3. PROJECT DESCRIPTION

Introduction

3.1 This section presents a summary of the adopted alignment and preferred construction methodology for the Project, which would run from the new Hung Hom Station (HUH) across the harbour to the new Exhibition Station (EXH) and Admiralty Station (ADM). Minor updates to the Project, such as locations and structures, could occur during further design development and construction, and these would be updated through the monthly EM&A reporting.

Preferred Project Alignment and Design

Project Alignment

3.2 The preferred alignment for the Project would begin at the north of the new North Ventilation Building, Plant Rooms and Emergency Access (NOV) which is approximately 100m from the southern end of HUH and would cross the harbour at the proposed Hung Hom Landfall, along the Western Corridor Option as described in **Section 2.** It would then pass through the Causeway Bay Typhoon Shelter (CBTS) before reaching the Hong Kong Island at the proposed South Ventilation Shafts, Plant Rooms and Emergency Access (SOV) situated in the west of CBTS.

3.3 On the Hong Kong Island, the alignment corridor would run underground along the northern shore through the new EXH, and interchange with the Tsuen Wan Line, Island Line and South Island Line East (SIL(E)) at ADM. As the south terminus station of the SCL, an overrun tunnel would be required at ADM to allow turn back of the train. A graphical illustration of the preferred alignment is shown in **Figure No. NEX2213/C/331/ENS/M50/011**. The vertical and geological profiles of the alignment are presented in **Appendix 3.1**.

Exhibition Station

3.4 EXH will be an underground station for the proposed SCL. EXH is the first station after the cross harbour section of the Project. EXH is expected to handle passengers to and from the north Wan Chai district, visitors to the Hong Kong Convention and Exhibition Centre (HKCEC) and related facilities, and also allows for interchange with the Public Transport Interchange (PTI) located directly above the station bounded by Fleming Road to the west and Convention Avenue to the north.

3.5 EXH will have three levels, with the station concourse (at approximately -4 mPD) above two platform levels. The station extends from the west of Tonnochy Road, to the centre of Fleming Road to the east, with overall length of approximately 350m. Both platform lengths are driven by the length of the SCL platform, which is required to accommodate 9-car trains.

3.6 Two principal entrances (i.e. Entrances A and B) are planned for this station connecting to the already established elevated walkway system at podium level. Entrances A and B are located on the southwestern and eastern sides of the station box respectively. The area above the station will be used for the reprovision of the bus terminal, taxi and private car drop off area, station Mechanical, Electrical and Plumbing (MEP) buildings and landscape areas. General layout plan and section of the EXH are presented in **Appendix 3.2**.

3.7 At western end of the station, there will be four ventilation shafts located on a traffic island bounded by Road P2 and its associated slip road. The island will be on the at grade pedestrian route to the HKCEC II from the station. A top ventilation concept has been adopted for these shafts to reduce their visual presence. For those ventilation shafts near Convention Avenue, they are clustered into two groups. The first cluster, comprised of ventilation shafts, includes the trackside and station ventilations which have been designed to be visually a part of the plant building; the second is the lone station ventilation which has been amalgamated with the Entrance A.

3.8 For the ventilation shafts at the eastern end of the station, the visual impact has been minimized by integrating them with the ancillary plant building and also Entrance B. The ventilation shafts that have been integrated with the ancillary building consist of tunnel, trackside and station ventilation shafts with a mixture of louvered and top vent. This integration enables a consolidated and minimized footprint of the vent wall along the eastern face of the ancillary building. Another pair of station vents has been amalgamated with Entrance B.

Ventilation Buildings / Ventilation shafts

North Ventilation Building, Plant Rooms and Emergency Access (NOV)

3.9 The NOV houses two plants, namely the flood gate and the tunnel ventilation system for the SCL tracks as shown in **Figure No.NEX2213/C/331/ENS/M50/021**. This also serves as the access point for the Fire Services team in case of emergency. The NOV is located to the south of the Hung Hom podium and above the SCL running tracks. It is laid out on three levels and consists of the following rooms:

- Ground Level (at approximately +5 mPD) - Tunnel Ventilation Fan Room, Tunnel Environmental Control Room, Air Receiver & Compressor Room, Plenum and Flood Gate Machine Room
- Basement 1 (at approximately -2 mPD) - Tunnel Ventilation Fan Room, Flood Gate Choke room (High Level).
- Basement 2 (at approximately -5 mPD) - Plenum and Choke Room.

3.10 The NOV sits nominally 7 m above the ground level and generally oriented in the north south direction. The east and the west faces of the NOV have a concave face which articulates the flat facade of building and gently softens the street view of the building as the plane of the front recedes and returns in the distance. Furthermore the elevation of the building is also arched with the crest towards the north and south side, lending a simple and elegant silhouette to the building. The roof of the building is layered with green roof, minimising the visual impact of a normally hard roof surface and helping to limit the heat island effect of the building. The roof also houses the ventilation shafts for the SCL tunnels (Nominal 300mm higher than the grass roof) with a top ventilation configuration, thereby completely removing the visual impact of the typical ventilation structures. The facade of the NOV will be made of profiled concrete with mineral silicate paint over.

South Ventilation Shafts, Plant Rooms and Emergency Access (SOV)

3.11 The SOV is proposed to be located at the Police Officers' Club (POC) site in Causeway Bay as shown in **Figure No.NEX2213/C/331/ENS/M50/023**. It will serve the SCL and also serve as an Emergency Access Point (EAP)/Emergency Egress Point (EEP) area. The excavation for the underground portion of the SOV will be used as a launching shaft for the TBM tunnel construction towards EXH.

3.12 As the SOV is co-located with the POC on the existing POC site, its design has to be integrated with the re-provisioned POC. The majority of the building services and tunnel ventilation plant rooms are located in the basement floors of the SOV, and only the facilities that require vehicle access and natural ventilation are housed on the ground floor. This minimizes the visual impact at the POC and occupation of the site at ground level by the SCL facilities. Owing to the relatively large setback distance with the nearby residential premises, potential environmental concerns such as noise during construction and operation phases could be minimized.

3.13 There are five numbers of ventilation shafts at the SOV which include:-

- 2 numbers for SCL north and south bound tunnels; and
- 1 number for the general ventilation (intake and exhaust) of the plant rooms and facilities at SOV.

3.14 The ventilation shafts at the SOV are located in the southern part of the site with the exhaust discharge facing Gloucester Road away from the direction of the POC building. In order to minimize

the visual impact and visual obstruction to the POC, the lourve discharge is proposed to be in an upwards direction, and the bottom of lourve is 3m above finished ground level. This can reduce the overall height of the shafts. The vertical shaft is offset from the louvre by approximately 2m and the internal surface can be arranged to tilt outwards so that any water ingress can be drained outside the shaft.

Works Area(s) / Site Requirements and Locations

3.15 To minimize the potential disturbance and impact to the public and environment, the major works areas/sites are typically located at the site of the permanent works. To support the construction of the Project, additional temporary works areas/sites would be required within SCL scheme/project boundary for the provision of site office, storage of materials, utility, barging points for efficient removal of spoil, temporary traffic management scheme, silos and ground treatment. The locations of works areas/sites have been selected with consideration of their accessibility and suitability for construction works and future permanent facilities. A summary of works areas/sites currently envisioned for supporting the construction of the Project is presented in **Appendix 3.3**. Locations of the works areas/sites for the Project and extent of SCL scheme/project boundary within which minor activities/works for supporting the construction of the Project may occur are illustrated in **Figure Nos. NEX2213/C/331/ENS/M50/021** to **025**. Subject to actual site conditions and constraints, minor preparatory works could also be required to be conducted in and around the project boundary. However, these procedures would only be short-term without inducing major environmental implications to nearby sensitive receivers. With the implementation of appropriate standard control measures and good site practices, no adverse environmental impact would be anticipated.

Barging Points

3.16 Spoil would be generated from the tunnelling and earth works of the Project. Two barging points have been proposed to transport the spoil generated from the works areas to the locations for reuse/disposal. A summary of the proposed barging points is presented in **Table 3.1**.

Table 3.1 Proposed Barging Points

Location	Serving Area	Remarks
Hung Hom Freight Pier	Primarily for works areas in Hung Hom	It is a facility shared use by Kwun Tong Line Extension (KTE), SCL (TAW-HUH), SCL (MKK-HUH) and this Project. Major activities include haul road truck movements and loading/unloading of materials to barges. Based on the latest design information, two berths will operate at the beginning. Before commencement of works at the Hung Hom Landfall, the berth at the tip of the Freight Pier will be demolished leaving only one berth in operation.
Wanchai ex-Public Cargo Working Area	Works areas on Hong Kong Island	There is no need for any dredging, marine work or modification of sea wall.

3.17 Hung Hom Freight Pier has been previously employed for loading and unloading of goods. Owing to the similarity with the existing loading and unloading operation, the pier can be easily converted to a barging point for C&D material. It is expected that simplest form of loading ramps with an enclosed tipping hall to be constructed. A wheel washing facility is also planned to be provided at each barging point to minimise the construction dust impact. Neither marine works nor modification to the existing sea wall would be undertaken under the Project.

Off-site Works Area

Shek O Casting Basin

3.18 Shek O Quarry is located on the south-western side of the D'Aguilar Peninsular of the Hong Kong Island, and has been operated since 1964. The site was previously adopted as quarry and

Immersed Tube (IMT) casting basin for Lantau Airport Rail. It is recognized that the Shek O Quarry site has been under rehabilitation and the rehabilitation works were substantially completed in early 2011. The existing quarry basin has been transformed into a marine cove.

3.19 Under this Project, it is proposed to use Shek O Quarry basin as a casting yard for IMT and a site for concrete batching from 2013 to 2018. The casting yard will consist of a barging point for loading and uploading of materials to barge. There are two options proposed for the barging point as shown in **Figure No. NEX2213/C/331/ENS/M50/026**. Based on the current design, no dredging would be required for construction of the casting basin. The outcrop island and the gate frames of the existing quarry would be retained. It would basically involve installation of the gates back in place at the existing gate frames. After completion of all the IMT fabrication and construction works, the gate will be removed and the site will be reinstated to the existing conditions.

Tree Reception Areas

3.20 All the trees affected by the construction of SCL (HUH-ADM) would be compensated within the project boundary as far as possible. However, due to the restricted availability of on-site areas, some of the compensatory trees may need to be planted off-site. The locations of these off-site tree reception areas are yet to be decided and subject to the tree felling applications. Some possible sites that may be considered include Long Valley, Ho Sheung Heung Priority Site and along Ng Tung River. These off-site tree reception areas may also need to be shared among different railway projects including but not limited to other sections of the SCL.

Access Road at Lo Wu

3.21 The proposed Access Road at Lo Wu is an extension of the existing Drainage Services Department (DSD)'s maintenance access road adjacent to the Sheung Shui Treatment Works for connecting to the existing Lo Wu Marshalling Yard which is currently serving the East Rail Line. The proposed access road would not involve any modification works to the existing DSD's maintenance access road, except about 10-20m road extension from the northern end of the existing access road. Location of the proposed access road extension is shown in **Figure 1 of Appendix 3.5**.

3.22 Works activities for the proposed access road extension would only involve minor construction works such as site clearance, road formation and concrete road slab laying, lasting for a short duration of about one month. The likely environmental impacts associated with the proposed works would mainly relate to the construction impacts. Considering that the proposed works would be minor in nature, limited scale (less than 20m) and short-term (last for about one month), significant environmental impacts arising from its construction would not be expected. A more detailed discussion on the potential environmental issues with respect to the proposed works is provided in **Appendix 3.5**.

Construction Methods

3.23 As described in **Section 2**, various construction methods and sequences have been considered and the preferred construction methods for the Project have been selected with respect to the site-specific geological conditions and constraints as well as environmental considerations. The following sections further describe the construction methods and sequences of works envisaged for the Project facilities and other supporting facilities required for the construction of the Project.

Hung Hom Section

3.24 Major activities on the Hung Hom side predominately comprises of the construction of proposed NOV, construction of tunnel section at Hung Hom Landfall by cut-and-cover (C&C) method with marine cofferdam, and barging activities at Hung Hom Freight Pier.

3.25 The Hung Hom Landfall is the section where the SCL alignment links the northern end of the cross-harbour IMT tunnel and the southern end wall of the NOV. Due to the constraint of the existing Hung

Hom bypass, a section of C&C construction is required adjacent to the existing seawall at Hung Hom. This would involve the removal of several fender piles of the Hung Hom Bypass and the construction of a temporary cofferdam with an elevated platform supported on piles to provide sufficient works access and to provide marine protection to the existing pier of the Hung Hom Bypass.

3.26 Upon the completion of the cofferdam, the reinforced concrete box tunnel will be cast in-situ and founded on soil or rock as a floating structure. The general layout of this box tunnel will be similar to the IMT tunnel section. After the excavation and tunnel construction works to be carried out within the cofferdam, the temporary reclamation will be removed and the fender piles of the Hung Hom Bypass will be reprovisioned in a slightly different form.

3.27 The works areas in the vicinity of the HUH landfall are not dedicated purely to the Hung Hom Landfall works; in particular the Hung Hom Freight Pier is also to be used as a barging point during construction of this Project, SCL (TAW-HUH), SCL (MKK-HUH) and KTE works. To facilitate IMT works, the tip of the Hung Hom Freight Pier will be demolished and then re-instated after the IMT works have been completed.

3.28 The proposed NOV will be erected right above the south approach tunnel. Since the NOV will be a permanent structure in the Hung Hom section, its footprints and associated Emergency Access would also serve as works area during the construction phase of the Project so that environmental impacts to the surrounding area can be minimised.

Cross Harbour Section

3.29 The IMT construction method will be adopted for the cross harbour section of the Project. In general, dredging, trimming, laying of tunnel tubes and filling will be conducted in sequence. The key environmental impacts to be addressed are expected to be water quality, ecology, fisheries and marine sediment issues. These are addressed in detail in the relevant technical chapters.

3.30 The main operations that will require the use of marine plants are dredging, placement of elements, foundation, backfill and protection works for the IMT. Dredging of the trench will mainly be in superficial marine deposits, the underlying alluvium and decomposed granite. The maximum depth and portion of IMT extending above the seabed is generally dictated by marine clearance requirements. For the Project, the reinstated seabed above IMT would be at a similar but generally lower level than the adjacent Cross Harbour Tunnel, to ensure sufficient water depth for marine traffic is achieved whilst reduction of the amount of dredging for installation of the IMT units has been considered.

3.31 At the shore ends either side of the tunnel at Hung Hom and the CBTS, the tunnel could be constructed without the need for permanent reclamation, except for the reinstatement of the fender piles of Hung Hom Bypass.

3.32 Based on the preliminary design information, underwater blasting is considered as a provisional construction technique in case bedrock or large boulders are encountered that cannot be removed by grab in the middle of the fairway and south of Hung Hom Landfall. Explosives will be delivered from the TKO Area 137 Pier to the works pontoon in Victoria Harbour by contractor. There is no overnight storage of explosives, thus Quantitative Risk Assessment (QRA) is not required. The associated water quality, ecology and fisheries implications associated with this underwater blasting are addressed in relevant technical chapters.

Works at CBTS Breakwater

3.33 Temporary reclamation will be required to construct the portion of the SCL tunnel running through the existing CBTS breakwater and inside the CBTS. The temporary reclamation would be located on the northern side of the breakwater and would not be removed until the breakwater is fully reinstated in order to provide protection to the CBTS.

3.34 Options to reduce the area of reclamation, such as the use of a pipe piled cofferdam without temporary seawalls and reclamation, were considered for the section of SCL works adjacent to the breakwater. However, these were rejected due to the risks associated with the depth of the piles and excavation, and also the risk of marine collisions.

3.35 Given the abovementioned reasons, temporary reclamation is required to construct the cut-and-cover tunnel inside the CBTS to connect with the IMT. The C&C method for this section would involve constructing a temporary reclamation area to provide a dry working platform and the installation of temporary walls propped by steel struts. The soil between the temporary walls would then be excavated and a reinforced concrete tunnel box would be constructed to form the permanent structure. Backfilling would then be undertaken on top of the tunnel and the temporary reclamation materials would then be removed.

3.36 The extent of temporary reclamation north of the existing breakwater is dictated by the distance required from the breakwater to avoid undermining the breakwater during dredging works for the IMT tunnel. The distance is estimated to be approximately 92m from the centre line of the breakwater.

3.37 The reclamation would be protected by a vertical seawall which will also protect CBTS while the seawall is provided.

Works within CBTS

3.38 Based on feedback from consultation with stakeholders and users of the CBTS and taking into account constraints on the off-site relocation options, the general view is that no additional moorings (i.e. over what CWB has proposed) should be relocated outside the CBTS to facilitate SCL construction. Moreover, a section of the SCL tunnels at CBTS will cross over the CWB tunnels and CWB could be operational during the construction of SCL. In order to minimize the extent and duration of temporary reclamation under the SCL project and hence disturbance to the CBTS and to protect the feasibility of the construction of the SCL in the future while safeguarding the operation of the CWB, about 160 m of the SCL tunnel, at the crossing over CWB tunnels, would be constructed under the CWB project as shown in **Figures Nos. NEX2213/C/331/ENS/50/027** and **NEX2213/C/331/ENS/50/028**. This tunnel protection works to be undertaken under CWB is limited to civil and structural elements and requires moderate modifications to the limits of temporary reclamation.

3.39 Same construction method as utilised in the original CWB tunnel construction works will be adopted for the tunnel protection works. In other words, the envisaged construction method is by temporary reclamation, diaphragm walls, seawalls, and C&C construction. Certain provisions will be built into the end of the tunnel to enable subsequent extension of the tunnels by the Project. A small part of the temporary reclamation will be left in place adjacent to the shoreline to allow the Project to construct the SCL tunnels through the seawall. This temporary reclamation will be removed by the Project after the tunnel section at CBTS is completed.

3.40 It should be noted that the potential environmental impacts associated with the SCL Protection Works at CBTS has been assessed and presented in a standalone EIA under the EIA Study Brief No. ESB-213/2010.

Exhibition Station and Associated Tunnel

3.41 EXH is proposed to be located within a site currently occupied by the Harbour Road Sports Centre and Wan Chai Swimming Pool (IGH/TP). In accordance with the latest design information, the reprovisioning of the IGH/TP will be undertaken in sequence so that existing operations at IGH/TP will continue until the new IGH/TP are provided. The preferred arrangement is to reinstate the IGH/TP to the south east of station footprint. Part of the works area also lies within existing carriageways.

3.42 The station will require excavation down to approximately -25mPD. As such, a stiff and impermeable perimeter wall is required for the station excavation to limit ground movements and groundwater inflow. C&C construction sequences are proposed for the station which is expected to involve a repeated procedure of dewatering, excavation and strut installation until the final excavation level is reached. Temporary king posts will be cut off once the station structures are completed. By adopting this method, the G/F top slab of station where constructed first would act as a temporary shield/barrier to minimise construction noise and dust impacting on the surrounding environment during construction of the basement floors.

3.43 The SCL tunnels will run underneath the POC, the Wan Chai Interchange, the Marsh Road substation and the Wan Chai Sports Ground before connecting to the east of EXH. During construction of EXH, a portion of the grandstand at Wan Chai Sports Ground and other associated foot bridges will be affected. Temporary reprovisioning of the grandstand and other facilities will be required during the construction period and possible full reinstatement subsequent to completion of railway development works.

Admiralty Station and Overrun

3.44 ADM and Hong Kong Park Ventilation Building (HKB) are shared use facilities that will be designed by the SIL(E) project. Civil construction works for ADM and HKB will be undertaken and substantially completed by SIL(E) project whilst the internal fitting-out works and track laying works and installation of atrium void at ADM, and some minor aboveground works including demolition of an existing ventilation shaft near ADM atrium, spoil mucking out works at ADM and HKB and reinstatement works will be done by this Project. The shafts at the HKB will be utilised as the construction shaft for material delivery and building services or superstructure works required further to completion of the overrun tunnel which will be undertaken by this Project.

3.45 The overrun tunnel will be constructed by drill and blast method. Rock crushing activity as part of the tunnelling works would possibly be involved breaking rocks inside the tunnel being constructed. Owing to the works are fully confined in the tunnels with large rock head level and large vertical setback distance to the overlying premises, adverse environmental impact would not be anticipated with the implementation of standard mitigation measures such as dust suppression measures stipulated in the Guidance Note on the Best Practicable Means for Mineral Works (Stone Crushing Works) BPM 11/1(95).

Shafts and Ventilation Buildings

3.46 Shafts to be provided along the alignment will be used for tunnel ventilation during the construction and operation phases. These structures will also provide access for tunnelling equipment, permanent material and spoil removal.

3.47 Shafts will be typically located at permanent ventilation buildings to minimise the potential disturbance and impact to the public and environment. Typically the shaft will be sized for envisaged construction methods that will require sizable openings and clear access space for the delivery and removal of equipment (e.g. TBMs), spoil handling, material delivery and plant maintenance. Based on requirement of the construction methods and access needs, the sizes of these works sites have been minimised as far as practicable.

3.48 Shafts and ventilation buildings/EAPs will be typically constructed by C&C method. Diaphragm wall, sand drains, and struts as the temporary excavation and lateral support system will be involved during the construction of shafts. Casting of diaphragm wall, which is a continuous underground concrete wall, will be conducted before excavation works. This wall would largely limit groundwater entering into the excavation area, and therefore minimise the groundwater drawdown outside works boundary.

Construction Programme

3.49 The SCL was gazetted under the Railways Ordinance on 26 November 2010. Tentatively, SCL works will commence in 2012 with completion in 2020. A preliminary construction programme for SCL (HUH-ADM) is provided in **Appendix 3.4.**

3.50 A summary of the key construction and operation phase elements is presented in **Table 3.2** and **Table 3.3** respectively. The summary presented is based on the available preliminary design information and will be subject to further study at the detailed engineering design stage.

Table 3.2 Construction Phase Elements

Sections	Key Construction Items
Kowloon Side	
NOV to Cross Harbour section	▪ Demolition of Kowloon Freight Building ▪ Construction of NOV ▪ Hung Hom Landfall Construction ▪ Demolition and reprovisioning of part of Freight Pier ▪ Barging activities at Freight Pier ▪ Provisional underwater blasting at south of Hung Hom Landfall
Hong Kong Island Side	
Cross Harbour section up to Breakwater of CBTS	▪ IMT tunnel construction ▪ Provisional underwater blasting at the middle of the IMT tunnel fairway ▪ Temporary reclamation and C&C tunnel for a short section outside the breakwater of CBTS
Breakwater of CBTS to SOV	▪ Temporary reclamation and C&C tunnel at CBTS ▪ Construction of SOV ▪ Construction of TBM launching shaft ▪ Demolition and reprovisioning of POC
SOV to EXH	▪ Construction of underground tunnel by TBM method ▪ Aboveground construction works ▪ Underpinning of vehicular bridges ▪ Diversion/reinstate of footbridges ▪ Diversion/reinstate of box culverts ▪ Barging activities at ex-PCWA ▪ Temporary mooring area at ex-PCWA
EXH	▪ Construction of underground tunnel by C&C method ▪ Construction of underground station by C&C method ▪ Aboveground construction works ▪ Construction of aboveground ventilation shafts ▪ Demolition and reprovisioning of IGH/TP
EXH to open space at the junction of Expo Drive and Convention Avenue	▪ Construction of underground tunnel and TBM launching shaft by C&C method ▪ Aboveground construction works
Open space at the junction of Expo Drive and Convention Avenue to north of ADM	▪ Construction of underground tunnel by TBM Method ▪ Aboveground construction works ▪ Construction of Emergency Access Point (EAP) at Fenwick Street Children's Playground ▪ Demolition and piles removal of part of Fleet Arcade ▪ Reinstatement of Fleet Arcade ▪ Demolition of pump house and piles removal of West Sewage

Sections	Key Construction Items
	Screening Plant ▪ Temporary diversion and piles removal of box culvert
South of ADM to Overrun Tunnel	▪ Construction of overrun tunnel by drill & blast method ▪ Design and construction of the new ADM and HKB by SIL(E), except the following construction activities: - Fitting out works within ADM; - Installation of atrium void at ADM; - Demolition of existing ventilation shaft near ADM atrium; - Construction of overrun tunnel with spoil mucking out works at ADM and HKB; and - Construction of SCL portion of HKB and reinstatement works.
Casting of IMT segments at Shek O Casting Basin	▪ Formation of Casting Basin ▪ Casting IMT units ▪ Operation of Concrete Batching Plant and Barging Point

Table 3.3 Operation Phase Elements

Sections	Key Above-ground Operational Items
Kowloon Side	
HUH (under podium), Hung Hung Freight Pier to Hung Hom Landfall	▪ NOV
Hong Kong Island side	
Cross harbour tunnel section up to Breakwater of CBTS	▪ SOV
Breakwater of CBTS to POC	
POC to Wanchai Sports Ground	
Wanchai Sports Ground to EXH	▪ EXH ventilation shafts and cooling facilities
EXH to Fenwick Pier Street/Performing Arts Avenue (Next to HKAPA)	▪ EAP
Fenwick Pier Street//Performing Arts Avenue (Next to HKAPA) to north of ADM	▪ ADM ventilation shafts and cooling facilities near Harcourt Garden/Citic Tower
South of ADM to Overrun Tunnel	▪ HKB

3.51 No maintenance dredging of marine sediment is envisaged for the immersed tube tunnel or other construction method during the operation phase of the Project.

3.52 It should be noted that the design and construction of the ADM including the HKB and ventilation shafts in Harcourt Garden will be carried out under the SIL(E). Therefore, assessment of the potential environmental impacts associated with construction of these structures are addressed in the SIL(E) EIA report. Based on the current construction programme, there will be no concurrent construction works between this Project and SIL(E). All the landscaping works above ADM or at Harcourt Garden will be completed under SIL(E) project before Year 2014 (tentatively). Nevertheless, cumulative impacts of this Project with SIL(E) for operation phase will be addressed in this Report.

Concurrent Projects

3.53 Concurrent projects in the vicinity of the Project, which would likely interact with this Project include:

- SCL (TAW-HUH);
- SCL (MKK–HUH);

- KTE;
- SIL(E);
- WDII; and
- CWB

3.54 To support the SCL operation, three options for stabling sidings have been developed, including using only the Diamond Hill CDA Site (namely DHS), only the former Hung Hom Freight Yard (namely HHS) or a combination of both sites. Subsequent investigation for the preferred sites concluded that the option of combination of DHS and HHS was found to be not preferred and was not pursued further. In this EIA Report, the stabling sidings in DHS which is presented in the EIA Report of SCL (TAW-HUH) is assumed and hence cumulative environmental impacts associated with the SCL (TAW-HUH) with the DHS option have been assessed. The potential environmental impacts associated with the HHS together with cumulative impacts from other projects have been assessed and presented in another standalone EIA under the EIA Study Brief No. ESB-233/2011. In that standalone EIA for SCL (HHS), the potential cumulative environmental impacts from the Project and HHS, including landscape and visual, construction dust, airborne noise, groundborne noise, water quality, waste management and land contamination, have been assessed/addressed. Adoption of the stabling sidings in DHS or HHS would be subject to the findings of detailed engineering and EIA studies.

3.55 In terms of water quality assessment, the assessment area covers the Victoria Harbour Water Control Zone (WCZ), the Eastern Buffer WCZ and the Western Buffer WCZ and hence concurrent projects within these WCZs are identified. They are:

- Dredging Works for Proposed Cruise Terminal at Kai Tak (CT Dredging);
- Marine construction works for the Kai Tak Development (KTD) Project;
- Installation of Submarine Gas Pipelines from Ma Tau Kok to North Point for Former Kai Tak Airport Development (New Submarine Gas Main);
- Road T2 and Central Kowloon Route (CKR);
- Laying of Western Cross Harbour Water Mains and Associated Land Mains (Western Harbour Main);
- Dredging at Kwai Tsing Container Basin (KTCB) and its Approach Channel;
- Lei Yue Mun Waterfront Enhancement; and
- Container Terminal No. 10 (CT10)

3.56 The potential cumulative environmental impacts of the identified concurrent projects during the construction and operation of the Project are summarised in **Table 3.4** below.

Table 3.4 Summary of Concurrent Projects

Project	Tentative Start	Tentative Finish	Construction Phase Impact	Operation Phase Impact
SCL (TAW – HUH)	2012	2018	• Cumulative dust and air-borne noise impact at Hung Hom area	• Cumulative ground-borne noise impact at Hung Hom area
SCL (MKK – HUH)	2012	2018	• Cumulative dust and air-borne noise impact at Hung Hom area	• Cumulative fixed plant noise impact at Hung Hom area
KTE	2011	2015	• Cumulative dust and air-borne noise impact at Hung Hom Freight Pier	• Not anticipated

Project	Tentative Start	Tentative Finish	Construction Phase Impact	Operation Phase Impact
SIL(E)	2011	2014	• Not anticipated since there is no overlapping in construction period	• Cumulative ground-borne and fixed plant noise impacts at noise sensitive receivers around ADM and HKB
WDII	2010	2016	• Cumulative dust and air-borne noise impact at Wanchai area • Cumulative water quality issue	• Not anticipated
CWB	2009	2017	• Cumulative dust, water quality and air-borne noise impact at Wanchai area	• Not anticipated
CT Dredging	2013	2016	• Cumulative water quality issue	• Not anticipated
Runway Opening under the KTD Project	2014	unknown	• Small-scale dredging at 2km away, cumulative impact not anticipated	• Not anticipated
Disused Fuel Dolphin under the KTD Project	unknown	unknown	• No dredging work, cumulative impact not anticipated	• Not anticipated
Installation of New Submarine Gas Main	2012	2012	• Cumulative water quality impact with the Protection Works at CBTS that has been covered under separate EIA Study (ESB-213/2010)	• Not anticipated
Road T2	2012	2016	• Cumulative water quality issue	• Not anticipated
CKR	2015	2020	• Cumulative water quality issue	• Not anticipated
Laying of Western Harbour Main	2010	2012	• Cumulative water quality impact with the Protection Works at CBTS that has been covered under separate EIA Study (ESB-213/2010)	• Not anticipated
KTCB and its Approach Channel	unknown	unknown	• More than 8km away, cumulative impact not anticipated	• Not anticipated
Lei Yue Mun Waterfront Enhancement	unknown	unknown	• At least 4km away, cumulative impact not anticipated	• Not anticipated
CT10	unknown	unknown	• More than 8km away, cumulative impact not anticipated	• Not anticipated

3.57 It should be noted that consideration of concurrent projects for cumulative environmental impacts will only take into account those with available implementation programmes. Cumulative impacts from the planned and existing major concurrent projects, if any, have been assessed in the individual sections of this EIA study.

Continuous Public Involvement

3.58 After the Executive Council approved the further planning and preliminary design of SCL by the MTR Corporation in March 2008, the Government and the MTR Corporation subsequently visited the District Councils and consulted local communities on the Project. Extensive public consultation, including roving exhibitions and public forums, was conducted to further collect views from the public on the new links. **Table 3.5** summaries the public consultation activities.

Table 3.5 Summary of Public Consultation Activities

Date	Public Consultation Activity
16 June 2009	First Professional Forum
6 July 2009	CBTS Stakeholder Briefing cum Forum
21 July 2009	Presentation to Wan Chai District Council
23 July 2009	Presentation to Eastern District Council
5 August 2009	Seminar for The Hong Kong Institute of Planners (HKIP)
17 August 2009	Presentation to Harbour-front Enhancement Committee (HEC)
18 August 2009	Seminar for The Chartered Institute of Logistics and Transport in Hong Kong (CILTHK)
19 August 2009	Seminar for The Hong Kong Institute of Architects (HKIA)
24 August 2009	Public Forum – The New Territories
29 August 2009	Public Forum – Kowloon
1 September 2009	Public Forum – Hong Kong Island
10 September 2009	Presentation to Yau Tsim Mong District Council
14 September 2009	Presentation to North District Council
29 September 2009	Presentation to Kwun Tong District Council
9 November 2009	CBTS Stakeholder Briefing cum Forum (PMA users)
20 November 2009	Seminar for Hong Kong Construction Association (HKCA)
30 November 2009	Presentation to Southern District Council
4 December 2009	Second Professional Forum
16 April 2010	Presentation to Central and Western District Council
17 June 2010	Presentation to Eastern District Council

Date	Public Consultation Activity
16 July 2010	Presentation to Eastern District Council
26 July 2010	Presentation to Southern District Council
December 2010 to January 2011	Information Paper on SCL to 18 District Councils
18 January 2011	Presentation to Wan Chai District Council
18 and 20 April 2011	Briefing to CBTS Stakeholders on SCL Protection Works

3.59 Detailed public's feedbacks and recommendations on the SCL works in the harbour are presented in the CCM Report that can be viewed at the website: http://www.mtr-shatincentrallink.hk/en/construction/work-in-victoria-harbour.html. **Table 3.6** summaries the key public views on the Cross Harbour Section of the Project.

Table 3.6 Summary of Key Public Views on the Cross Harbour Section of the Project

Concern Groups	Major Public Views Sought
Professional Institutes / Harbour Protection Concern Groups	• In the first Professional Forum and subsequent seminars, most of the participants agreed that there was an overriding public need for SCL. It was recognised that it could not only relieve congestion of existing lines, but also increase mobility especially for those from the New Territories and older urban districts in East Kowloon. • Most of them supported the finding that there was no reasonable "no reclamation" option. • It was generally agreed that the Western Alignment was a better option as it would cause less disruption to the CBTS than the Eastern Alignment, and was a more direct route. • There was a view expressed that the extent of the proposed temporary reclamation in the CBTS should be minimised. As explained in Chapter 6 of the CCM Report, the SCL works have been integrated with the CWB project to optimise the use of temporary reclamation formed under that project for SCL tunnel construction. Other areas of temporary reclamation required for SCL construction have been minimised and presented at the second Professional Forum. • In response to suggestions by the public, including one raised at the HKIA seminar, alternative alignments which avoided passing through the CBTS were investigated as discussed in Chapter 5 of the CCM Report. These options were found to be unacceptable. • There was a view expressed that the SCL and CWB projects teams should work closely together to avoid repeated temporary reclamation and also if possible to reduce the period of construction to minimize disruption to the stakeholders and the public. As described in Chapter 6 of the CCM Report, this close liaison has taken place with the result that it is now intended approximately 160m of the SCL tunnel be constructed under the CWB project subject to the

Concern Groups	Major Public Views Sought
	timely authorisation of the SCL project. • The second Professional Forum was held in December 2009 to report the public consultation activities conducted, to update the design development and to explain how the reclamation would be minimized. The invitees were the same as those for the first Professional Forum, plus the non-official members of the Harbour-front Enhancement Committee. Participants recognized the coordination work undertaken between the SCL and CWB projects and supported the findings on the duration and the extent of temporary reclamation.
Harbour-front Enhancement Committee (HEC)	• Most of the HEC members supported the SCL project. They opined that the option that would be completed in the shortest period of time should be pursued, and coordination with the CWB project should be necessary. They were concerned about the temporary occupation of the harbour-front areas by different railway projects and asked for mitigation measures to be implemented. • Suggestions were offered that the temporary reclamation at CBTS could be further reduced by extending the immersed tube tunnel method into the CBTS or by moving the breakwater outward to provide more sheltered space and allow the SCL construction to be expedited. However, as described in Paragraphs 6.3.15 and 6.3.16 of the CCM Report, the former impacted a similar extent of mooring area in the CBTS and the latter option contravened the requirements of the PHO. These findings were reviewed and supported at the second Professional Forum.
District Councils	• An information paper on the SCL (HUH-ADM) was sent to all 18 District Councils. Presentations were given to Wan Chai, Eastern, Yau Tsim Mong, North, Kwun Tong and Southern District Councils as requested to introduce the scheme. • Most of the District Councillors considered that there is an overriding public need for the SCL. Many District Councils urged for its early implementation. There was no specific view on the findings that there would be no reasonable “no reclamation” option but there was a preference for the Western Alignment. • Eastern District Councillors expressed objection to any SCL works being carried out in the CBTS, unless the agreement from all stakeholders of CBTS was obtained. Follow-up meetings with the key Councillors representing the fishermen were held to further explain the need for SCL to pass through CBTS, and a written reply was subsequently sent to the District Council. As noted above it was concluded in Chapter 5 of the CCM Report that the alignment must pass through the CBTS.

Concern Groups	Major Public Views Sought
	• Follow-up meeting with Eastern District Council was held in July 2010 and the Councillor's view to obtain agreement from all stakeholders of CBTS was maintained. On-going discussion with stakeholders in the CBTS will be carried out.
Stakeholders at CBTS	• A Stakeholder Briefing cum Forum for CBTS users, except those in the Private Mooring Area (PMA), who would be affected by the construction of SCL was held in early July 2009. Another briefing specifically for PMA users in CBTS was organised in early November 2009. • Meetings with individual stakeholders were held from June 2009 onwards in order to better understand their concerns. Their views are summarised in the followings: – RHKYC did not object to the construction of the SCL. They had a number of principal concerns and requirements including: the moorings that they had should remain in CBTS; facilities for their operational and sailing activities should be reprovisioned; the protection level offered by the existing breakwater should not be compromised; and, sufficient depth should be provided at reprovisioned locations for their moorings. These issues have been considered in the development of the proposed construction approach described in Chapter 6 of the CCM Report. – The anchorage users preferred that the SCL be realigned to avoid passing through the CBTS. However, on the understanding that the SCL would pass through the CBTS, their primary concerns were: on the duration of the works; the existing breakwater would be removed exposing their moorings to risk, and, dredging would affect the marine ecology and in turn their catches. The alternative alignment has been reviewed and is not considered viable, as explained in Annex A and Chapters 4 and 5 of the CCM Report. Protection to the vessels in the CBTS has been a major factor considered in developing the SCL scheme. The preferred scheme has ensured that the level of protection will not be undermined during construction of SCL. The impact due to dredging will be addressed in the SCL EIA report and where necessary mitigation measures will be proposed. – The PMA users expressed no particular strong views on the possible postponement of their return to the CBTS for a period of up to 18 months after completion of the CWB but were concerned about whether they would be able to moor in the same location if they were able to return to the CBTS within the 18-month period. Further discussions with the PMA users will be held to address their concerns. – The commercial boat operators did not object to the SCL and the possible postponement of their return to

Concern Groups	Major Public Views Sought
	the CBTS for a period of up to 18 months after completion of CWB works in CBTS. Some requested to reprovision their moorings temporarily within the harbour to accommodate their operational requirements. They were concerned about the lack of sufficient protection during typhoon if the moorings were to be reprovisioned at non-typhoon shelter areas and asked for earlier completion of the works in the CBTS. The approach adopted for the CWB project will continue to be followed for the integrated CWB and SCL works. The approach is that those moorings for commercial boats in PMA would remain in the CBTS during CWB Stages 1 and 2 and would be reprovisioned at the ex-Wan Chai Public Cargo Working Area (PCWA) basin during CWB Stages 3 and 4.
Public Forums	• At the three public forums held from late August to early September, most of the participants showed strong support for the SCL project and many urged for earlier completion of the SCL. The general view was that reclamation should be minimized and close coordination with interfacing projects would be necessary. There was a preference that the duration of construction be minimised through close integration with the CWB project but there was recognition that impacts on existing moorings also be mitigated. These issues have been addressed in this Report, i.e. the extent of reclamation and duration minimized. • Throughout the forums, no disagreement with the findings that there was no reasonable 'no-reclamation' option was raised.

3.60 To conclude, the majority of the public agreed that there is an overriding public need for the SCL and urged for early completion of this infrastructure. They supported the findings that there is no reasonable "zero reclamation" option, and preferred the Western Alignment as it requires a shorter construction period and provides a shorter routing between HUH and EXH. Moreover, many people opined that there should be better coordination with the CWB project to minimize disturbance to the CBTS. Having considered the views of the public, as well as all other engineering and environmental factors, it is proposed that the Project is to be implemented as described above.