

1 Introduction

1.1 Background

The Shatin to Central Link (SCL) is one of the railway projects recommended for implementation in Railway Development Strategy 2000^[1-1]. It is an integral component of the expanded rail network, which will be required to support the economic, social and population growth of the HKSAR in the coming years. In particular, it will support the urban renewal of the existing Kowloon City District, planned Kai Tak Development (KTD) and further developments in North East New Territories (including Ma On Shan) by providing direct and efficient rail service between Shatin and the Central Business District of the Hong Kong Island via KTD^[1-2].

The SCL is also one of the ten large-scale infrastructure projects announced by the Chief Executive in his 2007-2008 Policy Address. According to updated information, SCL is targeted to commence construction by mid 2012. For the purposes of the Environmental Impact Assessment (EIA), five EIA Studies have been conducted to cover different sections of the SCL. They include:

- SCL – Tai Wai to Hung Hom Section [SCL (TAW-HUH)] (hereinafter referred to as “the Project”, being considered in this EIA) – the extension of Ma On Shan Line from Tai Wai Station via Hing Keng, Diamond Hill, Kai Tak, To Kwa Wan, Ma Tau Wai and Ho Man Tin to Hung Hom, and link up with the existing West Rail Line, along with a proposed stabling sidings option in Diamond Hill (DHS)¹;
- SCL – Mong Kok East to Hung Hom Section [SCL (MKK-HUH)] – the realignment work for the existing East Rail Line tracks from the tunnel portal near Oi Man Estate (Portal 1A) to the proposed North Ventilation Building (NOV) in Hung Hom;
- SCL – Hung Hom to Admiralty Section [SCL (HUH-ADM)] – the section from NOV, Plant Rooms and Emergency Access in Hung Hom across the harbour to the Causeway Bay Typhoon Shelter (CBTS), Exhibition Station (EXH) and then to ADM;
- SCL Protection works at Causeway Bay Typhoon Shelter – the section of approximately 160m long of the SCL tunnel protection works at the crossing over Central-Wan Chai Bypass (CWB) tunnels, which would be constructed under the CWB project; and
- SCL – Stabling Sidings at Hung Hom Freight Yard [SCL (HHS)] – another stabling sidings option for SCL (TAW – HUH) proposed at the former freight yard in Hung Hom¹.

1.2 The Project

This Project covers the Tai Wai to Hung Hom section only. The proposed tentative alignment of SCL (TAW-HUH) is shown in **Figure 1.1** and the tentative locations of off-site works areas (e.g. office, general storage), off-site works sites (e.g. barging facilities, magazine sites etc) are shown in **Figure 1.2**. According to the latest programme, the construction works for SCL (TAW-HUH) would commence in 2012. All major civil contracts would be completed by 2016. The remaining station fit-out, track layout etc works would be completed by 2018. More detailed description of the proposed Project is given in **Sections 2 and 3**.

Ove Arup & Partners Hong Kong Ltd (Arup) was commissioned by MTR Corporation Limited (MTR Corporation) as the EIA Consultant for the SCL (TAW-HUH). The SCL (MKK-HUH), SCL (HUH-ADM), Protection Works at Causeway Bay Typhoon Shelter and SCL (HHS) are separate Designated Projects and their EIA Studies would be conducted separately.

¹ The ultimate suitability of using either the DHS or HHS or a combination of both sites for train stabling would be subject to the findings of detailed engineering and EIA studies.

1.3 Designated Projects

The Project is a single project comprising the following elements which are considered as designated projects as per Schedule 2, Part I, Categories A2, A4, A7, A8 and K10 of the Environmental Impact Assessment Ordinance (EIAO):

- A.2: A railway and its associated stations.
- A.4: A railway siding, depot, maintenance workshop, marshalling yard or goods yard.
- A.7: A road or railway tunnel more than 800 m in length between portals.
- A.8: A road or railway bridge more than 100 m in length between abutments.
- K.10: An explosive depot or explosives manufacturing plant in a stand-alone, purpose built building.

A stabling sidings would be constructed at Diamond Hill under the Project. It is a Designated Project under Item A.4. of Schedule 2 of EIAO.

The explosive storage magazine described in this EIA will be constructed under the Kwun Tong Line Extension (EIA 184/2010) and would be share used between Kwun Tong Line Extension and the Project. An explosives depot in a stand-alone, purpose built building is a designated project (under Item K.10, Part 1 of Schedule 2 of the EIAO) (Referred to in this report as an explosives storage magazine). The future decommissioning of the explosives magazine is a designated project (under Item 11, Part II – Decommissioning Projects of Schedule 2 of the EIAO). As the date of the decommissioning is uncertain at this stage, it is not considered under this EIA Study. However, an Environmental Permit will be required prior to commencement of decommissioning work.

The locations of the above Designated Projects under SCL (TAW-HUH) are shown in **Figure 1.2.1**.

Dredging would be required for the operation of the proposed barging point at Kai Tak. Based on the estimation in the “Sediment Quality Report of the Shatin to Central Link (Barging Facility at Kai Tak Runway)”, the dredging volume would be about 56,000m³ which is less than 500,000m³. In addition, there are no SSSI, site of cultural heritage, bathing beach, marine park or marine reserve, fish culture zone, wild animal protection area, coastal protection area and conservation area identified within 500m of the proposed dredging area. Besides, there is no seawater intake point within 100m from the dredging operation. Hence, the dredging operation proposed under this project is not a Designated Project under Item C.12 of Schedule 2 of EIAO.

1.4 EIA Study Brief

An application (No. ESB-191/2008) for an Environmental Impact Assessment (EIA) Study Brief under Section 5(1)(a) of the EIAO was submitted by the MTR Corporation i.e. Project Proponent on 18 June 2008 with a project profile (No. PP-356/2008) (the Project Profile). Pursuant to Section 5(7)(a) of the EIAO, the Director of Environmental Protection issued an EIA Study Brief (ref: EIA Study Brief No: ESB- 191/2008 dated 14 July 2008) to provide the scope and requirements of the EIA study for SCL (TAW-HUH).

It should be noted that the EIA Study Brief has included a total of 7 stations, including Hin Keng Station (HIK), Diamond Hill Station (DIH), Kai Tak Station (KAT), To Kwa Wan Station (TKW), Ma Tau Wai Station (MTW), Ho Man Tin Station (HOM) and Hung Hom Station (HUH), along with a proposed stabling sidings in Diamond Hill (DHS).

During the design process after the issuance of EIA Study Brief, however, engineering and programme considerations have supported the construction and operation of HOM to be implemented, under the Kwun Tong Line Extension (KTE). Similarly, HUH would also be

implemented under SCL (MKK-HUH). Whilst HOM and HUH will be assessed under separate EIAs, the impacts due to the construction and operation of these 2 stations have also been considered in this EIA to fulfil the requirement in the EIA Study Brief.

1.5 Need for the Project

The entire SCL is to form a strategic rail corridor from Shatin to Central which will bring about various benefits to the community, including:

- Redistribution of railway passenger flows to relieve the existing railway lines in urban Kowloon and on Hong Kong Island;
- Providing public transport service for Kai Tak Development;
- Relieving road-based public transport in the existing developed areas, and alleviation of the traffic congestion and environmental nuisance on existing road networks, including the demand on the Hung Hom Cross Harbour Tunnel; and
- Stimulation of the redevelopment of To Kwa Wan and Kowloon City areas.

1.6 Scenario “with” and “without” Project

SCL (TAW-HUH) is an extension of the Ma On Shan Line (MOL) from Tai Wai Station to HUH for connection to the West Rail Line (WRL) so as to allow commuters to travel conveniently from Ma On Shan to Tuen Mun.

It will create an efficient transportation link between MOL and WRL, and will provide access for the public to an environmentally friendly transport system for travel connection between MOL and WRL. It offers an alternative route for passengers originated from the West New Territories and will greatly enhance the public transport infrastructure network of Diamond Hill, Kai Tak, To Kwa Wan, Ma Tau Wai, Ho Man Tin and Kowloon City districts. Population from these districts and their adjacent areas will be directly benefited.

Inevitably, environmental impacts will be induced on the existing environment along the alignment from some of the construction activities. Environmentally friendly construction methods and appropriate mitigation measures will be implemented to ensure all the impacts are minimized (see **Sections 4 –16** for details).

When SCL (TAW-HUH) is completed, permanent changes to the environment and controlled acceptable impacts may be experienced by individuals. However, in the absence of SCL (TAW-HUH), passengers travelling between Tai Wai to Hung Hom will mainly rely on road-based transport, which will increase road traffic and contribute to additional noise and air pollution affecting the local districts. In addition, SCL (TAW-HUH) would relieve the road traffic demand on the Hung Hom Cross Harbour Tunnel which is currently with heavily traffic load. This would also help improving the local air quality nuisance.

1.7 Concurrent Projects

According to the latest programme, the construction works for SCL (TAW-HUH) would commence in 2012. All major civil contracts would be completed by 2016. The remaining station fit-out, track layout etc works would be completed by 2018. The possible potential concurrent projects in the vicinity of the SCL (TAW-HUH) are identified as follows. **Figure 1.3** shows the location and alignment of these concurrent projects.

1.7.1 Shatin to Central Link – Mong Kok East to Hung Hom Section, Hung Hom to Admiralty Section and Protection Works at Causeway Bay Typhoon Shelter

As discussed in **Section 1.3**, there are three sections in SCL, i.e., SCL (MKK-HUH), SCL (HUH-ADM) and Protection Works at Causeway Bay Typhoon Shelter which will run concurrently with this Project.

The SCL (MKK-HUH) includes the realignment and modification of the railway section from Mong Kok East to Hung Hom and station modification works at HUH with new underground platforms. According to updated information, the project is anticipated to commence in mid 2012 and the overall Project completion in 2018. It will therefore be constructed concurrently with the proposed Project. Cumulative construction noise, dust, landscape and visual impacts are therefore anticipated. Since the SCL (MKK-HUH) in the vicinity of the Project would be in tunnels, cumulative impacts during operational phase are not anticipated. Permanent above-ground structures, however, will pose cumulative landscape and visual impacts on some receivers during operational phase. The associated landscape and visual impacts were assessed and the mitigation measures have been proposed to reduce the impacts.

The SCL (HUH-ADM) comprises an approximately 6 km extension of the East Rail Line including a rail harbour crossing from Hung Hom to Admiralty on Hong Kong Island. The project will also include the construction of a new station near the Hong Kong Convention and Exhibition Centre (HKCEC) i.e. the Exhibition Station. Demolition of the existing Kowloon Freight Building at the south of HUH is also required to facilitate the construction of the proposed North Ventilation Building and the associated railway tunnel section. According to updated information, the SCL (HUH-ADM) is anticipated to commence in 2012 for completion in 2020 and involves marine works such as dredging. However, all the dredging works for SCL (TAW-HUH) (i.e. the minor dredging works for Kai Tak Runway Barging Facility as described in **Section 3.4.5**) would have been completed in 2012. It is therefore considered that there would be no cumulative water quality impacts from the marine works of SCL (HUH-ADM). Cumulative visual impacts are however expected from land-based work sites of SCL (HUH-ADM) during construction phase. The impacts will be assessed in the report and the associated mitigation measures addressed.

Protection Works at Causeway Bay Typhoon Shelter (CBTS) involves the construction of a section of the twin track railway tunnel box (the SCL Protection Works) by cut-and-cover method at the crossing above the CWB tunnels. The length of the SCL Protection Works is approximately 160m long and it is located entirely offshore within the CBTS. Upon implementation of the SCL (HUH-ADM) in the future, the south end of the Protection Works will be extended from the temporary reclamation to connect with the South Ventilation Building at the existing Police Officers' Club and the north end of the Protection Works will be continued in cut and cover construction to connect to an Immersed Tube Tunnel beneath the harbour. Although the construction of the CBTS is anticipated to commence in 2012 and complete by 2013, separation distance between CBTS and SCL (TAW-HUH) is over 500m and thus cumulative construction and operational impacts are not expected. (Ref: http://www.epd.gov.hk/eia/register/report/eiareport/eia_1872010/EIA/html/TOC-Text.htm)

To support the SCL operation, there is another option of providing stabling sidings in the former Hung Hom Freight Yard (HHS) which is assessed under a separate EIA Report (SCL (HHS) EIA Report). Adoption of either DHS, HHS or a combination of both sites for train stabling would be subject to the findings of detailed engineering and EIA studies. For this Project, it is proposed to construct the stabling sidings option at Diamond Hill (DHS), therefore, the construction of HHS is not considered as a concurrent project in this EIA study.

1.7.2 Central Kowloon Route

The Central Kowloon Route (CKR) is a dual-3 lane trunk road across central Kowloon linking the West Kowloon in the west and the proposed Kai Tak Development (KTD) in the east. The Project will connect the West Kowloon Highway at Yau Ma Tei Interchange with the road network at Kowloon Bay and the future Trunk Road T2 at KTD which will connect to the future Tseung Kwan O – Lam Tin Tunnel (TKO-LTT). CKR, Trunk Road T2 and TKO-LTT will form a strategic highway link, connecting West Kowloon, East Kowloon and Tseung Kwan O.

The construction of CKR bored tunnel between Shanghai Street and To Kwa Wan Road will have an interface with SCL tunnel between MTW and TKW at Ma Tau Wai Road where the CKR bored tunnel will run underneath the SCL tunnel with adequate separation. It is anticipated that the section of SCL tunnel will be constructed prior to the section of CKR bored tunnel underneath.

The CKR also includes the construction of underwater tunnel between underwater Kowloon City Ferry Pier and Kai Tak Runway (adopt cut-&-cover method involving temporary reclamation), cut and cover tunnel, depressed and elevated roads between Kai Tak Runway and the Interchange with Kai Cheung Road, Kai Fuk Road and Trunk Road T2 on the proposed KTD. The project also includes construction of ventilation buildings and an administration building south to the Kai Tak Tunnel portal.

According to the latest information, CKR would commence construction by 2015 for completion by 2020. Since the major civil construction of SCL (TAW-HUH) would be completed by 2016, the construction work for SCL and CKR would overlap during 2015. However, the peak for civil construction for SCL would be at 2014 and hence the impacts due to SCL would have been reduced. The cumulative impacts on dust, construction noise and water quality would be addressed separately.

1.7.3 Widening of Gascoigne Road

This project aims at widening the existing Gascoigne Road Flyover, which is mainly a single 2-lane 2-way carriageway of about 1.2km, to increase its capacity. According to updated information, the Widening of Gascoigne Road Flyover is scheduled to commence after 2018 and hence this project would not be concurrent with the construction of SCL (TAW-HUH).

1.7.4 Kai Tak Development

According to the approved EIA Report of Kai Tak Development (KTD) (ref: AEIAR-130/2009)^[1-3], the project is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. The Project also covers Kowloon Bay and Kwun Tong Typhoon Shelter and the adjacent water bodies. The project has commenced in early 2009 and is anticipated to complete beyond 2020.

The size of the Project is approximately 328 ha and the latest development plan is shown in the Recommended Outline Development Plan (RODP) dated December 2009. Under this plan, a series of sub-districts are proposed to be created within KTD. They include a commercial belt and Station Square planned at North Apron and North Apron East which would be around the future KAT of the SCL (TAW-HUH).

According to the LegCo Papers on Kai Tak Development (LC Paper No CB(1)1919/09-10(05)^[1-3], CB(1)396/09-10(05)^[1-4] and CB(1)570/08-09(03)^[1-5], the KTD projects are grouped into three packages for completion by three target years, 2013, 2016 and 2021. Development packages of KTD are described in **Table 1.1** and illustrated in **Appendix 1.1**.

Table 1.1: Development Packages of Kai Tak Development

Development	Package A	Package B	Package C
Development at North Apron	<ul style="list-style-type: none"> • Public housing developments • Primary schools and secondary school • Kai Tak Government offices 	<ul style="list-style-type: none"> • Sites for commercial/residential development. • Underground streets • Kai Tak River • Station Square and Avenue Park 	<ul style="list-style-type: none"> • Multiple-Purpose Stadium Complex • Sites for commercial / residential development • Sung Wong Toi Park
Developments at Runway	<ul style="list-style-type: none"> • Cruise Terminal (first berth); • Runway park 	<ul style="list-style-type: none"> • Cruise terminal building (including second berth) • Tourism Node 	<ul style="list-style-type: none"> • Metro park • Sites for residential/commercial developments

Development	Package A	Package B	Package C
		<ul style="list-style-type: none"> • Heliport • Bio-remediation of Kai Tak Approach Channel and the Kwun Tong Typhoon Shelter 	
Development at South Apron			<ul style="list-style-type: none"> • Sites for commercial developments
Kwun Tong Public Cargo Working Area	<ul style="list-style-type: none"> • Waterfront promenade 		
Supporting infrastructure	<ul style="list-style-type: none"> • District cooling system (first phase); • Roadworks, pedestrian links, water supply, drainage and sewerage systems. 	<ul style="list-style-type: none"> • District cooling system (second phase) • Roadworks, pedestrian links, water supply, drainage and sewerage systems. 	<ul style="list-style-type: none"> • District cooling system (final phase) • Roadworks, water supply, drainage and sewerage systems.
Target completion	2013	2016	2021

The approved KTD EIA Report (ref: AEIAR-130/2009) ^[1-6] identified that construction of electricity substation, footbridge and subway enhancement, superstructure construction and concreting works are not major dusty construction activities. In addition, these facilities are located at more than 300m from the receivers of SCL (TAW-HUH). It is therefore anticipated that it would not have significant contribution on the cumulative construction noise and dust impacts on the receivers affected by SCL (TAW-HUH).

In the North Apron area, the Sung Wong Toi Park and the residential/ commercial development in Areas 2 will not be constructed before 2017. The Lung Tsun Stone Bridge remains are located underground and no residential or commercial development will be developed above the archaeological site. Cumulative impact is not anticipated for these developments during the construction phase of SCL (TAW-HUH).

The construction of some of these facilities under KTD may overlap with the construction of TKW and KAT and associated tunnels of SCL (TAW-HUH), as described below.

Housing Authority Development Sites 1A & 1B

There are 2 housing sites (i.e. Sites 1A & 1B) within KTD that are within 300m from the SCL project. According to the implementation programme in KTD, the first population intake would be around 2013. Hence, its construction could possibly overlap with that of SCL (TAW-HUH) during 2012. By 2013, these 2 housing sites would become environmental sensitive receivers (noise, air and visual) that need to be considered in the construction and operational phases of SCL (TAW-HUH) EIA.

Multi-Purpose Stadium Complex

Part of the Multi-Purpose Stadium Complex would be used as the temporary works area for SCL (TAW-HUH). According to the implementation programme in KTD, the construction of the Multi-Purpose Stadium Complex would tentatively commence in 2013, and completed by 2018. Cumulative construction phase noise and air quality impacts are therefore anticipated.

Kai Tak River

The existing Kai Tak nullah at the north apron will be transform into a river channel as a key landscape feature of Kai Tak. The river channel will form a major green corridor in shaping the public space in the city centre. According to the implementation programme in KTD,

construction of the Kai Tak River would commence by about 2011 and completed by 2015. This project contains works elements of modification of Kai Tak Nullah; construction of 2 numbers of desilting compounds; and establishment of landscape softwork on Kai Tak Nullah. Cumulative noise, dust and visual impacts on sensitive receivers of SCL (TAW-HUH) are anticipated.

District Cooling System

A district Cooling System (DCS) will be implemented within KTD. The DCS will constitute a seawater pumping station to be completed by 2013 and a series of pipelines to be completed in phases between 2013 and 2021. The seawater pumping station would also be constructed underground and is located approximately at the middle of the western coastline of the runway and there are no existing noise sensitive receivers within 300m and no existing air sensitive receivers within 500m. It is therefore considered that the construction of the seawater pumping station would not have significant contribution on the cumulative construction noise and dust impacts on the receivers affected by SCL (TAW-HUH).

The seawater pipework would also be implemented within KTD and be connected to the pumping stations. Most of these pipework would be buried under ground and would be constructed in sections. In addition, most of these work sites would be far away from most of the receivers in SCL (TAW-HUH). The construction noise and fugitive dust impacts from the construction of the pipework system would therefore have insignificant cumulative impacts.

The construction of both the pumping stations and the pipework would not require any dredging and hence there is no cumulative impact on construction water quality impacts.

Cumulative impact from district cooling system during operational phase is not expected.

Trunk Road T2

According to the EIA Study Brief for Trunk Road T2 (ref ESB-203/2009), it would connect the eastern connection of CKR to TKO - LTT. The Trunk Road T2 is a dual two-lane trunk road of approximately 3.6km long and about 2.6 km of the trunk road in the form of a tunnel. The alignment for Trunk Road T2 is more than 300m and 500m from the noise and air sensitive receivers respectively for SCL. It is therefore anticipated that it would not have significant contribution on the cumulative construction noise and dust impacts on the receivers affected by SCL (TAW-HUH).

Cumulative impact from Trunk Road T2 during operational phase is not expected.

Cruise Terminal

The site formation for Kai Tak Cruise Terminal will be implemented by Civil Engineering and Development Department. The scope of works comprises the construction of a sloping seawall of about 1,100m and a 35m wide and 850m long apron area for berthing of cruise vessels of different sizes and capacities, as well as the dredging of about 1.38 million cubic meters of marine sediments to allow manoeuvring and berthing of mega cruise vessels. The first berth is expected to commence operation in mid-2013.

According to the approved EIA Report for the Dredging Works for Proposed Cruise Terminal at Kai Tak (ref: AEIAR-115/2007) ^[1-7], there are 2 stages of dredging. The first stage of dredging would involve a total dredging volume of about 1,022,300m³. The second stage of dredging involving a lesser amount of about 680,000m³. Further liaison has been made with CEDD and the website of Tourism Commission has been reviewed. According to information available, the dredging works for the cruise terminal has commenced in 2010 and is anticipated to complete in 2015. Maintenance dredging will be carried out regularly during the construction period.

According to the latest design for SCL (TAW-HUH), some dredging is required for the Kai Tak Runway Barging Facility which is anticipated to commence in mid 2012 (see **Section 3** for more details). The first stage of dredging for the Cruise Terminal may therefore overlap with the dredging work for the barging facility for Kai Tak. Cumulative construction phase water quality impacts are therefore anticipated.

All the dredging work for Kai Tak Runway Barging Facility would however have been completed well before the second stage dredging for the Cruise Terminal and hence cumulative construction phase water quality impacts are not anticipated.

Since the Cruise Terminal is located more than 300m and 500m from the noise and air sensitive receivers respectively for SCL (TAW-HUH), cumulative noise and air quality impacts are not anticipated.

Cumulative impact from Cruise Terminal during operational phase is not expected.

Other Infrastructure (such as Sewage Pumping Station and Roads)

Some of the infrastructures such as sewage pumping stations and roads would also be implemented concurrently with SCL (TAW-HUH). The cumulative noise, dust and visual impacts during the construction phase would need to be addressed. Cumulative visual impacts would also be anticipated during the operational phase.

Commercial Facilities Development Above KAT

SCL (TAW-HUH) is located inside the Station Square within the Kai Tak Development. In accordance with the approved Outline Zoning Plan No S/K22/2 (OZP), an area of around 7,700m² above KAT is zoned "Other Specified Uses" annotated "Railway Station with Commercial Facilities" with a height limit of +15mPD.

For the development of Commercial Facilities Development on top of KAT by others, there is no solid implementation programme yet. However, as KAT will be designed to support the loading of the development and the construction of this low-rise development would commence after KAT is completed. As a result, no major cumulative impact is anticipated. The commercial facilities development will be considered as visual sensitive receivers during operational phase.

1.7.5 Kwun Tong Line Extension & Associated EPIW

The project is an approximately 2.6km extension of the existing Kwun Tong Line from Yau Ma Tei Station to a new railway station at Whampoa and an interchange with SCL (TAW-HUH) at the proposed HOM. The construction works of KTE has commenced in mid-2011 and is scheduled for completion in 2015 according to the approved EIA Report (ref: AEIAR-154/2010) ^[1-8].

The KTE includes the construction of the running line from Yau Ma Tei Station through to HOM and HOM to Whampoa Station and the proposed HOM and Whampoa Station and their associated structures. The construction of HOM would interface and be concurrent with the construction of SCL (TAW-HUH). According to the approved EIA Report (ref: AEIAR-154/2010) ^[1-8], HOM will interface with the construction of the 3 EPIWs during construction phase which have been assessed as concurrent projects (for potential cumulative impacts) in the approved KTE EIA report. The 3 EPIWs for KTE are summarised below:

Oi Man Estate and Ho Man Tin Estate Connections

Oi Man Estate and Ho Man Tin Estate are situated to the west and north side respectively of the proposed HOM. In order to provide and enhance better pedestrian connectivity from the station to these estates and during the public consultation process undertaken by MTR, the connectivity to the new station would be improved. These EPIW, Oi Man Estate and Ho Man Tin Estate Connections, are a network of subways/covered walkways/covered footbridges are proposed to provide a direct, safe and barrier free pedestrian connection.

The construction of these connections and their associated slope stabilisation works would interface with that for HOM.

Public Transport Facilities

The public transport facilities including 3 lay-bys and 1 general pick-up/drop off facilities along Chung Hau Street at the northwest of HOM. The construction of these facilities would interface with that for HOM.

Chatham Road North Covered Footbridge

A new Chatham Road Footbridge is proposed to direct pedestrians from Wuhu Street to the HOM. The bridge deck of the existing Chatham Road Footbridge will be demolished while the current lift shafts will remain as the vertical circulation route between the footbridge level and street level. A new escalator landing will be constructed to the south end of the footbridge at the Wuhu Street Temporary Playground; the north end of the footbridge will be connected to the covered walkway.

The new bridge is designed in 3 spans with the longest span up to 53m spanning across Chatham Road North. Provision for landscape planting will be allowed on both sides of the footbridge. Pier supports are located on the island on the side of the dual carriageway. Pre-bored H piles foundation will be adopted as the foundation of the new footbridge.

The demolished and construction of this footbridge would interface with that for HOM.

The construction of HOM and associated EPIW would interface and be concurrent with the construction of SCL (TAW-HUH). Cumulative noise, dust, landscape and visual impacts during the construction phase would need to be addressed. During the operational phase, cumulative groundborne noise, landscape and visual impacts would also be anticipated.

The KTE is not geographically aligned with the SCL (TAW-HUH) placement (alignment, worksites, magazine site or transport routes) or not chronologically aligned with the blasting programme. The tentative blasting programmes for SCL (TAW-HUH) and KTE are October 2013 to March 2015 and November 2011 to December 2012 respectively and thus cumulative risk impact is not anticipated.

1.7.6 HKPU Student Hostel (Phase 3) Development at Ex-Valley Road Site

The Hong Kong Polytechnic University (HKPU) Student Hostel (Phase 3) Development is located at the junction of Fat Kwong Street and Chatham Road North. The construction work was commenced in 2009 and is targeted for completion by 2012. It would therefore be concurrent with the construction of SCL (TAW-HUH).

However, the SCL (TAW-HUH) would only involve underground tunnelling work. The construction noise impacts on this student hostel development would therefore be dominated by the construction of the Kwun Tong Line Extension (see **Section 1.5.5**). Cumulative construction noise impacts are therefore not anticipated. The cumulative dust and visual impacts from the construction of this student hostel development should however be considered.

The HKPU Student Hostel (Phase 3) Development will be considered as a sensitive receiver on dust impact during construction phase, on groundborne noise and visual impact during construction and operational phase.

1.7.7 Ex-San Po Kong Flatted Factory

According to the approved Tsz Wan Shan, Diamond Hill & San Po Kong Outline Zoning Plan (ref S/K11/25), the ex-San Po Kong Flatted Factory has been rezoned from "Industrial" to "Residential (Group E)" for public housing. The design would adopt a single-aspect design facing Prince Edward Road East and would target for the completion year of 2016-2017.

Since the majority of the site formation work has been completed, the demolition work and the superstructure work would only generate insignificant construction noise, fugitive dust and visual impacts for the noise, air and visual sensitive receivers of SCL (TAW-HUH).

The public housing development at ex-San Po Kong Flatted Factory will be considered as a sensitive receiver on dust impact during construction phase, groundborne noise and visual during operational phase.

1.7.8 Tsz Wan Shan Pedestrian Link

The Project Proponent will also design and construct, as Government entrusted works, the Tsz Wan Shan Pedestrian Link which will connect to the KTL Diamond Hill Station. This walkway system would implement a number of covered walkways, pedestrian footbridges, lifts etc to provide a convenient connection system for the neighbouring community.

The construction of this walkway system would generally be concurrent with the construction of the Diamond Hill Station. The associated construction noise, dust and visual impacts from this walkway system would need to be taken into account in the cumulative assessment. Cumulative visual impact from Tsz Wan Shan pedestrian link during operational phase has been addressed.

1.7.9 Covered Walkway at Kai Tak

A covered walkway which connected to TKW would be proposed. The walkway system is not part of the SCL (TAW-HUH) project and would provide convenient connection system for the neighbouring community. However, there is no status for its implementation and hence its cumulative impacts would not be considered in this EIA.

1.7.10 Comprehensive Development Area (CDA) at Diamond Hill

This CDA site is bounded by Lung Cheung Road and Choi Hung Road to the south of KTL-DIH. In accordance with the approved Tsz Wan Shan, Diamond Hill & San Po Kong Outline Zoning Plan No S/K11/25, the site will be used for residential and/or commercial uses with the provision of open space and other supporting facilities.

The CDA site comprises the area occupied by the former Tai Hom Village and will not be constructed before completion of infrastructure works for DHS and the new DIH. It is therefore anticipated that CDA site would not have any contribution to cumulative construction impacts. The CDA site will be considered as sensitive receivers on noise and visual during operational phase.

1.7.11 Submarine Gas Pipelines

An EIA Study has been conducted for the "Installation of Submarine Gas Pipelines and Associated Facilities from Ma Tau Kok to North Point for Former Kai Tak Airport Development" (ref: AEIAR-153/2010)^[1-9].

It would include twin submarine gas pipelines across the harbour, 2 land gas pipelines at To Kwa Wan and North Point, and 2 gas stations for pigging operation. According to the approved Submarine Gas Pipeline EIA Report (ref: AEIAR-153/2010)^[1-9], the construction programme would commence in January 2012 for completion by June 2014. Some dredging is required for the period from April to December 2012. It would overlap with dredging required for the proposed SCL (TAW-HUH) and cumulative construction impact is expected (see **Section 10** for further discussion on water quality).

Cumulative operational impacts from submarine gas pipelines are not expected.

1.7.12 In-situ Re-provisioning of Sha Tin Water Treatment Works – South Works – Designs and Construction

The Shatin Water Treatment Works (STWTW) was first commissioned since 1964 with an initial rated capacity of 364,000 m³ per day at the existing South Works. Owing to the aging of plant and equipment which are approaching the end of their service life, renovation or

replacement of existing facilities would be required to meet the anticipated future water demands. The construction work is tentatively scheduled to commence in mid 2012 for completion in 2016. According to its EIA Study Brief (ESB-220/2011), major works would involve demolition of the existing facilities of the South Works in phases, reprovisioning of the South Works to the proposed output of 550,000 m³ per day, cut-back of the existing man-made slope, and construction of superstructures. This therefore considered as a concurrent project.

Based on the preliminary information available from the EIA Project Profile (PP-430/2011) of this project, the potential dust impact is considered to be insignificant with implementation of good site practice and dust suppression measures in view of the phasing of the works area and small works area. Insurmountable cumulative dust impact is therefore not anticipated.

Similarly, although the construction methodology etc. are yet to be estimated and confirmed, its Project Profile has stated that the construction noise generated by PME could be mitigated by adopting necessary and practicable mitigation measures. During its own EIA, relevant concurrent projects would be considered at that time to fulfill the requirement of TM-EIAO.

1.7.13 Proposed 132kV Cable Circuits Connecting with Ho Man Tin KCRC Substation and Tsim Sha Tsui Substation (Hung Hom Side)

The proposed cable connects Ho Man Tin KCRC Substation and Tsim Sha Tsui Substation. Initially, it runs underneath the Chatham Road North Interchange and then along the Chatham Road North, Winslow Street and Cheong Tung Road and eventually to the Hung Hom Bay Substation.

The proposed cable duct along the existing footpaths and carriageways will be constructed mainly by open trenching method except for the proposed no-dig cable duct crossing underneath Chatham Road North Interchange. The section potentially causing minor and limited disturbance to the environment will be constructed by trenchless method and no potential environmental impact will be anticipated. For other sections, to minimize any disturbance to the surrounding environment, the construction works will be conducted in phases. The construction works will only involve minor and limited excavation works, and no adverse environmental impact will be expected. Therefore, it is anticipated that there will be no cumulative impact with the Project.

1.7.14 Summary of Concurrent Projects

The potential impacts of concurrent projects during the construction and operation of the proposed SCL (TAW-HUH) are summarised in **Table 1.2** and **Figure 1.3**.

Table 1.2: Summary of Potential Concurrent Projects

Project (Construction Methodology ^[2])	Potential Cumulative Impacts	
	Construction Phase ^[1]	Operational Phase ^[1]
SCL (MKK-HUH) (cut-&-cover tunnel)	<ul style="list-style-type: none"> • Fugitive dust • Airborne noise • Groundborne noise impact (for receivers near HUH) • Landscape and visual 	<ul style="list-style-type: none"> • Airborne Noise • Groundborne noise impact (for receivers near HUH) • Landscape and visual
SCL (HUH-ADM) (Dredging for marine tunnel would not be concurrent with the Project)	<ul style="list-style-type: none"> • Fugitive dust • Airborne Noise • Ecology • Landscape and Visual 	<ul style="list-style-type: none"> • Airborne Noise • Landscape and Visual

Project (Construction Methodology ^[2])	Potential Cumulative Impacts	
	Construction Phase ^[1]	Operational Phase ^[1]
Protection Works at Causeway Bay Typhoon Shelter	<ul style="list-style-type: none"> • Nil 	<ul style="list-style-type: none"> • Nil
Central Kowloon Route	<ul style="list-style-type: none"> • Fugitive dust • Noise • Visual • Water quality 	<ul style="list-style-type: none"> • Visual
Widening of Gascoigne Road	<ul style="list-style-type: none"> • Not concurrent 	<ul style="list-style-type: none"> • Nil
Kai Tak Development (Package A, B and C)	<ul style="list-style-type: none"> • Fugitive dust • Airborne noise • Visual 	<ul style="list-style-type: none"> • Visual
Housing Authority Development Sites 1A & 1B within Kai Tak Development (superstructure construction)	<ul style="list-style-type: none"> • Fugitive dust • Visual 	<ul style="list-style-type: none"> • Visual
Kai Tak River (nullah modification and landscape works)	<ul style="list-style-type: none"> • Fugitive dust • Airborne noise • Visual 	<ul style="list-style-type: none"> • Visual
Multi-Purpose Stadium Complex within Kai Tak Development (construction method to be established by respective proponent)	<ul style="list-style-type: none"> • Fugitive dust • Airborne noise 	<ul style="list-style-type: none"> • Nil
District Cooling System within Kai Tak Development (no dredging required, pumping station is underground and away from noise and air receivers for the Project, only minor construction works required for the pipework).	<ul style="list-style-type: none"> • Nil 	<ul style="list-style-type: none"> • Nil
Trunk Road T2 within Kai Tak Development (at-grade and tunnelling work, but far away from noise and air receivers for the Project)	<ul style="list-style-type: none"> • Nil 	<ul style="list-style-type: none"> • Nil
Cruise Terminal within Kai Tak Development (concurrent dredging with that for the project, but far away from noise and air receivers for the Project)	<ul style="list-style-type: none"> • Water quality 	<ul style="list-style-type: none"> • Nil
Other Infrastructure within Kai Tak Development	<ul style="list-style-type: none"> • Fugitive dust • Airborne noise • Visual 	<ul style="list-style-type: none"> • Visual
Commercial Facilities Development Above Kai Tak Station	<ul style="list-style-type: none"> • Not concurrent 	<ul style="list-style-type: none"> • Visual
Kwun Tong Line Extension & Associated EPIW (cut-&-cover station and tunnel)	<ul style="list-style-type: none"> • Fugitive dust • Airborne noise • Landscape and visual 	<ul style="list-style-type: none"> • Groundborne noise • Landscape and visual
HKPU Student Hostel (Phase 3) Development at Ex-Valley Road Site (typical superstructure construction)	<ul style="list-style-type: none"> • Fugitive dust • Visual 	<ul style="list-style-type: none"> • Groundborne noise • Visual

Project (Construction Methodology ^[2])	Potential Cumulative Impacts	
	Construction Phase ^[1]	Operational Phase ^[1]
Ex-San Po Kong Flatted factory (typical superstructure construction)	<ul style="list-style-type: none"> Fugitive Dust Visual 	<ul style="list-style-type: none"> Groundborne noise Visual
Tsz Wan Shan Pedestrian Link (typical at-grade works for lift and walkway systems)	<ul style="list-style-type: none"> Fugitive dust Airborne noise Visual 	<ul style="list-style-type: none"> Visual
Covered Walkway at Kai Tak (typical walkway construction)	<ul style="list-style-type: none"> No status 	<ul style="list-style-type: none"> No status
Comprehensive Development Area (CDA) at Diamond Hill	<ul style="list-style-type: none"> Not concurrent 	<ul style="list-style-type: none"> Noise Visual
Submarine Gas Pipelines	<ul style="list-style-type: none"> Water Quality 	<ul style="list-style-type: none"> Nil
In-situ Re-provisioning of Sha Tin Water Treatment Works – South Works – Designs and Construction	<ul style="list-style-type: none"> Nil 	<ul style="list-style-type: none"> Nil
Proposed 132kV Cable Circuits Connecting with Ho Man Tin KCRC Substation and Tsim Sha Tsui Substation (Hung Hom Side)	<ul style="list-style-type: none"> Nil 	<ul style="list-style-type: none"> Nil

Note: [1] Construction phase of SCL (TAW-HUH).

[2] For the section near SCL (TAW-HUH)

1.8 Structure of this EIA Report

The structure of this EIA report is outlined below for ease of reference.

Section	Title	Aims
1	Introduction	Introduces the background information and the layout of the EIA Report.
2	Considerations of Revised Scheme Alignment	Summarises the various options considered and the main reasons for adopting the scheme recommended.
3	Project Description and Proposed Construction Methodology	Describes the project requirements covering the study area and site location, project nature and scope and the implementation programme, and describes relevant main construction/engineering aspects for the recommended scheme.
4	Cultural Heritage Impact Assessment	Presents the legislation, methodology, assessment and recommendations for cultural heritage impacts.
5	Ecological Impact Assessment	Presents the legislation, methodology, assessment and recommendations for ecological impacts.
6	Landscape and Visual Impact Assessment	Presents the legislation, methodology, assessment and recommendations for landscape and visual impacts.
7	Construction Dust Impact Assessment	Presents the legislation, methodology, assessment and recommendations for construction dust impacts.
8	Airborne Noise Impact Assessment	Presents the legislation, methodology, assessment and recommendations for airborne noise impacts.
9	Groundborne Noise Impact Assessment	Presents the legislation, methodology, assessment and recommendations for groundborne noise impacts.
10	Water Quality Impact Assessment	Presents the legislation, methodology, assessment and recommendations for water quality impacts.
11	Waste Management Implications	Presents the legislation, methodology, assessment and recommendations for waste management.
12	Land Contamination	Presents the legislation, methodology, assessment and recommendations for land contamination evaluation.
13	Hazard to Life	Presents the legislation, methodology, assessment and recommendations for hazardous impacts.
14	EM&A Requirements	Presents the EM&A requirements.
15	Summary of Environmental Outcomes	Presents the Key Environmental Outcomes.
16	Conclusions	Summarises the findings.

1.9 References

- [1-1] THB(T)CR 10/1016/99 Legislative Council Panel on Transport Subcommittee on matters relating to Railway "Funding Application for the design of the Shatin to Central Link", May 2008.
- [1-2] TBCR 10/1016/99 Legislative Council Brief "Operator of Shatin to Central Link", June 2002.
- [1-3] LC Paper No CB(1)1919/09-10(06) Legislative Council Panel on Development, Updated background brief on Kai Tak Development, 19 May 2010
- [1-4] LC Paper No CB(1)396/09-10(05) Legislative Council Panel on Development, Enhancing the delivery of Kai Tak Development, 24 November 2009
- [1-5] LC Paper No CB(1)570/08-09(03) Legislative Council Panel on Development, The Implementation Plan for the Kai Tak Development, 20 January 2009
- [1-6] Environmental Impact Assessment Report, Kai Tak Development, 2008.
- [1-7] Environmental Impact Assessment Report, Dredging Works for Proposed Cruise Terminal at Kai Tak, October 2007.
- [1-8] Environmental Impact Assessment Report, Kwun Tong Line Extension, June 2010.
- [1-9] Environmental Impact Assessment Report, Installation of Submarine Gas Pipelines and Associated Facilities from Ma Tau Kok to North Point for Former Kai Tak Airport Development, June 2010.
- [1-10] LC Paper No CB(1)86/07-08(01) Legislative Council Panel on Development, Reprovisioning of Sha Tin Water Treatment Works.