

PROJECT PROFILE FOR – NORTH ISLAND LINE (NIL)

1. Basic Information

1.1 Project Title

North Island Line (NIL)

1.2 Purpose and Nature

The NIL Project describes the construction and operation of a new railway line on the North Coast of Hong Kong Island. NIL was included as a high priority in the recently updated Rail Development Strategy (RDS2).

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 Island Line (ISL) East 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, which are predicted to become critical soon after the opening of the Tseung Kwan O Extension. The NIL will also give greater penetration on Hong Kong island for passengers traveling on the Tung Chung Line from Lantau, West Kowloon and North West New Territories.

1.3 Detailed Project Description

The North Island Link alignment commences from the end of the Hong Kong 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 one level of 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 station, Exhibition Station, is proposed north of the Indoor Game Hall and the bus terminus near the Hong Kong Convention and Exhibition Centre. EXH is an underground station with 2 levels of island platform and one level of concourse. Track levels are approximately –10mPD and –16mPD.

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

near the Grand Hyatt Hotel to run underneath Convention Avenue, Wanchai Sports Ground and Gloucester Road. Exhibition Station will be located under the Indoor Game Hall and the bus terminus. The “inland” alignment merges with the “seaward” alignment at the western end of Victoria Park.

A section of the Shatin to Central Link (SCL) overlaps with the NIL alignment between the Hong Kong Exhibition and Convention Centre and the Police Officer’s Club. The SCL track levels range from –16mPD to –25mPD.

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 3500m. 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 method. 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 structures of the stations or tunnels.

Cut-and-cover tunnels and stations will be supported by bored piles or diaphragm walls.

Bored tunnels will be constructed using tunnel boring machines, compressed air or blasting, depending on the ground condition.

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

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

Where the ground condition is poor, ground treatment method will be considered to stabilize the ground.

1.5 Name of Project Proponent

The project proponent will be the Mass Transit Railway Corporation Ltd.

1.6 Location and scale of the Project

An A3 size location plan of the NIL is 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 NIL within Central Reclamation III has commenced in early July 2000 while the 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.

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

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

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

A preliminary programme is attached for reference

3.0 Environmental Appraisal

3.1 Tamar Station

- Constructed on land reclaimed by Government as part of the Central Reclamation III Project;
- Formed by cut and cover methods utilizing a contiguously piled box and would probably be formed "bottom-up";
- 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 would help to minimize any run-off impacts;
- Dust impacts 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;

- Water quality discharge would be controlled by the site discharge license and is not expected to have any significant effect;
- Inert solid wastes from excavation are expected to be disposed off-site;
- The visual impacts of Tamar works would 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 would be sufficient in controlling impacts from this site; and
- No residual impacts are expected.

3.2 Tamar Station to Exhibition Station

- Most probably constructed by cut and cover using contiguously bored pipe pile walls. Diaphragm walls east of the Convention Centre may be used where the tunnels widen as they approach the Station;
- Pre-cast tubes on piles may be used where the NIL cross over the existing Tsuen Wan Line;
- 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 modern developments, HK Convention center, 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 NIL passes over the TWL, a new sea wall will be needed. The 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 would required special handling. This area is expected to be very localized;
- Convention Avenue may have to be temporarily closed with traffic diverted. The diverted traffic flow is not expected to negatively effect noise or air quality in the area;
- Specialized dredging techniques may be considered; and
- No residual impacts are expected, but a quantitative assessment of traffic flow along Convention Avenue may be needed.

3.3 Exhibition Station

- The station is to be aligned beneath the existing bus terminus, Harbour Road Indoor Sports Centre, and the Wan Chai Public Swimming Pool. The station box would be located within the existing land south of the sea wall and would be constructed 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 and the Prevention of Cruelty to Animals Building (SPCA) 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;

- The application of mitigation measures similar to those used for Tamar Station would be sufficient to reduce the impacts to acceptable levels; and
- No residual impacts are expected.

3.4 Exhibition to Fortress Hill Station

- The section is likely to be in a bored tunnel. Underpinning works near the Canal Road Flyover may be needed, which could be undertaken in a cut and cover section. The soft tunneling would extend underneath Victoria Park until rock is reached near Hing Fat Street. An access shaft is envisioned at Hing Fat Street and a second shaft and further 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 and commercial businesses along Gloucester Road including the World Trade Centre may also be affected, though impacts from soft tunneling works would not be significant. Consideration may need to be given to the possible impact of the petrol station at the corner of Gloucester and Victoria Park Roads. West of Victoria Park, the alignment would pass under the residential blocks at Hing Fat Street and King's Road. Impacts of a possible 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 cut and cover is chosen, the Wanchai Sports Ground may need to be closed for a works site;
- 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;
- Victoria Park should be largely unaffected, though some mature trees and vegetation would need to be removed near the access shaft at Hing Fat Street;
- The use of Fortress Hill Site would result in the loss of vegetation of little ecological value and could have noise and dust impacts during excavation of the portal;
- Normal MTRC good site practice would 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 and restrictions to the number of plant; and
- No residual impacts are expected though this would be the subject of additional study.

3.5 Operational Impacts

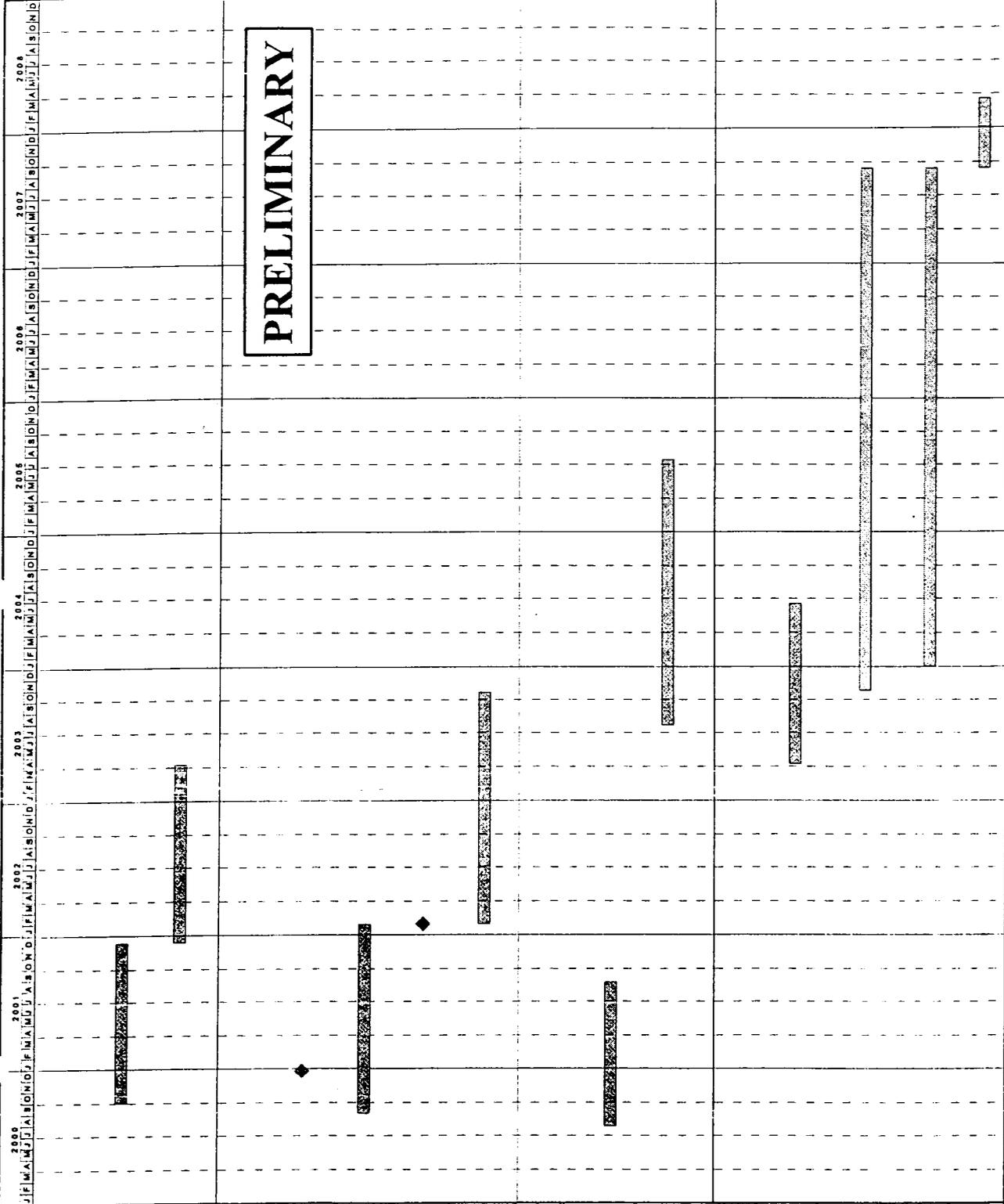
- The operational railway will be fully underground in tunnel with only entrances to the railway stations and ventilation towers above ground level. No adverse impacts are expected as the ventilation towers would be designed to comply with the Noise Control Ordinance; and
- There could be some impact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

3.6 Additional Assessments

Given the proposed alignment and scoping 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.

3.7 Conclusion

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 would be expected in the detailed EIA.



PRELIMINARY

Date	10/7/00
Rev	
Checked by	PP

Sheet 1 of 1

NORTH ISLAND LINK
Preliminary Programme

