

LOCAL VESSELS ADVISORY COMMITTEE

Marine Traffic Impact of the Shatin to Central Link (SCL) Construction

Purpose

1. The purpose of this paper is to advise members of the proposed alignment and form of the cross harbour tunnels section of the Shatin to Central Link. This paper presents the finding of the Marine Traffic Impact Assessment (MTIA) study and the mitigation measures proposed during the construction phases. The project layout is shown in **Figure 1**.

Background

2. The Shatin to Central Link (SCL) is one of the ten large-scale infrastructure projects announced by the Chief Executive in his 2007-2008 Policy Address. In mid-2008 the Executive Council requested the MTR Corporation (MTRC) to proceed with further planning and design for this line. The SCL comprises two sections:
 - Tai Wai to Hung Hom Section which is an extension of the Ma On Shan Line (MOL) via East Kowloon to connect West Rail Line (WRL) at Hung Hom; and
 - Hung Hom to Admiralty Section which is an extension of the East Rail Line (EAL) at Hung Hom across the harbour to Admiralty.
3. The SCL scheme was authorised under the Railways Ordinance in March 2012, and construction of the Tai Wai to Hung Hom Section has commenced. Advance site investigation works of the Hung Hom to Admiralty Section were commenced in the 1st quarter of 2014 and the major cross harbour tunnel construction works are anticipated to commence in 2016, for completion by 2019. The cross harbour tunnel section includes construction of the North South Link (NSL) Cross Harbour tunnel across the Hung Hom fairway and within Causeway Bay Typhoon Shelter (CBTS), which will have impact to local marine operations.
4. In April 2013, MTRC employed AECOM Asia Company Limited to undertake the Consultancy Agreement No. C1107 – *Construction Scoping and Sequencing for NSL Cross Harbour Tunnels*. BMT Asia Pacific has been engaged to conduct a comprehensive Construction MTIA to assess the marine traffic and navigation impacts associated with marine activities generated by the SCL construction works - in particular during the Immersed Tunnel installation stage and tunnel construction within CBTS.
5. The objective of the MTIA is to identify the potential marine traffic impact generated by SCL construction works, reduce it to an acceptable level (as identified with reference to the Hong Kong Societal Risk Guidelines) through effective mitigation measures, and to minimize any operational constraints to adjacent marine traffic or local marine facilities.

Proposed Cross Harbour Tunnel Works for SCL

6. The Cross Harbour Tunnel works to be constructed comprise the following main elements:

- A section of cut and cover tunnel approximately 280m long at the west side of Causeway Bay Typhoon Shelter, including the required temporary reclamation for the works, and demolition and re-provisioning of the breakwater of CBTS.
- An immersed tunnel (IMT) of approximately 1.4km laid between Hung Hom and CBTS, involving two key construction stages:
 - Stage 1: Dredging Operations (approximate 1 year duration),
 - Stage 2: IMT installation and Backfilling works (approximate 2 years duration).
- A section of cut and cover tunnel approximately 150m long adjacent to the existing seawall at Hung Hom, including the demolition and re-provisioning of part of Hung Hom Finger Pier, this connects the 1.4km IMT section to the landside of Hung Hom.
- Establishment, operation and reinstatement works for the casting of IMT units at Shek O Basin.

Anticipated Marine Traffic Impacts during Construction and Operation Phases

7. It is anticipated that there will be impact to the marine traffic and / or marine facilities during the construction phase:

- *Impact to existing Hung Hom Fairway*

Marine traffic diversion is not proposed for the dredging operation but will be required during the IMT installation and backfilling operation, this is due to the longer duration of the IMT installation and backfilling processes and that the area occupied by the works barges cannot be vacated within a short period of time. Close co-ordination with local marine stakeholders will be carried out throughout the entire construction period by the contractor to maintain safe passage.

- *Impact to Government Mooring buoys*

The marine traffic diversion will occupy certain area of the swing circle of Government Mooring Buoys A29, A35, B3 and B4 which will be temporarily sterilized or removed during the construction of SCL.

- *Impact to local traffic due to the delivery of precast units*

The IMT tunnel units will be pre-fabricated in Shek O and towed to the Works Site for installation, the general routing is identified in **Figure 2**. A review of marine traffic activity along the delivery route and physical constraints (such as water depth) has been conducted as part of the MTIA. Localized short term impacts are anticipated, and effective management and coordination between Contractors and local stakeholders is required.

- *Impact during Operation Stage*

The tunnel units will be immersed and installed under the current seabed level, backfilled with protective rock armour and the seabed will be reinstated after construction. A hydro-graphic survey will be carried out by the Contractor following completion of the Works. No impact to the marine traffic / marine facilities is anticipated during the operation stage.

Proposed Mitigation Measures

8. The impacts described in section 7 above had been assessed in the Marine Traffic Impact Assessment. The following mitigation measures are proposed:

- Hung Hom Fairway diversion

A total of 10 working zones are anticipated within the Victoria Harbour for site preparation, IMT installation and backfilling works, the details are presented in **Appendix A**. As works progress in different working zones, necessary fairway diversions will be implemented for the IMT installation and backfilling works, but diversion is not proposed for the dredging works. Two options of fairway diversions are specified below:

- i. Option 1: a minimum of 285m of channel width maintained and two Government Mooring Buoys removed,
- ii. Option 2: a minimum of 235m of channel width maintained and one Government Mooring Buoy removed.

- Causeway Bay Typhoon Shelter (CBTS) re-arrangement

The construction works will occupy some of the mooring/anchorage area within the CBTS and affect the stakeholders' usage of mooring / anchorage area within the shelter. Three mooring re-arrangement stages are proposed based on the following principles and with reference to the vessel re-arrangement adopted by the Central Wan Chai Bypass project for their construction stages:

- i. The mooring re-arrangement seeks to minimise impact to the stakeholders within CBTS at all stages of construction.
- ii. Provide a good alignment of passageways for vessels accessing all areas of the typhoon shelter.
- iii. Provide significant separation/buffer zone between construction barges and yacht/pleasure craft, with a minimum of 20m designated passageway for users.
- iv. A single access point for construction vessels close to the western entrance where most of the works will be carried out.

The three mooring re-arrangement stages are illustrated in **Appendix B**.

Advice Sought

9. Members are invited to express their views on the paper and provide comment, if any, on the proposed mitigation measures.

Figure 1 SCL project layout

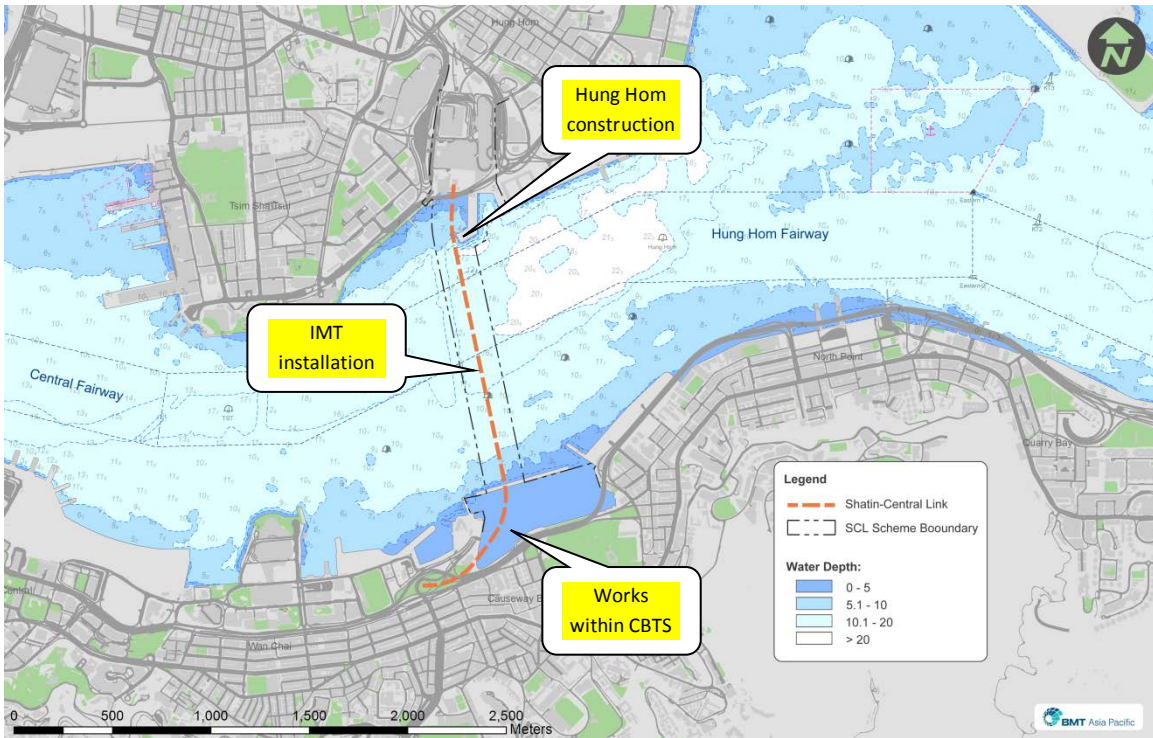


Figure 2 Delivery Route of IMT Units

