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ACE-EIA Paper 3/2012
For advice on 9 January 2012

Environmental Impact Assessment Ordinance (Cap. 499)
Environmental Impact Assessment Report
Shatin to Central Link - Hung Hom to Admiralty Section

PURPOSE

This paper presents the key findings and recommendations of the Environmental Impact Assessment (EIA) report for the proposed Shatin to Central Link - Hung Hom to Admiralty Section (SCL(HUH-ADM)) (hereafter known as "the Project") submitted under section 6(2) of the Environmental Impact Assessment Ordinance (EIAO) (Application No. EIA-199/2011). The MTR Corporation Limited (the applicant), and their consultants will present the report at the meeting of EIA Subcommittee if necessary.

ADVICE SOUGHT

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

BACKGROUND

3. The applicant has submitted a total of five EIA reports for the SCL project:

(i) SCL Protection works at Causeway Bay Typhoon Shelter;

(ii) SCL – Tai Wai to Hung Hom Section (SCL(TAW-HUH));

(iii) SCL – Mong Kok East to Hung Hom Section (SCL(MKK-HUH));

(iv) SCL – Hung Hom to Admiralty Section (SCL(HUH-ADM)); and

(v) SCL – Stabling Sidings at Hung Hom Freight Yard (SCL(HHS)).

4. The EIA report for the "SCL Protection works at Causeway Bay Typhoon Shelter" was submitted on 30 September 2010; discussed at ACE EIA Subcommittee meeting on 24 January 2011; endorsed by ACE without condition via letter dated 23 February 2011; and approved without condition by the Director of Environmental Protection under EIAO on 25 February 2011. The Environmental Permit was granted on 4 April 2011 and construction commenced on 21 November 2011.

5. The other four EIA reports were submitted in one go on 12 October 2011. They have been scheduled for discussion at the ACE EIA Subcommittee meeting on 9 January 2012.

NEED FOR THE PROJECT

6. The EIA report states that the Shatin to Central Link (SCL) is a strategic rail corridor for forming an expanded railway network in Hong Kong that will bring various benefits to the community. The Project, as part of the SCL, provides Hong Kong with the fourth Rail Harbour Crossing which essentially relieves the existing congestion on the MTR Tsuen Wan Line through redistributing railway passengers, and connects the new development areas in Kowloon with Hong Kong Island.

DESCRIPTION OF THE PROJECT

7. SCL(HUH-ADM) is an approximately 6 km extension of the East Rail Line starting from the existing Hung Hom Station (HUH) across Victoria Harbour to a new Exhibition Station (EXH) at Wan Chai and terminating at the existing Admiralty Station (ADM) (see **Figure 1**). This section of SCL alignment will be entirely underground while the associated ventilation building, ventilation shafts, plant rooms and station entrances are above-ground structures.

8. The Project includes the following five key elements, namely:

(i) An approximately 6km extension of the East Rail Line including a rail harbour crossing from Hung Hom to Admiralty on Hong Kong Island;

(ii) A new EXH Station located near the Hong Kong Convention and Exhibition Centre;

(iii) An integrated Admiralty Station for the existing MTR Island Line and Tsuen Wan Line, the future SCL and South Island Line (East);

(iv) Ventilation buildings, ventilation shafts, smoke extraction facilities and other associated works of the Project; and

(v) Demolition of the existing Kowloon Freight Building at the south of HUH Station to facilitate the construction of the Project.

9. The Project covers the following designated project (DP) elements under Part I, Schedule 2 of the EIAO:

(i) A railway and its associated stations (EXH and ADM Stations) under Item A.2;

(ii) A railway tunnel more than 800m in length between portals under Item A.7;

(iii) Temporary reclamation works (including associated dredging works) in Victoria Harbour of more than 1 ha. in size and a boundary of which is less than 100m from a seawater intake point under Item C.2(b), and construction of an immersed tube railway tunnel resulting in 5% decrease in cross sectional area calculated on the basis of 0.0mPD in a sea channel under Item C.3(a); and

(iv) A dredging operation in Victoria Harbour exceeding 500,000 m^3 or a dredging operation which is less than 100m from a seawater intake point under Item C.12.

VIEWS OF THE DIRECTOR AND RELEVANT AUTHORITIES

10. The Director of Environmental Protection (DEP), in conjunction with the relevant authorities, considers that the EIA report meets the requirements of the EIA Study Brief and the Technical Memorandum on EIA Process (TM) and hence is ready for purpose of public inspection. Comments from the public and the Advisory Council on the Environment will be taken into account by DEP in deciding whether or not to approve the EIA report under the EIAO.

CONSIDERATION OF ALTERNATIVE OPTIONS

11. Chapter 2 of the EIA report presents various options and alternatives of project design and construction methods that have been reviewed and considered in the course of the development and selection of the preferred scheme for the SCL, taking into account the engineering feasibility, site constraints, programme, environmental aspects, etc. The various alternatives/options considered for project design include: railway alignment (including options requiring/not requiring reclamation), location of station/platforms, location of ventilation buildings/ ventilation shafts, location of entrances/exit and train system (e.g. types of trains (including number of cars) and types of trackforms).

SPECIFIC ENVIRONMENTAL ASPECTS TO HIGHLIGHT

Noise Impact

12. The EIA report has assessed both air-borne noise impact and ground-borne noise impact arising from the implementation of the Project.

Air-borne noise impact

13. The whole railway alignment of the Project would be underground. The key air-borne noise concerns would arise during construction of the Project. The EIA predicted that the unmitigated construction noise levels during non-restricted hours at the representative noise sensitive receivers (NSRs) would range from 52 to 87 dB(A), exceeding construction noise criterion of 75 dB (A), $Leq_{(30mins)}$, by up to 12dB(A). With the implementation of a series of mitigations measures including the usage of quieter plant, movable noise barriers and noise insulating fabric, the resulting noise levels due to the Project itself would fully comply with the TM criterion. However, when taking into consideration the contribution from other concurrent projects in the vicinity, including Wan Chai Development Phase II and Central Wan Chai Bypass, the cumulative mitigated air-borne construction noise levels at the representative NSRs would range from 52 to 76 dB(A). An exceedance of 1 dB(A) in residual noise impact was predicted at NSR EX1 (Causeway Centre - a residential development near Wan Chai harbourfront), for up to 2 months. As a result, about 120 dwellings would be affected. Review of further mitigation measures has been conducted. In accordance with Section (c) of Annex 5 of the TM, "*noise criteria ... for construction .., shall be met as far as*

practicable. All practicable mitigation measures shall be exhausted and the residual impacts are minimised". Because of the constraints due to close proximity between the affected NSRs and works site boundary (<50m), the review concluded that all practical measures have been exhausted and residual impacts have been minimised as far as practicable. Noise monitoring would be carried out during construction to ensure that the nuisance to residents would have been kept minimised.

14. Based on the construction programme, most construction works will be carried out during non-restricted hours. Any construction works during restricted hours (i.e. 1900-0700 hours and any time on a general holiday, including Sunday) would be controlled under the Noise Control Ordinance and the Construction Noise Permit system.

15. The potential air-borne operational noise from fixed plant noise sources including cooling towers, transformer bay and ventilation/plant buildings and ventilation shafts were assessed in the EIA. No exceedance was anticipated with proper selection of plants and acoustic treatment.

Ground-borne noise impact

16. Potential ground-borne noise during construction and operational phases at representative NSRs have been assessed in the EIA. For this Project alone, the predicted daytime construction ground-borne noise levels ($Leq_{(30mins)}$) at representative NSRs ranged from 32 to 63 dB(A), which are below the daytime noise criterion of 65 dB(A). Taking into account the impacts from SCL (MMK-HUH), the cumulative ground-borne construction noise levels ($Leq_{(30mins)}$) at NSR HH9 (Harbourfront Horizon) was predicted to be ranging from 43 to 49 dB(A), still well below the criterion of 65 dB(A). No adverse cumulative ground-borne construction noise impact was predicted.

17. The predicted operation ground-borne noise levels at all representative NSRs are also within the relevant criteria, with the predicted nighttime noise levels ($Leq_{(30mins)}$) ranging from <20 to 37 dB(A), below the criterion of 45 dB(A) for residential development. Potential cumulative ground-borne noise impacts from the Project together with the operation of existing rail lines (i.e. MTR Island Line and Tsuen Wan Line) and the planned rail line (i.e. South Island Line (East)) have been considered in the EIA. Since the predicted ground-borne noise levels due to the Project itself at the NSRs nearest to the existing rail lines would be at least 20dB(A) below the criterion, the contribution from the Project to the cumulative

ground-borne noise would not be a concern.

Water Quality Impact

18. The main marine works of the Project would include the dredging of marine sediment, immersed tube tunnel works, filling, temporary reclamation at Hung Hom and Causeway Bay Typhoon Shelter areas in Victoria Harbour as well as marine works at the proposed casting basin at the ex-Shek O Quarry.

19. The EIA report has identified the increase in suspended solids (SS) level as the major water quality impact of the Project. The EIA has recommended mitigation measures including silt curtains, silt screens, closed grab dredger, control of dredging rate and construction by phases, etc. to reduce the water quality impact. No adverse water quality impact is identified at all water sensitive receivers. For example, at WSD's seawater intakes, the predicted maximum mitigated cumulative impacts of SS levels during wet season would range from 2.46 to 7.66 mg/l, which are below the WSD's criterion of 10mg/l.

20. Due to the change in seabed levels after the tunnel construction of the Project in Victoria Harbour, the EIA has also assessed and found that the SCL tunnel would change the mean discharge flow rate through Victoria Harbour by not more than 0.1%. As such, no major impact on the overall assimilative capacity/water quality of Victor Harbour is expected.

21. At the Shek O Casting Basin where tunnel segments would be constructed, activities relating to the flooding and emptying of the casting basin would have potential adverse impact on water quality. A series of water quality mitigation measures are proposed. For example, prior to flooding the casting basin, a washdown will be carried out. The washdown water (and any concrete curing water) will drain to a wastewater treatment unit for treatment prior to discharge. The water quality of the discharge from the treatment unit would be controlled under the Water Pollution Control Ordinance. After the casting basin has been flooded with seawater by pumping, no escape of water would be allowed for 24 hours until the suspended materials in the water have settled. Prior to opening the water gate to float out the precast tunnel segments from the casting basin, floating debris inside the basin will be removed. With proper implementation of the proposed mitigation measures, the EIA concluded that the water quality impact due to the operation of the casting basin is considered acceptable.

Landscape and Visual Impacts

22. The Project would involve demolition of existing structures and construction of new above-ground structures of ventilation/plant buildings, vent shafts, and station exits/entrances, cut-and-cover tunnel works, and temporary barging points. The Project would also affect approximately 930 number of trees of common species, of which 240 trees would be transplanted and 690 trees would be felled, subject to future approval of the Tree Removal Application by Lands Department. None of the affected trees is "Registered Old and Valuable Trees" on the records of the Leisure and Cultural Services Department.

23. To mitigate landscape and visual impact, aesthetically pleasing design would be adopted for the above-ground structures. Compensatory tree planting at a ratio of 1:1 in terms of number of trees lost was proposed. Since there will not be any permanent loss of landscape areas, trees to be removed from the landscape areas during construction will be replanted in the same area. To make up the short fall in compensation in terms of total tree girth in areas with limited space, horizontal and vertical greening was also proposed. The EIA considered that the overall landscape and visual impact associated with both construction and operation of the Project are acceptable with the recommended mitigation measures.

Waste Management and Land Contamination

24. The EIA estimated that the Project would generate 841,800m^3 of sediment, of which 315,000m^3 is suitable for Type 1 - Open Sea Disposal, 14,000m^3 is suitable for Type 1 - Open Sea Disposal (Dedicated Sites), 496,300m^3 requires Type 2 - Confined Marine Disposal, and 16,500m^3 requires Type 3 - Special Treatment/ Disposal. The EIA recommended that the Type 3 sediment be sealed in geosynthetic containers for disposal at designated contaminated mud pits in accordance with ETWB TC(W) No. 34/2002 (i.e. the same method used in Central Reclamation Phase III and Wan Chai Development Phase II).

25. The EIA also estimated that the Project would generate about 1,097,000m^3 of inert Construction and Demolition (C&D) materials. The Project would minimise the generation of C&D materials and maximise the reuse. Surplus inert C&D materials would be delivered to Public Fill Reception Facilities or other concurrent projects including the Hong Kong-Zhuhai-Macau Bridge, Hong Kong Boundary Crossing Facilities, Tuen Mun-Chek Lap Kok Link, Wan Chai Development Phase II and Central-Wan Chai Bypass, etc., and outside Hong Kong at Taishan, China as the last resort. The Project would make use of the existing

barging point at Hung Hom for handling C&D materials generated from the works in Kowloon side and construct another batching point within the project works area in Wan Chai for handling C&D materials from the Hong Kong side.

26. About 30,000 m^3 of non-inert C&D materials would be generated and would be reused and recycled as much as possible before disposal at North East New Territories Landfill.

27. With the implementation of the recommended mitigation measures, no adverse waste management implications would be expected.

28. The Stage 1 Site Investigation (SI) did not find any land contamination. However, the Stage 1 SI has not covered a potential contaminated site at the Wanchai Swimming Pool (location with above-ground diesel storage tanks) due to its current active use. After the site has been vacated, Stage 2 SI would be conducted to confirm any contamination which, even if found, is expected to be surmountable.

Other Environmental Impacts

29. Other impacts including construction dust, cultural heritage, ecology, fisheries as well as hazard to life have also been addressed in the EIA report. With the implementation of recommended mitigation measures, the Project will comply with the relevant requirements under the TM.

ENVIRONMENTAL MONITORING AND AUDIT

30. The EIA report includes an Environmental Monitoring and Audit (EM&A) Manual which recommends an EM&A programme to be carried out. Key recommended EM&A requirements cover construction phase water quality, air-borne noise and dust monitoring. Prior to the operation phase of the Project, a commissioning test will be conducted to ensure compliance of the operational ground-borne noise levels with the adopted noise criteria.

PUBLIC CONSULTATION

31. The applicant has made the EIA report, EM&A Manual and Executive Summary available for public inspection under the EIAO from 24 November 2011

to 23 December 2011. Members will be informed of any public comments received by the Environmental Protection Department.

December 2011
Environmental Assessment Division
Environmental Protection Department

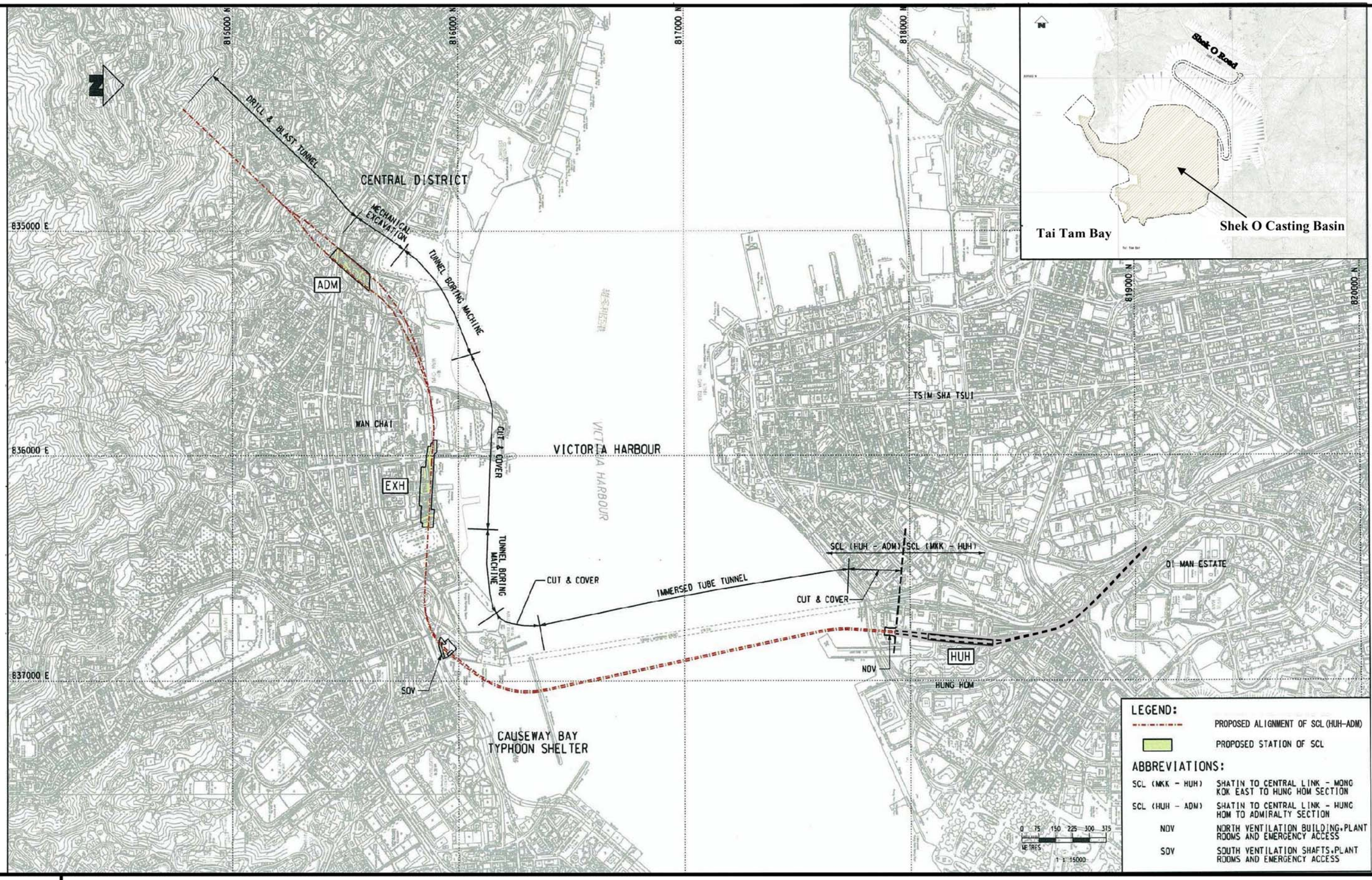

Figure 1: Shatin to Central Link - Hung Hom to Admiralty Section (SCL(HUH-ADM)) General Layout Plan

(This figure was prepared based on Figure Nos. NEX2213/C/331/ENS/M50/011 & NEX2213/C/331/ENS/M50/025 of the submitted EIA report)