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ACE-EIA Paper 1/2012
For advice on 9 January 2012

Environmental Impact Assessment Ordinance (Cap. 499)
Environmental Impact Assessment Report
Shatin to Central Link – Tai Wai to Hung Hom Section

PURPOSE

This paper presents the key findings and recommendations of the Environmental Impact Assessment (EIA) report for the proposed Shatin to Central Link – Tai Wai to Hung Hom Section (SCL (TAW – HUH)) (hereafter known as "the Project") submitted under section 6(2) of the Environmental Impact Assessment Ordinance (EIAO) (Application No. EIA-200/2011). 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 by the Director of Environmental Protection without condition 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 together by the applicant for approval under the EIAO on 12 October 2011. They have been scheduled for discussion at the ACE EIA Subcommittee meeting to be held 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 Tai Wai to Hung Hom Section of the SCL is also an extension of the Ma On Shan Line to connect the West Rail Line.

DESCRIPTION OF THE PROJECT

7. The Project is to construct and operate an approximately 11km long railway which connects the Tai Wai Station of the Ma On Shan Line and the Hung Hom Station of the West Rail Line as to allow commuters to travel in a direct line from Ma On Shan to Tuen Mun. This section of SCL alignment will be largely underground while the associated ventilation building, ventilation shafts, plant rooms and station entrances are above-ground structures.

8. The Project (see **Figure 1**) includes the following four key elements, namely:

(i) a railway of approximately 11km long, with its majority underground from Tai Wai to Hung Hom;

(ii) seven railway stations are to be provided at Hin Keng, Diamond Hill, Kai Tak, To Kwa Wan, Ma Tau Wai, Ho Man Tin and Hung Hom. Diamond Hill, Ho Man Tin and Hung Hom will become integrated interchange stations with the existing Kwun Tong Line, the future Kwun Tong Line Extension and Cross Harbour Section of the Shatin to Central Link, respectively;

(iii) a train stabling siding at Diamond Hill CDA site (i.e. the former Tai Hom Village); and

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

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

(i) Item A.2 - A railway and its associated stations;

(ii) Item A.4 – A railway siding or depot;

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

(iv) Item A.8 – A railway bridge more than 100m in length between abutments; and

(v) Item K.10 - An explosive depot in a stand-alone, purpose built building.

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 Environmental Impact Assessment 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, location of staling siding, station/platforms, ventilation buildings/ ventilation shafts, entrances/exit and train system.

SPECIFIC ENVIRONMENTAL ASPECTS TO HIGHLIGHT

Noise Impact

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

Air-borne Noise

13. The railway alignment of the Project will be underground except for a short section on viaduct and at-grade near Hin Keng Station. The key air-bone noise concerns arose from construction phase of the Project. The EIA predicted that the unmitigated construction noise impact at the representative noise sensitive receivers (NSRs) could reach a maximum of 99dB(A), exceeding construction noise criteria of 75dB(A) as stipulated in TM by up to 24dB(A). With implementation of a series of mitigation measures including usage of quieter plants, movable noise barriers and acoustic enclosures for various construction plants, the resulting noise levels at most of the NSRs would comply with the TM criteria except for a small number of residential premises and the Good Shepherd Primary School located in close proximity to the works site of the Ma Tau Wai Station. The exceedance at the residential premises will be in the range of 1-9 dB(A) for the duration ranges from 2–17 months and that at the school during examination period will be up to 14 dB(A) for 13 months.

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14. Review of further mitigation measures has been conducted. In accordance with Section (c) of Annex 5 of the TM, the noise criteria for construction of designated projects shall be met as far as practicable. All practicable mitigation measures shall be exhausted and the residual impacts are minimized. Because of the constraints due to close proximity between the affected NSRs and works site boundary, the review concluded that all practical measures have been exhausted and residual impacts have been minimized as far as practicable. To address the residual noise impacts during the construction period, the Project Proponent will set up a liaison mechanism to facilitate communications with concerned parties during the construction period on the conduct of work with a view to reducing the impacts and inconvenience to the absolute minimum as well as consider other voluntary initiatives such as Indirect Technical Remedy (ie. provision of improved glazing and air-conditioning) if required. Noise monitoring would be carried out during construction to ensure that the nuisance to residents would have been kept minimized.

15. For the operational train noise from the viaduct between Tai Wai Station and Hin Keng Station, the unmitigated noise impact is predicted to be up to 6 dB(A) above the criterion of 60 dB(A) during night-time. With the provision of noise barriers along the tracks, the mitigated operational train noise will be reduced to within 45 dB(A) which fully complies with the relevant criteria.

16. The potential air-borne operational noise from fixed plant noise sources including ventilation/plant buildings and ventilation shafts have been assessed. With proper selection of locations of the plants and provision of acoustic treatment, no exceedance was anticipated.

Ground-borne Noise

17. Potential ground-borne operational noise at the representative NSRs have been assessed in the EIA. The predicted noise levels ($Leq_{(30mins)}$) at all representative NSRs would meet the night-time criterion of 45 dB(A) for residential developments. Potential cumulative ground-borne noise impacts from the operation of other planned rail lines (i.e. SCL(TAW-HUH) and KTE) were also considered in the EIA and the predicted cumulative ground-borne noise at the affected NSR would be 4 dB(A) below the criterion of 45 dB(A).

18. Regarding the ground-borne construction noise arising from the use of Tunnel Boring Machine, the predicted noise levels ($Leq_{(30mins)}$) at representative

NSRs ranged from 24 to 49 dB(A), which are below the daytime noise criterion of 65 dB(A).

Hazard to Life

19. A part of the Project falls within the 1000m Consultation Zone of a Potentially Hazardous Installation (PHI), i.e. Sha Tin Water Treatment Works. The EIA has included a quantitative risk assessment and the results conclude that the associated individual and societal risks during the operation and construction phases of the Project will be acceptable and within the TM criteria.

20. The EIA has also included a quantitative risk assessment on the hazard to life arising from the storage and transportation of explosives. The results shown that the societal risk lies within the "As Low As Reasonably Practicable" (ALARP) region. An ALARP assessment was carried out by identifying all practicable mitigation measures and assessing cost effectiveness of each measure in terms of risk reduction achieved and cost of implementing the measures. With the recommendations implemented, the results comply with the ALARP principles.

Landscape and Visual Impacts

21. The existing landscape resources include the vegetation on slopes south of Tai Wai tunnel portal, Hin Tin and Ma Chai Hang Playgrounds and trees in Diamond Hill CDA Site. The EIA predicted that a total of about 45,601 m^2 of public open space and about 3,029 trees would be affected by the construction works. Mitigation measures include preservation of vegetation, tree transplantation, compensatory tree planting and re-provisioning of public open space are recommended to minimize landscape impacts.

22. The visual intrusion arising from the above ground structures, including the viaduct structures, stations, Diamond Hill Stabling Sidings, emergency access and various ventilation building and shafts will be mitigated by screen planting, aesthetic architectural treatment and integration of greening measures on built structures. Through the above mitigation measures, the visual and landscape impacts arising from the project is considered to have been reduced to an acceptable level.

Cultural Heritage Impact

23. The EIA has addressed the potential impacts on archeological sites and

built heritages including the Old Pillbox (Grade 2 Historical Building) and Former Royal Air Force Hanger (Grade 3 Historical Building) and archaeological interest area at Diamond Hill CDA site (i.e. the former Tai Hom Village); and remains of Lung Tsun Stone Bridge and the Former Kowloon City Pier at Kai Tak area.

24. With provision of adequate buffer distance and special care in construction, direct impact on the remains of Lung Tsun Stone Bridge and the Former Kowloon City Pier can be avoided. The Old Pillbox and the Hanger will be dismantled and re-instated within the future CDA site. Vibration monitoring will be carried out for some of the heritage items to ensure that indirect impact in the form of construction vibration impact on them will be insignificant.

25. For the archaeological sites within the works areas at the CDA site and Site of Former Sacred Hill, the EIA has recommended to conduct survey-cum-excavation works in these two areas prior to the construction works. Any archaeological features identified will be properly protected.

Waste Management

26. The EIA anticipated that the Project would generate about 278,400m^3 dredged/excavated sediment, of which approximate 195,900m^3 of the sediment would be suitable for Type 1 – Open Sea Disposal, 53,200m^3 of the sediment requires Type 2 – Confined Marine Disposal Open Sea Disposal, and 29,200m^3 requires Type 3 – Special Treatment/Disposal.

27. The EIA also estimated that the Project would generate about 4.0Mm^3 of construction and demolition (C&D) materials. The Project would minimize the generation of C&D materials and maximize the reuse. Surplus inert C&D material would be delivered to Public Fill Reception Facilities or other concurrent projects as the last resort.

Other Environmental Impacts

28. Other impacts including construction dust, ecology, water quality, land contamination 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.

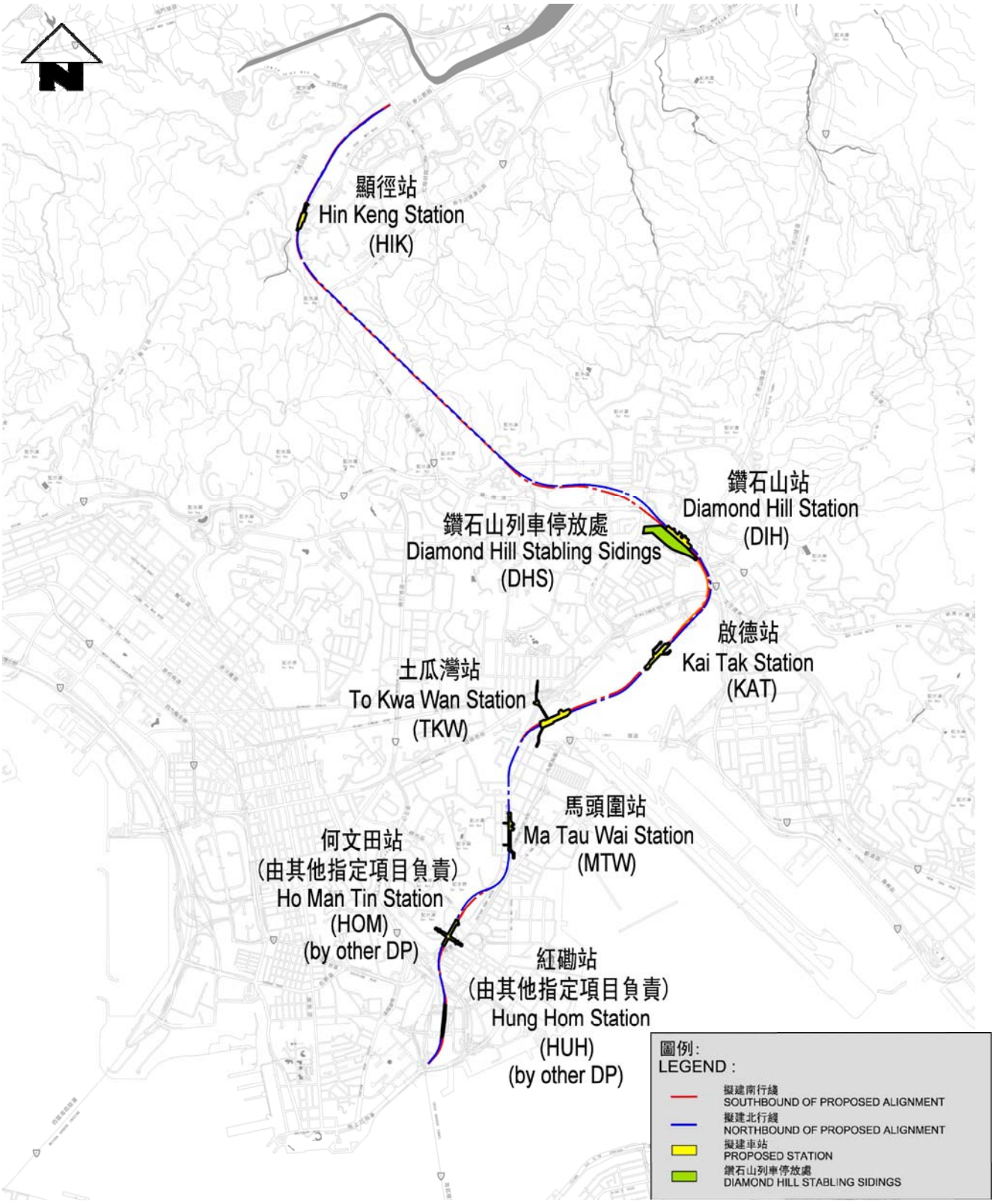
ENVIRONMENTAL MONITORING AND AUDIT

29. The EIA report includes an Environmental Monitoring and Audit (EM&A) Manual which recommends an EM&A programme during both the construction and operation phases of the Project. Key recommended EM&A requirements cover construction stage air-borne noise, ground-borne noise, dust, water quality, landscape and visual impacts and cultural heritage impacts; and operation phase air-borne and ground-borne noise monitoring.

PUBLIC CONSULTATION

30. 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



Project Title 工程名稱	Shatin to Central Link - Tai Wai to Hung Hom Section 沙田至中環綫 - 大圍至紅磡段
Figure 1 圖一	General Alignment and Proposed Locations of Stations and Stabling Sidings 車站及列車停放處之走綫及擬建位置 [Reproduced from Figure 1.1 of the Executive Summary of the EIA Report] 根據環境影響評估報告的行政摘要圖 1.1 編制