



# **Hong Kong Section of Northern Link Spur Line – Project Profile**

**May 2025**

**TABLE OF CONTENTS**

<b>1</b>	<b>BASIC INFORMATION .....</b>	<b>1</b>
1.1	Project Title .....	1
1.2	Purpose and Nature of the Project .....	1
1.3	Name of the Project Proponent .....	1
1.4	Location and Scale of Project and History of Site .....	1
1.5	Number and Types of Designated Projects .....	2
1.6	Name and Telephone Number of Contact Persons .....	3
<b>2</b>	<b>OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME.....</b>	<b>4</b>
2.1	Project Planning and Implementation .....	4
2.2	Project Programme .....	4
2.3	Project Interface .....	4
<b>3</b>	<b>POSSIBLE IMPACT ON THE ENVIRONMENT.....</b>	<b>5</b>
3.1	Environmental Impacts from the Project.....	5
3.2	Air Quality.....	5
3.3	Noise .....	5
3.4	Water Quality .....	6
3.5	Waste Management.....	6
3.6	Land Contamination .....	7
3.7	Ecology .....	7
3.8	Fisheries.....	8
3.9	Cultural Heritage .....	8
3.10	Landscape and Visual.....	9
3.11	Hazard to Life.....	9
<b>4</b>	<b>MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT .....</b>	<b>10</b>
4.1	General .....	10
4.2	Sensitive Receivers .....	10
<b>5</b>	<b>ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS.....</b>	<b>12</b>
5.1	Mitigation Measures for The Project .....	12
5.2	Air Quality.....	12
5.3	Noise .....	13
5.4	Water Quality .....	14
5.5	Waste Management.....	15
5.6	Land Contamination .....	15
5.7	Ecology .....	16
5.8	Fisheries.....	16
5.9	Cultural Heritage .....	16

5.10	Landscape and Visual.....	16
5.11	Hazard to Life.....	17
5.12	Severity, Distribution and Duration of Environmental Effects and Further Implications ..	17
<b>6</b>	<b>USE OF PREVIOUSLY APPROVED EIA REPORTS .....</b>	<b>18</b>

## **LIST OF FIGURE**

Figure 1                      Northern Link Spur Line (NOL-S)

## **1 BASIC INFORMATION**

### **1.1 Project Title**

- 1.1.1 Hong Kong Section of Northern Link Spur Line (NOL-S) Project (hereinafter known as “the Project”).

### **1.2 Purpose and Nature of the Project**

- 1.2.1 NOL-S will be an underground railway line with an overall route length of about 6.2km connecting Hong Kong and Mainland between San Tin Station\* (SAT) bifurcation box and Huanggang Port Station\* (HUP) respectively. NOL-S will be constructed and operated in underground tunnel, with portions of the stations, such as entrance and concourse, and ancillary buildings above the ground level, subject to review in the next stage of design. The Hong Kong Section of NOL-S, with a route length of about 5.1km, will start from SAT bifurcation box and connect to the Mainland section of NOL-S at the boundary of the Administrative Division of Hong Kong Special Administrative Region (HKSAR) of the People’s Republic of China (PRC) at Shenzhen River.
- 1.2.2 The Project is one of the strategic cross-boundary railways that is being planned to further promote exchanges between Hong Kong and Shenzhen and unleash development potential along the alignment.
- 1.2.3 The Hong Kong Section of NOL-S consists of two intermediate stations at Chau Tau and Lok Ma Chau Loop, to support the development of Northern Metropolis along the NOL-S alignment.

### **1.3 Name of the Project Proponent**

- 1.3.1 The project proponent is the MTR Corporation Limited.

### **1.4 Location and Scale of Project and History of Site**

- 1.4.1 The Project is located in the northern part of New Territories. NOL-S alignment starts at SAT bifurcation box and ends at Mainland HUP\* with a route length of about 6.2km with two intermediate stations namely Chau Tau Station\* (CHT) and Lok Ma Chau Loop Station\* (LML) respectively. The indicative locations of the proposed alignment and stations are shown in **Figure 1**.
- 1.4.2 CHT\* is proposed to be located underneath the future road of San Tin Technopole. LML\* is proposed to be located within Hong Kong-Shenzhen Innovation & Technology Park (HSITP) at Lok Ma Chau Loop in the San Tin Technopole. NOL-S will be fully underground in tunnel, with portions of the stations, such as entrance and concourse, and ancillary buildings above the ground level, subject to review in the next stage of design. All proposed locations, alignments and project boundaries are subject to further studies. The Project would pass through government land, private lots, residential and commercial developments, wetland and agricultural land along its alignment.
- 1.4.3 From the SAT\* bifurcation box, the NOL-S alignment runs alongside, but separated from the Northern Link (NOL) Main Line tunnels, before curving northwards near Ka Lung Road and passing under San Tin Highway into CHT\*. After leaving CHT\*, the alignment curves northeastwards and passes through San Sham Road, at-grade approach road (part of San Sham Road) connecting to Lok Ma Chau (LMC) Control Point, LMC Spur Line, and then the alignment goes straight for approximate 700m under Lok Ma Chau hillside. Then, the alignment curves northwestwards and into

Lok Ma Chau Loop. The remaining Hong Kong Section of NOL-S then leaves LML, crosses Shenzhen River and into Mainland at Huanggang.

1.4.4 The Project will involve the following key construction activities:

- Railway alignment from SAT\* bifurcation box to LML\*, and the remaining Hong Kong section of the NOL-S alignment;
- Two new stations of CHT\* and LML\*; and
- Ancillary buildings facilities such as ventilation shafts, Emergency Access Points (EAPs)/ Emergency Egress Points (EEPs) and other stations associated facilities.

## 1.5 Number and Types of Designated Projects

1.5.1 The Project is a designated project by virtue of below items under Part I, Schedule 2 to the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). An environmental permit is required under the EIAO for the construction and operation of the Project.

- Item A.2 “A railway and its associated stations”;
- Item A.4 “A railway siding, depot, maintenance workshop, marshalling yard or goods yard”;
- Item A.7 “A road tunnel or railway tunnel more than 800 m in length between portals”; and
- Item Q.1 “Projects involving earthworks partly in a conservation area”.

1.5.2 A barging point and associated dredging activities for the operation of the barging point may be required for spoil removal and materials delivery during construction phase subject to further studies. In addition, Tunnel Boring Machine (TBM) will be the main construction method for tunneling works but potential drill and blast method may be required. Overnight storage of explosives may be required subject to further studies. Therefore, the Project may comprise of the below items under Part I and Part 2, Schedule 2 to the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) subject to further studies.

- Item C.12 of Part I – “A dredging operation that is
  - (a) with a dredging volume of more than 500 000 m<sup>3</sup>;
  - (b) less than 500 m from the nearest boundary of an existing or planned specified area that is wholly or partly situated on or over any foreshore and sea-bed; or
  - (c) less than 200 m from the nearest boundary of an existing or planned specified area that is not wholly or partly situated on or over any foreshore and sea-bed.”;
- Item K.10 of Part I – “A depot for the storage of explosives (as defined by Section 2 of the Dangerous Goods Ordinance (Cap. 295));” and
- Item 11 of Part II – “Decommissioning of a depot for the storage of explosives (as defined by Section 2 of the Dangerous Goods Ordinance (Cap. 295)).”

**1.6 Name and Telephone Number of Contact Persons**

1.6.1 All queries regarding the Project can be addressed to:

Mr. Rodney Ip

MTR Corporation Limited

Tel.: 2688 1760

## **2 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME**

### **2.1 Project Planning and Implementation**

- 2.1.1 The Project will be implemented by engaging relevant professionals throughout the planning, design, construction and implementation stages.
- 2.1.2 The construction works will be carried out by qualified contractors to be appointed under various works contracts.

### **2.2 Project Programme**

- 2.2.1 The construction of the Project will be implemented tentatively from 2027 to 2034. This tentative project implementation programme is subject to review.

### **2.3 Project Interface**

- 2.3.1 Major committed projects in the vicinity which may have potential interface with this Project have been identified and listed below. Any cumulative impact from these concurrent projects including but not limited to the following during both construction and operational phases of the Project, will be addressed in the EIA as appropriate:
  - Hong Kong Shenzhen Innovation & Technology Park (HSITP) at Lok Ma Chau Loop;
  - San Tin Technopole; and
  - Northern Link Main Line.

### **3 POSSIBLE IMPACT TO THE ENVIRONMENT**

#### **3.1 Environmental Impacts from the Project**

- 3.1.1 The Hong Kong Section of NOL-S (The Project) comprises tunnel section and 2 stations, CHT\* and LML\*. All proposed stations, alignments and boundaries are subject to further studies. The works for the Project will include site formation, foundation and piers works, building works, mining works, cut and cover construction at stations and special track areas, and tunneling works mainly using Tunnel Boring Machine (TBM) and potentially with drill and blast method. It is anticipated that the surrounding sensitive receivers may be affected during the construction and operational stages of the Project.
- 3.1.2 Temporary / offsite works areas and works sites may be required for the provision of site office, workshops, temporary storage of construction materials, utility or temporary access to support the construction of the Project. A barging point may be required for spoil removal and materials delivery during construction phase subject to further studies.
- 3.1.3 The potential impacts arising from the construction and the operation of the Project are discussed in **Sections 3.2 to 3.11**. All the prevailing statutory requirements will be considered in the EIA to assess the possible environmental impacts and acceptability.

#### **3.2 Air Quality**

##### Construction Phase

- 3.2.1 Construction of the Project includes site clearance, site formation, building works and infrastructure works as well as tunneling works. Air pollutant emissions will be generated from construction activities, such as blasting, if required, and earthworks, handling of materials at temporary stockpile areas and potential barging point, demolition, building works, vehicular movements and erosion of unpaved areas and stockpiles. The use of construction trucks and diesel-powered plants and equipment, and marine vessels, if any, may also result in air pollutant emissions.
- 3.2.2 Should dredging works be required, the potential odour impact will be reviewed and addressed in the EIA study. Potential cumulative air quality impact shall be assessed during the EIA stage to ensure compliance with relevant standards. Mitigation measures shall be considered to minimise the potential air quality impact subject to the assessment findings.

##### Operational Phase

- 3.2.3 As electrically powered trains will be operated for the Project, no direct atmospheric emissions will arise from the train operations and no air quality issue is envisaged.

#### **3.3 Noise**

##### Construction Phase

- 3.3.1 Source of construction noise will mainly be the use of powered mechanical equipment (PME) for various construction activities. Major construction works that will contribute to airborne construction noise impacts will include site clearance and formation activities, structure construction, tunnel construction, portal construction, structure dismantling if required, spoils removal from underground works & stockpiling, backfilling and reinstatement works. It is anticipated that piling will be used for foundation works, TBM method will be adopted for the tunnel section, and



open-cut method will be used for the underground stations and ancillary buildings. The Noise Sensitive Receivers (NSRs) located in the vicinity of the works area will be affected by the construction activities. Quiet construction methods / plants and noise mitigation measures will be explored and incorporated where applicable subject to the findings of EIA to minimise the potential noise impact.

- 3.3.2 Insurmountable construction ground-borne noise impact from the use of TBM is unlikely.

#### Operational Phase

- 3.3.3 The Project will be fully underground in tunnel with only stations and ancillary buildings above the ground level. For rail noise, airborne noise will be restrained within the tunnel section and no airborne noise impact is anticipated.
- 3.3.4 Potential ground-borne noise from the tunnel section of the project is envisaged for tunnel sections of the alignment. Operation ground-borne noise study will be conducted in the EIA.
- 3.3.5 In addition, operation noise impact from the fixed noise sources such as electrical and mechanical (E&M) equipment of the stations and ancillary buildings will be assessed in the EIA.

### **3.4 Water Quality**

#### Construction Phase

- 3.4.1 The potential sources of water quality impact will be related to construction activities near and across Water Sensitive Receivers (WSRs) and the potential barging point operation and associated dredging activities, if any, subject to the future design. Construction site runoff and drainage; debris, refuse and liquid spillages; and sewage from the on-site construction workforce will be potential sources of water quality impacts.

#### Operational Phase

- 3.4.2 Potential water quality impacts during the operational phase will mainly be related to sewage effluents from the staff and passengers and trade effluents from shops at the stations and surface run-off from station areas. With the provision of proper connections to the public sewerage network and drainage network respectively, no adverse impacts on water quality are envisaged.

### **3.5 Waste Management**

#### Construction Phase

- 3.5.1 Waste generated from the construction of the Project will include construction and demolition (C&D) materials, general refuse from the onsite workforce, and some chemical wastes from the maintenance of construction plants and equipment. C&D materials will be generated from the construction of structures, tunnels, stations and ancillary buildings, such as ventilation buildings and EAP/ EEP. Soft spoil may be excavated where site formation works encroach upon rivers and fish ponds. Good site practices will be implemented to avoid or minimise potential environmental impacts associated with the handling, collection and disposal of waste.

#### Operational Phase

- 3.5.2 The key issues with respect to waste are anticipated to be mainly related to the

management of general refuse and a small amount of chemical waste generated from the operation of the stations.

### **3.6 Land Contamination**

#### Construction Phase

3.6.1 There will be several potential contaminated sites within/in the vicinity of the Project. The initially identified sites with land contamination concern in the vicinity of the Project include open storage areas, petrol filling stations, vehicle maintenance/repairing workshops and container storage areas.

3.6.2 Site appraisal should be carried out during the EIA stage to identify areas with potential soil or groundwater contamination. Based on the findings of site investigations and assessment to be undertaken during the EIA stage, appropriate remediation actions will be formulated, and endorsed by EPD for implementation if contamination is identified.

#### Operational Phase

3.6.3 The operation of the railway and stations would unlikely cause any land contamination, and therefore no environmental concern in this respect is envisaged.

### **3.7 Ecology**

#### Construction Phase

3.7.1 Potential permanent and temporary habitat loss will be the main ecological impacts associated with the Project. Direct and indirect habitat loss will be anticipated.

3.7.2 The ecological impact at construction phase will be assessed in detail during the EIA process when more design information becomes available. The following key potential ecological areas and impacts along the alignment based on current design information have been identified.

#### *Ecological Area of Lok Ma Chau Loop Development*

3.7.3 The Project will pass underneath the Ecological Area of Lok Ma Chau Loop Development. The area supported species including mammals, wetland dependent birds, herpetofauna and dragonflies. Underground construction activities, such as tunnel construction by TBM, will be conducted underneath the Ecological Area and will cause indirect impact to the Ecological Area.

#### *Mitigation Wetland at San Tin Eastern Main Drainage Channel (STEMDC)*

3.7.4 STEMDC is a drainage channel running along the eastern edge of Sam Po Shue and San Tin fishpond area. As part of the mitigation measure for a drainage improvement project, multiple compensation features including grasscrete lining, embankment planting and constructed wetland were incorporated into the STEMDC. STEMDC supports waterbirds. The Project will pass underneath the STEMDC and result in indirect impacts to the habitats.

#### *Shek Wu Wai Wet Agricultural Lands*

3.7.5 The proposed underground alignment will pass underneath Shek Wu Wai Wet Agricultural Lands which support common wetland dependent birds including kingfishers, small ardeids and common shorebirds. This area of dry, wet agricultural lands, watercourses and ponds may potentially be utilized by Greater Painted-snipe.

The underground activities may cause potential indirect impact to the agriculture lands.

*Lok Ma Chau Loop Day Roost*

- 3.7.6 Lok Ma Chau Loop Day Roost is located about 300m to the west of the proposed alignment. It is mainly utilized by Great Cormorants. However, no more cormorants was observed since April 2022 in accordance to San Tin Lok Ma Chau Loop Development Loop (STLMC DN) EIA. It is expected that there will be no disturbance to the Day Roost from the Project and thus no impact is anticipated.

Operational Phase

- 3.7.7 NOL-S will be fully underground in tunnel with only stations and ancillary buildings above the ground level. It is anticipated that the potential impacts to habitat types will be less severe than those identified for the construction phase and will be assessed in detail during the EIA process.

### **3.8 Fisheries**

Construction Phase

- 3.8.1 Construction phase impacts that may arise due to the potential encroachment of fish ponds include impacts on fisheries resources/production. In-direct fisheries impact may arise if construction activities result in pollution of watercourses. Such impacts can be avoided by appropriate construction site management protocols.

Operational Phase

- 3.8.2 Impact on fisheries is not anticipated during the operation of the Project.

### **3.9 Cultural Heritage**

Construction Phase

- 3.9.1 No Sites of Archaeological Interest (SoAI) and two high potential archaeological area in Wing Ping Tsuen / Tung Chan Wai and in Lok Ma Chau are located within or near 100m boundary from the proposed alignment. No direct impact on the archaeological areas is anticipated while the indirect impact will be assessed in the archaeological impact assessment.
- 3.9.2 Two declared monuments and 12 graded historic buildings are located in the areas near the alignment and works area. Lok Ma Chau Police Station, a Grade 2 Historic Buildings, is located above the underground tunnel, other monuments and graded historic buildings are located more than 100m from the proposed alignment. The potential impact on the declared monuments and historic buildings will be assessed in the built heritage impact assessment.

Operational Phase

- 3.9.3 As there are potential archaeological area and graded historic buildings within 100m from the proposed alignment, the potential impact on these cultural resources will be assessed in the archaeological impact assessment and built heritage impact assessment respectively.

### **3.11 Landscape and Visual**

#### Construction Phase

- 3.11.1 Landscape and visual impacts may arise during the construction of the Project as a result of the removal of existing trees and vegetation, the use of construction equipment, the erection of hoardings and temporary structures, erection of stations and other structures, cut and cover works and lighting for the construction sites. The potential impacts will be assessed in the EIA accordingly.

#### Operational Phase

- 3.11.2 There will be permanent loss of existing trees when construction of the Project is completed and potential impact on existing facilities within public open spaces will result. The potential impact will be assessed during the EIA.
- 3.11.3 There will be potential visual impact on the adjacent VSRs due to the above ground structures including ancillary building, such as ventilation buildings and EEPs/EAPs, as well as stations. Considerations for aesthetic treatment will be required in the design of the physical structures to mitigate the impacts imposed by the Project. The potential impacts will be assessed in the EIA accordingly.

### **3.12 Hazard to Life**

#### Construction Phase

- 3.12.1 The tunnels will be mainly constructed by Tunnel Boring Machines (TBM) and potentially with drill and blast method subject to the geological condition and future design. If blasting activities and overnight storage of explosive will be required by the Project, quantitative risk assessment (QRA) should be undertaken in the EIA stage to ensure compliance with Government's Risk Guidelines.

#### Operation Phase

- 3.12.2 The Project is not within consultation zone of Potentially Hazardous Installations (PHIs). Hence, no adverse impact is anticipated.

## 4 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

### 4.1 General

- 4.1.1 The Project is located in the New Territories North. The Project is an underground railway line between SAT\* bifurcation box and the boundary of the Administrative Division of HKSAR of the PRC at Shenzhen River adjacent to Lok Ma Chua Loop, with two intermediate stations at Chau Tau and Lok Ma Chau Loop (i.e. CHT\* and LML\*). The alignment will pass through wetlands, agricultural lands, government lands, private lots, etc. Based on current design information, an overview of the existing environment adjacent to the Project is shown in **Figure 1**.

### 4.2 Sensitive Receivers

- 4.2.1 The major sensitive receivers and sensitive parts of the natural environment, which might be affected by the Project, are listed in **Table 4.1**. The list is not exhaustive and will be reviewed during the EIA stage.

**Table 4.1 Major Sensitive Receivers / Concerned Areas in the vicinity of the Project**

Types	Sensitive Receivers/Concerned Areas
Residential Developments	Siu Hum Tsuen, Shek Wu Wai San Tsuen, Tsing Lung Tsuen, San Lung Tsuen, Fan Tin Tsuen, Wing Ping Tsuen, On Lung Tsuen, Yan Shau Wai, Tung Chan Wai, Chau Tau Tsuen, Pun Uk Tsuen, Ki Lun Tsuen, Luk Mei Tsuen, Ha Wan Fisherman San Tsuen and Village Houses at Lok Ma Chau
Planned Residential Developments and G/IC	San Tin Technopole Residential Zone, San Tin Technopole G/IC Zone and Lok Ma Chau Loop G/IC Zone (including HSITP), San Tin Technopole Mixed Use Development
Educational Institutions	Tun Yu School, planned schools in San Tin Technopole and potential educational institutions in HSITP
Others	Existing and Planned Clinics, industrial buildings, offices, shop and shopping centres, sport centres, community centres, place of public worships, playgrounds and parks etc.
Water Bodies	San Tin Western Main Drainage Channel, San Tin Eastern Main Drainage Channel, Channelized stream at Shek Wu Wai, Shenzhen River, Ponds at San Tin and Lok Ma Chau and Ecological Area of Lok Ma Chau Loop Development (i.e. old Shenzhen River Meander)
Areas of Conservation Value	Ecological Area of Lok Ma Chau Loop Development, Mitigation Wetland at San Tin Eastern Main Drainage Channel, Sam Po Shue Wetland Conservation Park, Shek Wu Wai Wet Agricultural Lands and Lok Ma Chau Loop Day Roost
Site of Cultural Heritage	<p>Sites with Archaeological Potential: High Archaeological Potential Areas in Wing Ping Tsuen / Tung Chan Wai and in Lok Ma Chau</p> <p>Declared Monuments: Man Lun Fung Ancestral Hall and Tai Fu Tai</p> <p>Grade 1 Historic Buildings: Man Ancestral Hall</p>

Types	Sensitive Receivers/Concerned Areas
	<p>Grade 2 Historic Buildings: Ming Yuen Tong Ancestral Hall, Man San Ye Ancestral Hall, Lok Ma Chau Police Station, Mi Tak Study Hall (Ancillary Building) and Mi Tak Study Hall (Main Block)</p> <p>Grade 3 Historic Buildings: Tung Shan Temple, No.22 San Lung Tsuen, No.21 San Lung Tsuen, and Entrance Gate, Enclosing Walls and Shrine, Yan Shau Wai</p>

## **5 ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS**

### **5.1 Mitigation Measures for The Project**

- 5.1.1 Practicable and effective mitigation measures will be adopted for construction and operation of the Project, as necessary, to ensure compliance of relevant environmental standards. Possible key measures to be adopted, subject to studies, are listed below.

### **5.2 Air Quality**

#### Construction Phase

- 5.2.1 Air quality control measures such as sufficient watering and good site practices should be adopted to mitigate the potential impact. With the adoption of the proper measures, no insurmountable air quality impact is envisaged. It is expected that the Project will not induce adverse air quality impact to the Air Sensitive Receivers.
- 5.2.2 Appropriate air quality control measures, where applicable, as stipulated in the Air Pollution Control (Construction Dust) Regulation and Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation will be implemented during the construction period to control air quality. Following key air quality control measures should be implemented as appropriate:
- Watering of the active works areas, exposed areas and paved haul roads to reduce dust emission;
  - Establishment and use of vehicle wheel and body washing facilities at the exit points of the site;
  - Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines;
  - Provision of wind shield or similar dust mitigation measures at the loading area where dust generation is likely during the loading/unloading process of loose material, particularly in dry seasons/periods;
  - Provision of impervious dust screens/sheeting and water spraying for demolition of buildings and breaking works;
  - Travelling route of marine vessels shall be set away from any ASRs as far as practicable;
  - Exempted NRMMS shall be avoided as far as practicable;
  - Electric NRMMS shall be used and power supply shall be provided for on-site machinery as far as practicable;
  - Installation of blast door at the openings with air treatment system for tunnelling works by drill and blast method, if any; and
  - Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4 m high from ground level shall be provided as far as practicable; and where possible, routing of construction vehicles and positioning of construction plant should be at the maximum possible distance from Air Sensitive Receivers.
- 5.2.3 Should there be any dredging activities subject to the future design, possible mitigation measures shall be considered to minimize the potential odour impact



based on the EIA findings:

- Loading of the dredged sediment to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water;
- Any dredged sediment should be stored in enclosed tanks / vessel compartments or properly covered as far as practicable to minimise its exposed area during its temporary storage and should be placed as far away from the identified ASRs as far as practicable;
- The dredged sediment is suggested to be delivered off-site for disposal as soon as possible, subject to production rate of dredged sediment and works programme, to minimise temporary storage of dredged sediment on barge; and
- Dredged sediment placed on marine construction vessel for disposal shall also be properly covered during transportation.

#### Operation Phase

- 5.2.4 As no direct atmospheric emissions will arise from the operation of the electric trains and the stations, mitigation measures will not be required during the operation phase, subject to further EIA study.

### **5.3 Noise**

#### Construction Phase

- 5.3.1 Construction noise impacts can be minimised through adoption of good site practice and management, use of quiet construction methods/plant and adoption of noise barrier/enclosure. The mitigation measures outlined in the Environmental Impact Assessment Ordinance (EIAO) Guidance Note No. 9/2023 - Preparation of Construction Noise Impact Assessment Under the Environmental Impact Assessment Ordinance will be explored and incorporated where applicable subject to the findings of EIA. All construction works should be carried out during non-restricted hours (i.e. 0700 to 1900 hours, Monday to Saturday) unless a Construction Noise Permit (CNP) is obtained from EPD. For works areas near schools, construction activities should be scheduled to avoid school examination period as far as possible. Following noise mitigation measures are recommended to reduce the noise impact during the construction phase:
- Only well-maintained plant should be operated on-site, and plant should be serviced regularly during the construction program;
  - Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program;
  - Location of items of PME should be sited as far from NSRs as possible;
  - Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
  - Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs;
  - Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities;
  - Use of quality powered mechanical equipment (QPME) as far as possible; and



- Use of noise barrier/enclosure could further alleviate the construction noise impacts.

#### Operational Phase

- 5.3.2 Possible key measures to reduce operational noise impact from fixed noise sources include:
- Provision of noise mitigation measures (e.g. noise barriers, semi-enclosure and full enclosure);
  - Provision of a fully enclosed platform and concourse arrangement with air-conditioning for station(s); and
  - The maximum sound power level (SWL) allowed for each fixed plant noise source to achieve noise compliance should be determined in the EIA stage and adopted as specification for future procurement contracts of the Project.
- 5.3.3 Ground-borne rail noise study should be conducted during the NOL-S EIA when more information (e.g. ground condition) becomes available and appropriate potential mitigation measures, such as low vibration trackform, low stiffness fasteners, etc., will be reviewed and recommended for in the EIA. The potential cumulative rail noise impact from the Project and the nearby existing / planned railways will be also assessed in the EIA study.
- 5.3.4 As the NOL-S is fully underground, no airborne rail noise from the operation is anticipated.

### **5.4 Water Quality**

#### Construction Phase

- 5.4.1 Proper construction methods and sequences should be adopted to minimise the potential water quality impact. Mitigation measures including good site management practices as provided in Professional Persons on Construction Site Drainage, Environmental Protection Department, 2024 (ProPECC PN2/24) as well as standard measures in handling groundwater discharges/seepage from underground tunnelling works should be adopted to minimise the potential water quality impact. With the selection of proper construction methods and/or sequences, and adoption of appropriate mitigation measures, no adverse water quality impact is anticipated.
- 5.4.2 Following measures are recommended as good site practices to mitigate water quality impact during the construction phase:
- Construction site effluents including surface runoff should be properly collected, handled, treated and disposed of in accordance with the guidelines in ProPECC Practice Note PN 2/24 on Construction Site Drainage and provisions of Water Pollution Control Ordinance (WPCO) license to prevent high levels of suspended solids from entering surrounding waters or drainage network;
  - Stockpiles of construction materials and dusty materials should be covered and located away from watercourses;
  - Sewage generated from the construction workforce should be collected in portable toilets and tankered away for proper disposal by a licensed specialist contractor at regular intervals; and
  - Proper measures should be implemented to prevent oil or fuel spillage, e.g. removal of construction plants with identified oil/fuel leakage from site.

Operational Phase

- 5.4.3 Sewage and wastewater from stations and ancillary buildings should be properly diverted to sedimentation basin or oil interceptors before discharge to the public sewerage system. Silt traps and grease traps should be properly maintained to minimise water quality impacts and ensure compliance of WPCO. Surface runoff should be collected and conveyed to the public drainage system. The appropriate mitigation measures outlined in the “Drainage Plans subject to Comment by the Environmental Protection Department” (ProPECC PN 1/23) will be incorporated where applicable. Hence, no adverse water quality impact during operational phase is anticipated.

**5.5 Waste Management**Construction Phase

- 5.5.1 During the construction stage, standard waste management measures and good site practices that should be implemented to manage C&D materials generated from the Project include preparation of a Waste Management Plan, on-site sorting and reuse of C&D materials, implementation of a trip-ticket system and appropriate handling, storage and disposal of chemical waste in accordance with the Waste Disposal (Chemical Waste) (General) Regulation and the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. General refuse should be stored in bins or other types of containers with cover separately from C&D materials and chemical wastes. Licensed waste collectors/haulers should be employed by the contractor to remove general refuse from the site, separate from C&D materials and chemical wastes, on a regular basis to minimize environmental impacts.
- 5.5.2 Sediment should be handled in accordance with Section 4.2.1 of the Project Administration Handbook for Civil Engineering Works (PAH) and classified based on their contaminant level with reference to the Chemical Exceedance Levels (CEL) laid down in Appendix 4.28 of the PAH. Guidelines on the initial data assessment, the sampling and testing procedures, the biological test criteria, and the submission requirements set out in Appendix 4.29 of PAH will be followed. Potential impact and the handling, such as treatment and reuse of the excavated sediment, and disposal of excavated sediment will be reviewed and adequately addressed in accordance with Guidance Note. No. 1/2024 under Dumping at Sea Ordinance (Cap. 466) and Dumping at Sea Ordinance (Cap.466). Excavated sediments should be covered with tarpaulin for stockpiling and transportation. Construction plants and equipment should be properly designed and maintained to minimize release of silt, sediments, contaminants or other pollutants.

Operational Phase

- 5.5.3 During the operational phase, general refuse should be collected and removed in appropriate covered containers to prevent odour and windblown litter. Separation of recyclable materials, such as paper and metals, from other waste streams should be encouraged to minimise waste disposal to landfills. All chemical wastes from equipment maintenance should be handled, stored and disposed of properly and in accordance with the requirements of Waste Disposal (Chemical Waste) Regulation.

**5.6 Land Contamination**

- 5.6.1 Site appraisal will be carried out during the EIA stage to identify areas with potential soil or groundwater contamination. Prior to the construction works at the potentially contaminated sites, site investigations and land contamination assessment should be conducted. Based on the findings of the investigation, the remediation actions, if required, should be detailed in a Remediation Action Plan (RAP). No construction

works shall commence prior to the completion of the land contamination assessment, including the remediation works, at the corresponding potentially contaminated sites identified within the Project.

## **5.7 Ecology**

### Construction Phase

- 5.7.1 Detailed ecological assessment will be carried out during the EIA stage. Ecological impacts will be avoided and minimized as far as practicable. For habitats of significant ecological value that will be adversely impacted by the Project, habitat compensation is one of the key measures to mitigate the permanent and temporary wetland habitat loss. The scale of compensation and timeframe will be further reviewed in consultation with Government bureau and departments during the detailed design stage.

### Operational Phase

- 5.7.2 Habitat compensation is one of the measures to mitigate the habitat loss by the above ground structure during the operation of the railway.

## **5.8 Fisheries**

- 5.8.1 Potential encroachment of fish ponds will be avoided and minimized as far as practicable. Appropriate construction site management protocols will be adopted to avoid impact on fisheries due to pollution of watercourses. Other required mitigation measures for fisheries, if any, will be identified during EIA stage and to be implemented during construction.

## **5.9 Cultural Heritage**

- 5.9.1 A Cultural Heritage Impact Assessment, including the Built Heritage Impact Assessment and Archaeological Impact Assessment will be carried out under the EIA study to assess the potential direct and indirect impact on cultural heritage. Impacts on cultural heritage will be avoided as far as practicable. If unavoidable, mitigation measures to the direct and indirect impacts on cultural heritage will be proposed and implemented with prior agreement with the Antiquities and Monument Office.

## **5.10 Landscape and Visual**

- 5.10.1 Possible key landscape and visual mitigation measures are as follows:
- Tree preservation, transplanting and compensatory planting in accordance with LAO PN Nos 6/2023 – Processing of Tree preservation and Removal Proposals for Building Development in Private Projects – Compliance with Tree Preservation Clause under Lease and DEVB TCW 5/2020- Registration and Preservation of Old and Valuable Trees;
  - Control of night-time lighting glare;
  - Erection of decorative screen hoarding compatible with the surrounding setting;
  - Hard and soft landscape areas disturbed temporarily during construction shall be reinstated on like-to-like basis, or to the satisfaction of the relevant Government Departments;

- Considerations for aesthetic design and finishing materials would be adopted to alleviate the visual impacts of any above-ground structures and potential noise barriers/enclosures; and
- Adoption of sensitive architectural design and buffer/screen planting as far as practicable.

## **5.11 Hazard to Life**

- 5.11.1 Quantitative risk assessment (QRA) should be undertaken, if necessary, in the EIA stage to confirm the compliance with the risk guidelines in Annex 4 of the Technical Memorandum of Environmental Impact Assessment Ordinance. Mitigation measures, such as the adoption of contingency plan, will be developed as part of the QRA to be undertaken during the EIA stage to ensure compliance with the Hong Kong Government Risk Guidelines (HKRG).

## **5.12 Severity, Distribution and Duration of Environmental Effects and Further Implications**

- 5.12.1 Subject to the findings of assessments, effective control and mitigation measures will be identified to ensure the impacts are at acceptable levels. The possible severity, distribution and duration of environmental effects such as beneficial and adverse effects; short and long term effects; secondary and induced effects; cumulative effects and trans-boundary effects from committed projects, and further implications will be considered and addressed in the EIA, where applicable.

## 6 USE OF PREVIOUSLY APPROVED EIA REPORTS

6.1.1 The following EIA reports are relevant for reference in the course of the EIA study for the Project as appropriate:

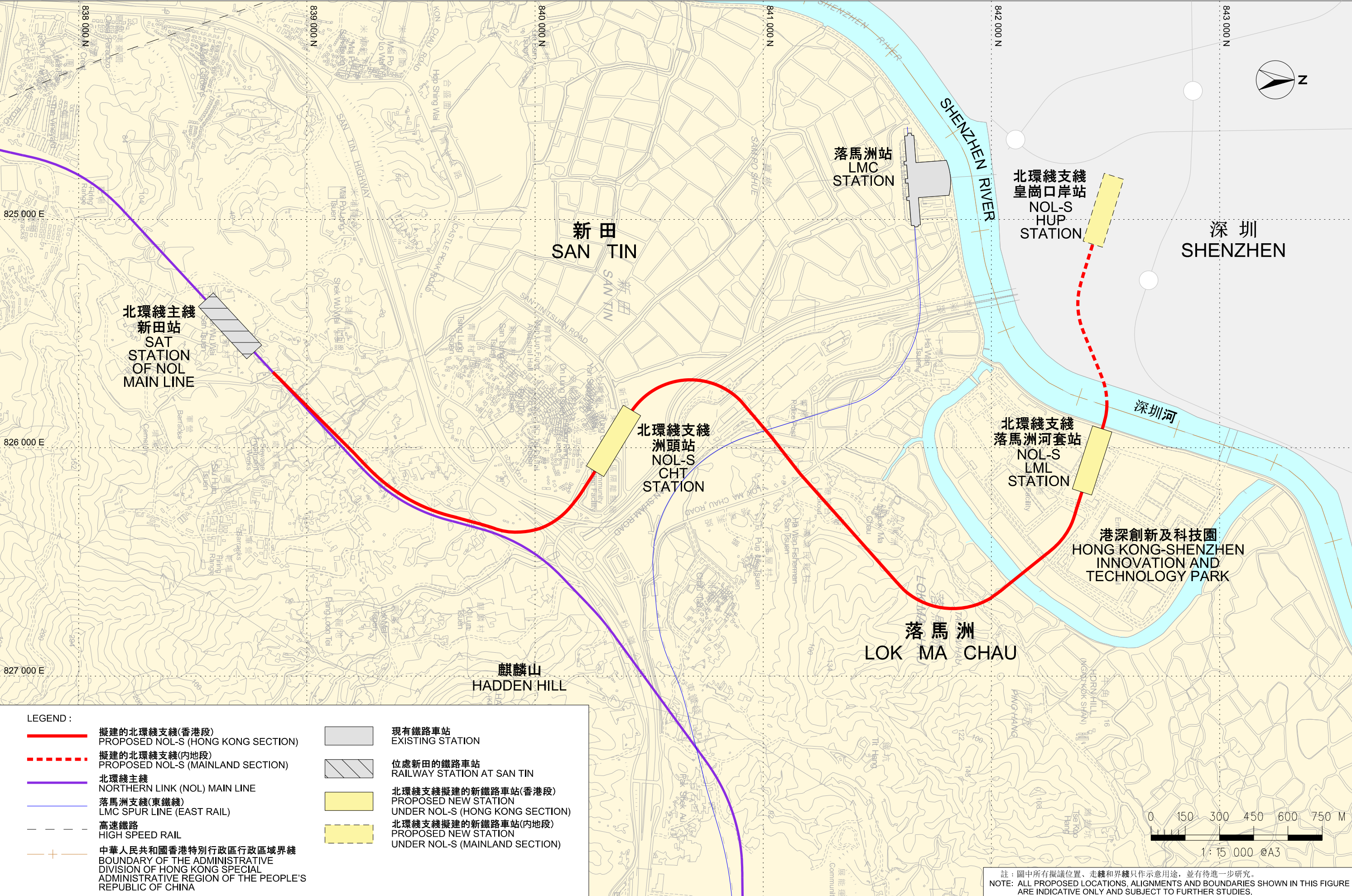
<b>EIAO Register No.</b>	<b>Project Name</b>	<b>Date of Approval</b>	<b>Relevance Environmental Aspect to the Project</b>
EIA-014/1999	Main Drainage Channels and Poldered Village Protection Scheme for San Tin, NWNT	14 September 1999	<ul style="list-style-type: none"> <li>• Ecology</li> </ul>
EIA-071/2001	Sheung Shui to Lok Ma Chau Spur Line	11 March 2002	<ul style="list-style-type: none"> <li>• Noise</li> <li>• Cultural Heritage</li> </ul>
EIA-212/2013	Development of Lok Ma Chau Loop	25 October 2013	<ul style="list-style-type: none"> <li>• Noise</li> <li>• Ecology</li> <li>• Cultural Heritage</li> </ul>
EIA-301/2023	Northern Link	9 February 2024	<ul style="list-style-type: none"> <li>• Noise</li> <li>• Ecology</li> <li>• Cultural Heritage</li> </ul>
EIA-302/2023	San Tin / Lok Ma Chau Development Node	17 May 2024	<ul style="list-style-type: none"> <li>• Noise</li> <li>• Ecology</li> <li>• Cultural Heritage</li> </ul>
EIA-093/2004	Improvements to San Tin Interchange	3 May 2004	<ul style="list-style-type: none"> <li>• Noise</li> <li>• Ecology</li> <li>• Cultural Heritage</li> </ul>

\* All the new station names in this Project Profile are working titles only.

**Figure**



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NORTHERN LINK SPUR LINE (NOL-S)

圖1  
Figure 1

