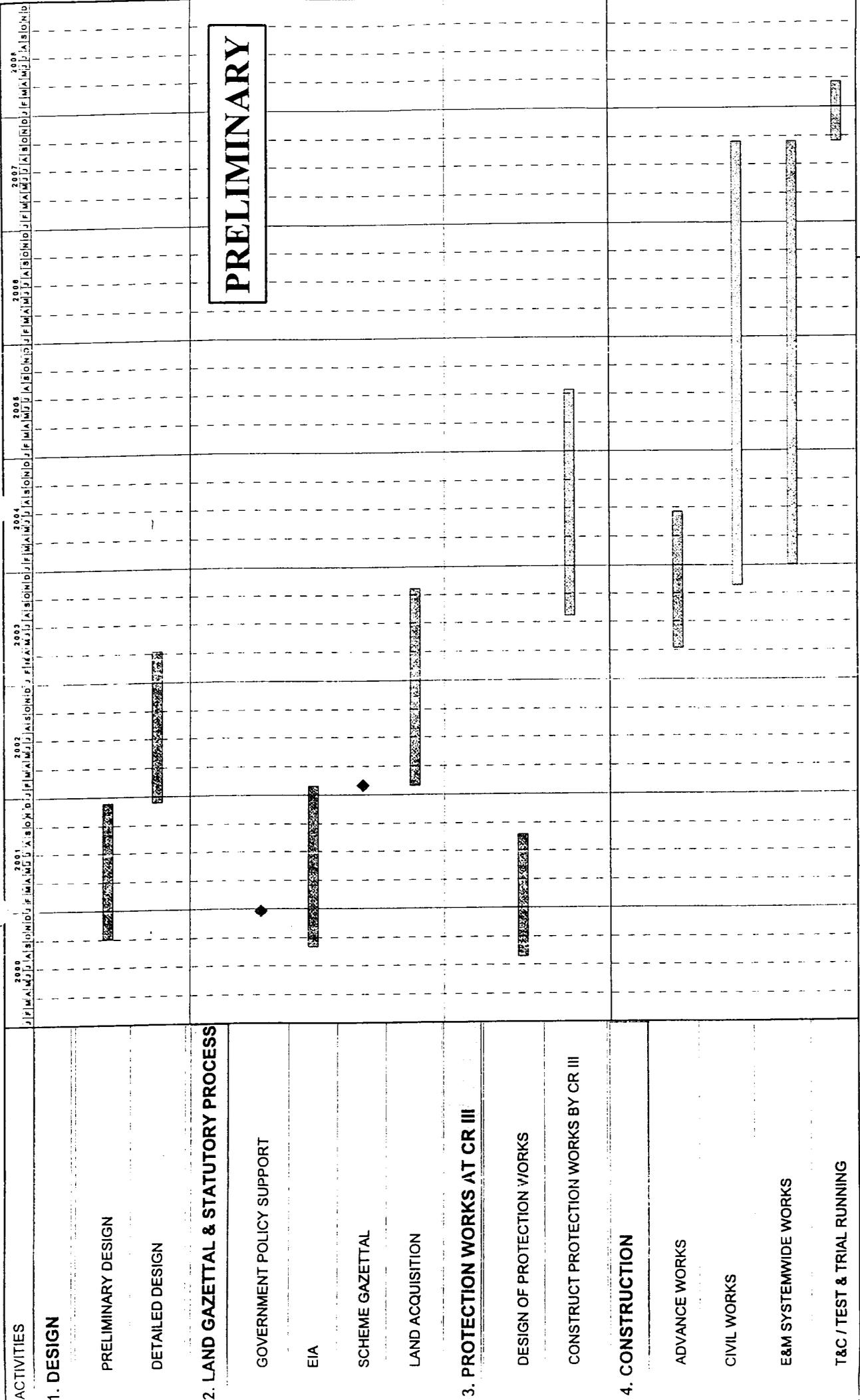
- The operational railway will be fully underground in tunnel with only entrances to the railway stations and ventilation towers above ground level. No adverse impacts are expected as the ventilation towers would be designed to comply with the Noise Control Ordinance; and
- There could be some impact to temperatures in Victoria Harbour if sea water cooling for air conditioning is used. The extent and rate of effluent discharge will comply with the Water Pollution Control Ordinance and hence no adverse impacts are expected.

3.3 Additional Assessments

Given the proposed alignment and scope provided above, there is no need to include a detailed visual or landscape assessment. Furthermore, as no Sites of Cultural Heritage or Potentially Hazardous Installations have been identified, there is no need for these types of assessments.

3.4 Conclusions

It would appear that at most locations, the impacts from the construction of the NIL should be capable of being controlled to acceptable levels by the implementation of standard mitigation measures. Detailed assessments of noise and air and qualitative assessments of water and waste impacts will be undertaken in the detailed EIA.



PRELIMINARY

Checked by
PP

Date
10/7/00

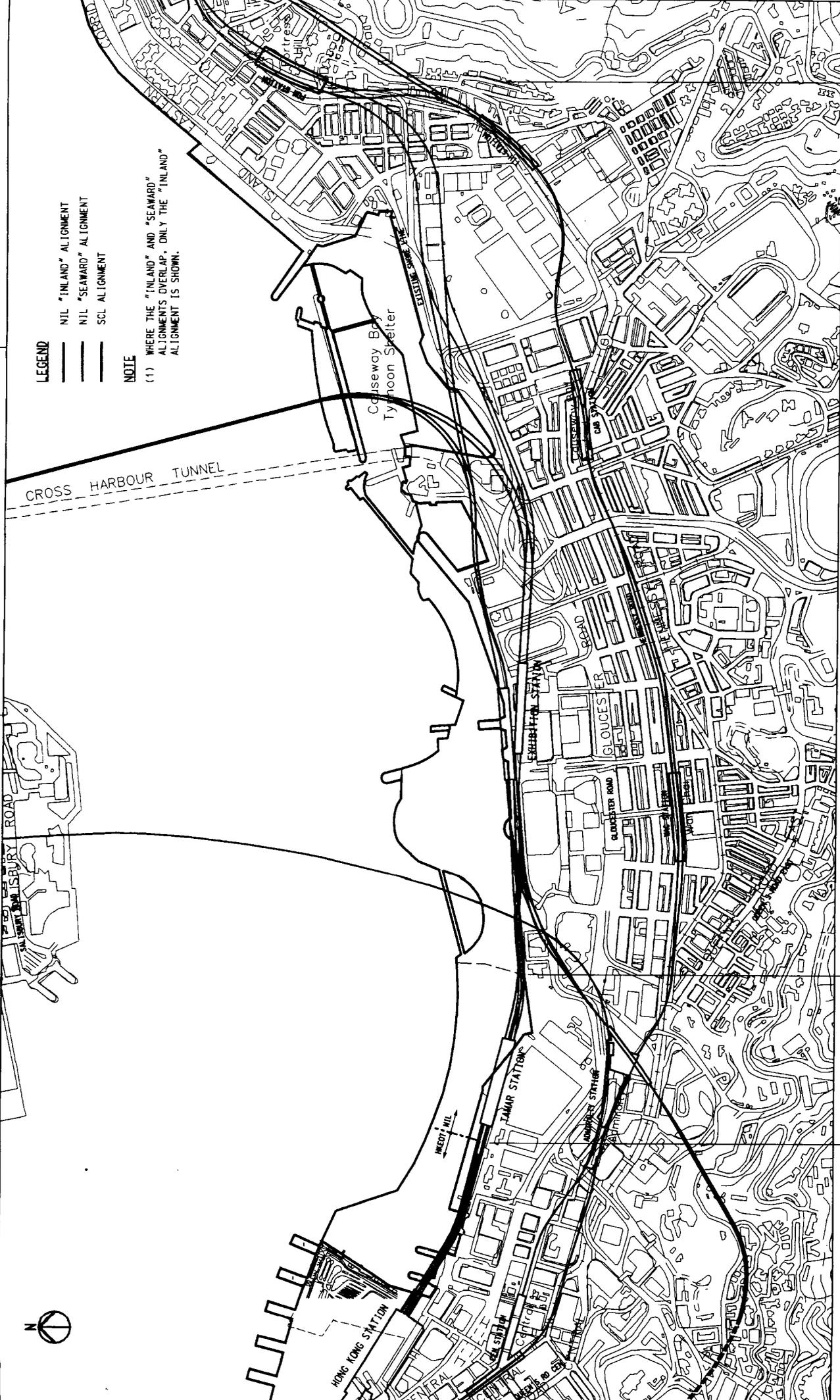
Rev

Sheet 1 of 1

NORTH ISLAND LINK
Preliminary Programme

Mass Transit Railway Corporation
Project - Planning & Programming

:/S/PEK_NILANP00FTPIA.WPG



LEGEND

--- NIL "INLAND" ALIGNMENT

--- NIL "SEAWARD" ALIGNMENT

--- SCL ALIGNMENT

NOTE

(1) WHERE THE "INLAND" AND "SEAWARD" ALIGNMENTS OVERLAP, ONLY THE "INLAND" ALIGNMENT IS SHOWN.

NIL PRELIMINARY DESIGN
CONSULTANCY AGREEMENTS

NEX/045

NEX/046

REVISION	DESCRIPTION	BY	DATE	APPROVED	<p>IF THE FINAL DESIGN DIFFERS AT ANY POINT FROM THE DESIGN SHOWN ON THIS PLAN, THE DESIGNER SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE DESIGN. THE DESIGNER SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE DESIGN. THE DESIGNER SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE DESIGN.</p>	<p>MTR Corporation PROJECT DIVISION</p> <p>地鐵公司 MTR Corporation</p>	<p>SCALE: 1:110000</p> <p>DATE: 16 AUG 2000</p> <p>DRAWN: []</p> <p>CHECKED: []</p>	<p>NO. OF SHEETS: 10</p> <p>SHEET NO.: 10</p>	<p>PROJECT NO.: NIL/EIA/002</p>
<p>MTRC PROJECT DIVISION</p>					<p>NORTH HONG KONG ISLAND LINE LOCATION PLAN (SCL VIA EXH/ADM)</p>				
<p>MTR Corporation PROJECT DIVISION</p>					<p>DESIGN MANAGEMENT (ADM-1)</p>				
<p>CONSULTANT</p>					<p>CONSULTANT</p>				

