

Contract No. HY/2011/09
Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road
- Section between HKSAR Boundary and Scenic Hill


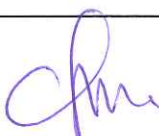


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Document Title:

Regular Marine Travel Routes Plan

	PREPARED BY:	INTERNAL REVIEW:		INTERNAL APPROVAL
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DATE	21. 2. 2013	21/2/2013	21. 2. 2013	21. 2. 2013



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2.0 DOCUMENT STATUS

2.1 Details of Revision:

Rev.	Rev. Date	Sections	Amendment Source and/or Details
A	26/10/2012	All	For the first submission to the SOR.
B	1/11/2012	All	Incorporated the IEC/ENPO's comments and amended text where necessary.
C	4/2/2013	Section 4.3 & 4.4	Incorporated the IEC/ENPO's comments and amended text where necessary.
D	21/2/2013	Section 4.3 Figure 4	Added a paragraph for routes records management. Amended a travel route to avoid dolphin hotspots above The Brothers.



3.0 INTRODUCTION

3.1 Purpose

The Regular Marine Travel Routes Plan (the Plan) has been prepared in accordance with Condition 2.9 of the Environmental Permit (EP-352/2009/A) for the Highways Department Contract namely Contract No. HY/2011/09 – Hong Kong-Zhuhai-Macao Bridge Hong Kong Link Road – Section between HKSAR Boundary and Scenic Hill.

The Plan describes the routes taken by the contractor's vessels moving to and from work areas, to minimize risk of collision with the Chinese White Dolphins (CWD) during the construction period. It also presents appropriate controlling measures on the marine traffic to minimize impacts on the CWD.

3.2 Contract Description

Highways Department commissioned the contract "Hong Kong Link Road- Section between HKSAR Boundary and Scenic Hill" (hereinafter called the Contract) with Contract No: HY/2011/09. Dragages -China Harbour-VSL Joint Venture (DCVJV) is awarded to undertake this Contract. The scope of the contract works comprises the following major items:

- (i) a dual 3-lane carriageway in the form of viaduct from the HKSAR boundary (connecting with the HZMB Main Bridge) to the Scenic Hill (connecting with the tunnel under separate Contract No. HY/2011/03), of approximately 9.4km in length with a hard shoulder for each bound of carriageway and a utilities trough on the outer edge of each bound of viaducts;
- (ii) a grade-separated turnaround facility located near San Shek Wan, composed of slip roads in the form of viaduct with single-lane carriageway bifurcated from the HKLR mainline with an elevated junction above the mainline;
- (iii) provision of ancillary facilities including, but not limited to, meteorological enhancement measures including the provisioning of anemometers and modification of the wind profiler station at hillside of Sha Lo Wan, provisioning of a compensatory marine radar, and provisioning of security systems; and
- (iv) associated civil, structural, geotechnical, marine, environmental protection, landscaping, drainage and highways electrical and mechanical (E&M) works, street lightings, traffic aids and sign gantries, marine navigational aids, ship impact protection system, water mains and fire hydrants, lightning protection system, structural health monitoring and maintenance management system (SHM&MMS), supervisory control and data acquisition (SCADA) system, as well as operation and maintenance provisions of viaducts, provisioning of facilities for installation of traffic control and surveillance system (TCSS), provisioning of facilities for installation of telecommunication cables/equipments and re provisioning works of affected existing facilities/utilities.

Cinotech Consultants Limited was commissioned by the DCVJV to undertake the EM&A works for the contract and was appointed as the Environmental Team (ET).

4.0 DESIGN OF REGULAR MARINE TRAVEL ROUTES

4.1 Types of Working Vessels

In line with the works progress and serving for different purposes, the following vessels will be used during the construction stage.

- (i) Derrick Lighter – 2000 ton



Vessel Details:-

LOA: 42m

Beam: 15m

Airdraft: 38m

Vessel Particular for Platform Erection & Piling Work

- (ii) Flat Top Barge – 2000 ton



Vessel Details:-

LOA: 50m

Beam: 15.2m

Airdraft: Max. 15m

Vessel Particular for Platform Erection & Piling Work



(iii) Hopper Barge – 1,000m³



Details:-

LOA: 47 m

Beam: 8 m

Airdraft: Max. 12m

Vessel Particular for Piling Work

(iv) Floating Concrete Batching Plant – Hang Gong Tong 1602



Details:-

LOA: 76 m

Beam: 23 m

Airdraft: Max. 30m

Vessel Particular for Piling Work



(v) Jack-up



Vessel Particular for Marine GI Work

(vi) Tug Boat



Vessel Particular for Marine Work

(vii) Yoyo Barge



Vessel Particular for Concrete Delivery

(viii) Inspection Boat



Vessel Particular for General Usage and Passengers

4.2 **Regular Marine Travel Routes**

The existing fairways, including North West Siu A Chau, North Cheung Chau, Western Fairway, Ma Wan Fairway and Kap Shui Mun Fairway will be followed and selected as the major marine travel routes. The Existing Fairway Plan is shown in Figure 1. All the regular routes for working vessels would not go through the dolphin hotspot in Brothers Islands.

The working vessels, i.e. Derrick Lighter, Flat Top, Concrete Batching Plant, Jack-up and Tug Boat, will mainly stay and work along the Works Area at the airport channel and Western Areas, the marine route and the works area is illustrated in Figure 2.

During the inclement weather, the working vessels will go to Tuen Mun Typhoon Shelter, Yau Ma Tei Typhoon Shelter or Hei Ling Chau Typhoon Shelter. Please refer to Figure 3 for the marine route.

For disposal of inert materials, DCVJV will deliver the materials to the neighbouring sites of Contracts HY/2010/02 HKBCF Reclamation and HY/2011/03 HZMB Section from Scenic Hill to HKBCF for filling purposes, as the preferred disposal grounds as stipulated in the Contract. Upon the inert waste has been excavated, Hopper Barge will be used to deliver the inert waste. The Marine Route is illustrated in Figure 4.

The precast and prefabricated units will be delivered to Hong Kong from Prefabricated Yard in Xinhui, Guangdong. Please refer to Figure 5 for the detailed marine routing.

The inspection boats will be employed for general usage and passengers travelling to and from different works area, namely WA6, WA4 and WA7. The marine route is shown in Figure 6.

4.3 **Monitoring**

DCVJV will maintain records of the use of the inspection boats under control. Such records will include, inter alia, details, times and purpose of journeys. The person using the works boats authorizing the journey will be required to sign his name and title against the entries. DCVJV will present current log books for inspection by the SOR when so required. The following monitoring measures will be adopted.

- i. Barges for transporting public fill or sediment will be equipped with Automatic Identification System (AIS) for track logging of vessels.
- ii. Tug boats and hopper barges will be installed GPS System for the purposes of recording the marine travel route during operation.



- iii. Derrick lighters, flat top barges, floating concrete batching plants, jack-up platforms and yoyo barges will be steered by the tug boats which are installed with GPS. As such, their travel routes can be followed.
- iv. Administrative control will be taken, one route will be randomly selected and checked once a month.

DCVJV will search to deploy much suitable working fleets which are equipped with AIS or GPS as possible.

The daily record of marine travel route of offsite working fleets will be collected and filed by the supervising staff for inspection and monitoring purposes. Record shall be submitted upon SOR's request. Warning will be noticed to the captain and his shipping company or material suppliers if vessel track log showed the approved marine travel route is not followed.

All vessels used for the construction of the marine works will comply with all the relevant regulations and requirements of the Marine Department, including:-

- (a) The Shipping and Port Control Regulations (Cap.313A);
- (b) The Merchant Shipping (Miscellaneous Craft) Regulations (Cap.313F);
- (c) The Merchant Shipping (Safety) (Signals of Distress and Prevention of Collisions) Regulations (Cap.369N);
- (d) The Dangerous Goods (Shipping) Regulations (Cap 295C);
- (e) The Merchant Shipping (Launches and Ferry Vessels) Regulations (Cap 313E);
- (f) Merchant Shipping (Local Vessels) Ordinance (Cap.548);
- (g) Shipping and Port Control (Works) Ordinance (Cap.313X).

4.4 **Precautionary Measures**

The main issue with the Chinese White Dolphin is a moving vessel striking and injuring an animal during the period of travel. Information regarding the locations of frequent sighting near the proposed vessel routes indicated that the following would also be needed to minimize the chance of a vessel striking a dolphin.

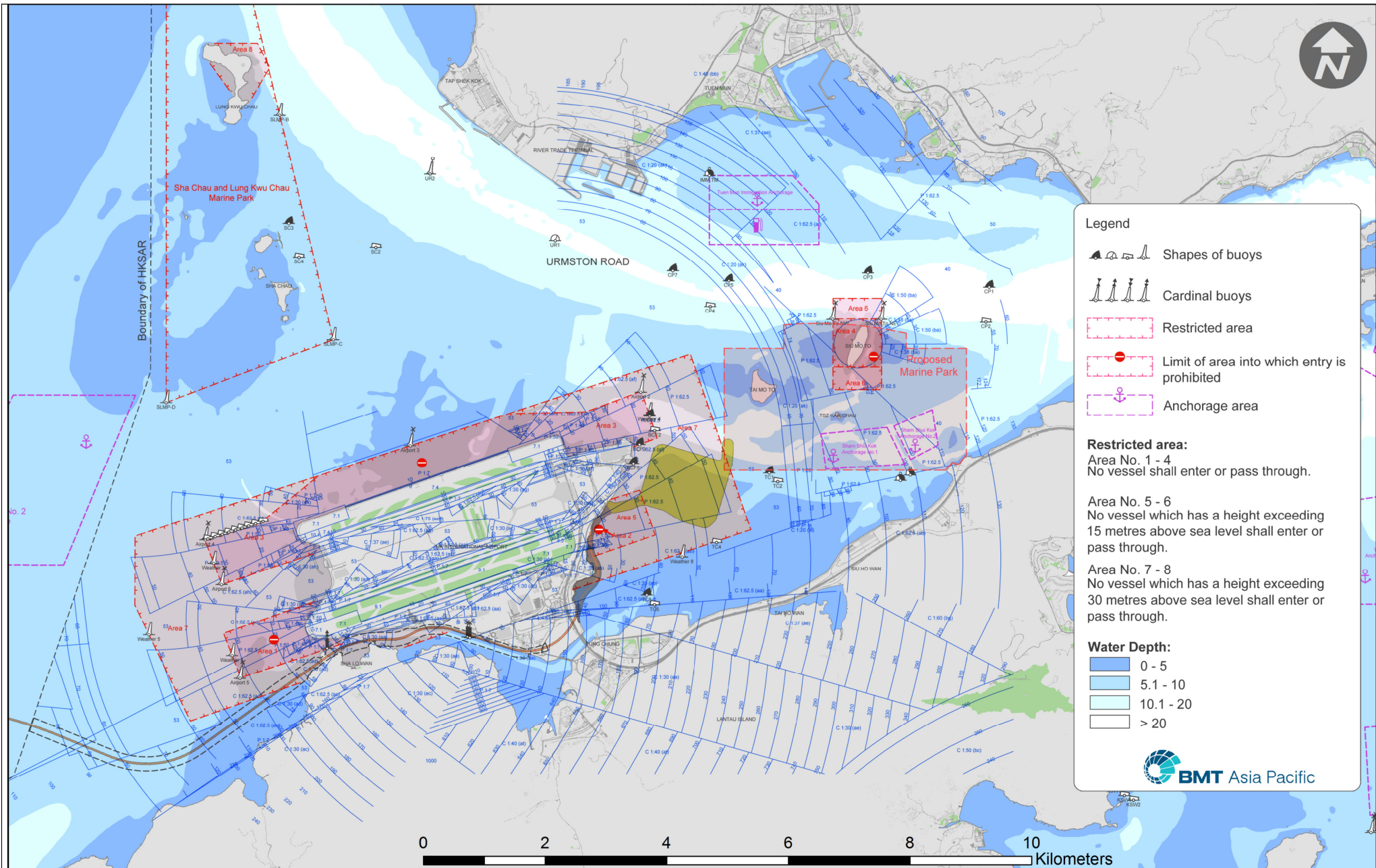
- (a) When entering into a distance of 250m from silt curtains of HY/2011/09 sites, all vessels will travel at a speed no greater than 5 knots, and at a speed no greater than 10 knots for a distance of at least 1.5km away. Vessels can then increase speed after that distance unless other restrictions apply.
- (b) If any dolphins are sighted within 250m of a vessel then the vessel will slow to a speed no greater than 5 knots for at least 3 minutes after the last sighting.
- (c) Barges for delivering will be selected as large sizes as possible to reduce the number of delivering trips.
- (d) Concerning the travelling route for fill materials to the HKLR03 site passing dolphin hotspots, it is agreed that prolonged marine travel route to be adopted – to go further east until pass over proposed marine park in Brothers Island and turn back to HKLR03. The speed will keep below 5 knots when crossing the edge of the proposed marine park. The travel route is illustrated in Figure 4.

4.5 **Training**

Captains of all working vessels should be required to use regular travel routes, in order to minimize the chance of vessel collision.

Captains of construction vessels working in the West Lantau waters should undergo training to learn about local dolphins and porpoises. They should be trained to be aware of the protocol for "dolphin friendly" vessel operation. Reference will be made to Code of Conduct for Dolphin Watching Activities available from Agriculture, Fisheries and Conservation Department.

END OF TEXT



Legend

- Shapes of buoys
- Cardinal buoys
- Restricted area
- Limit of area into which entry is prohibited
- Anchorage area

Restricted area:

Area No. 1 - 4
No vessel shall enter or pass through.

Area No. 5 - 6
No vessel which has a height exceeding 15 metres above sea level shall enter or pass through.

Area No. 7 - 8
No vessel which has a height exceeding 30 metres above sea level shall enter or pass through.

Water Depth:

- 0 - 5
- 5.1 - 10
- 10.1 - 20
- >20m depth color swatch"/> > 20

BMT Asia Pacific

Drawn By:	KMN
Checked By:	BJVJ
Approved By:	KMN
Date:	12/09/12
Checked:	KMN
Date:	12SEP2012

Joint Contractor:

Client:

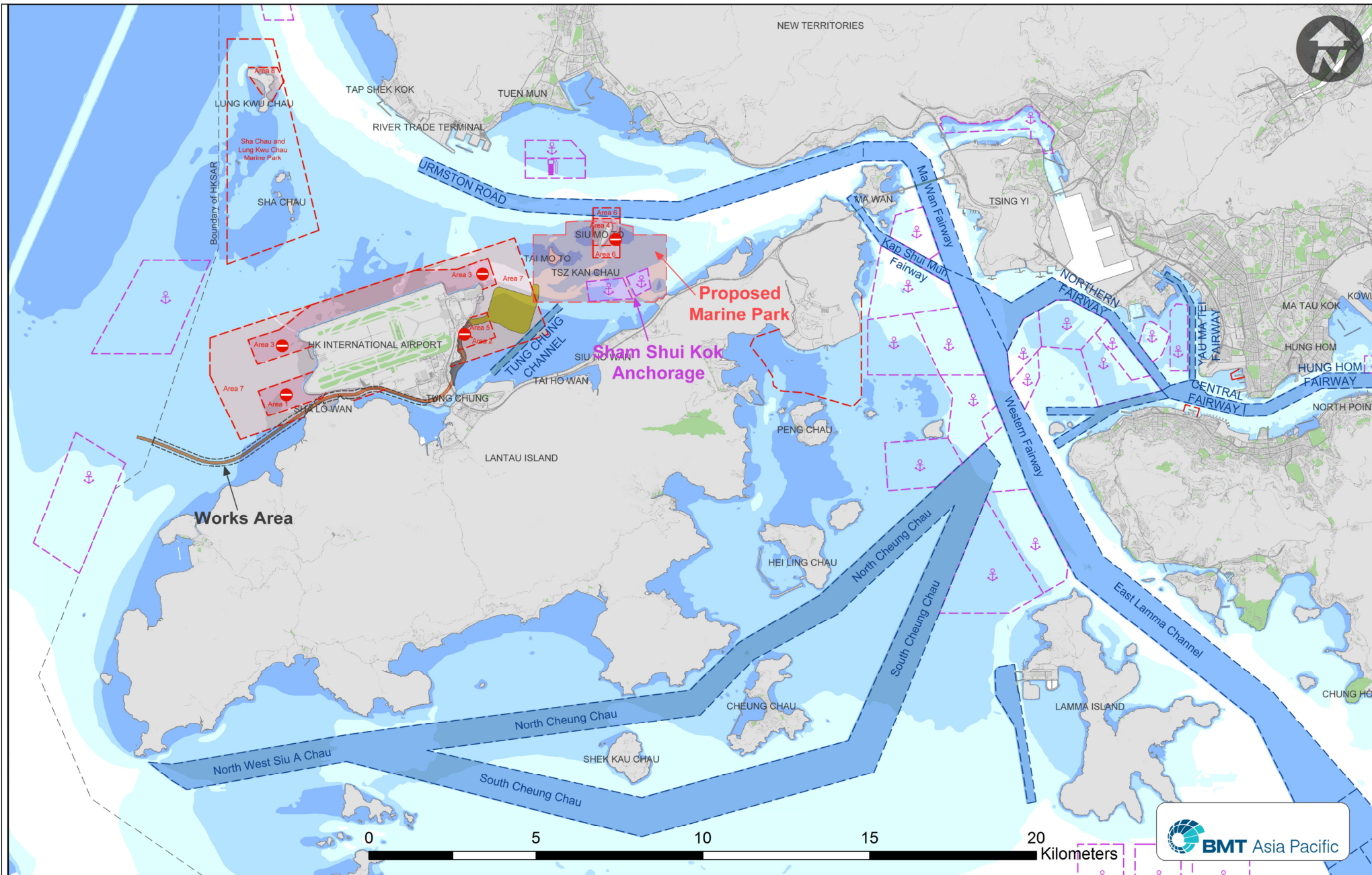
Contractor/Designer:

Contract No. HY/2011/09
Hong Kong - Zhuhai - Macao Bridge Hong Kong Link Road
Section Between HKSAR Boundary and Scenic Hill

Figure 1: Existing Fairway Plan

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Scale:	N.T.S.	Sheet No. 1 OF 2
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Designed By: KMN
 Drawn By: BJVJ
 Approved By: KMN
 Date: 12SEP2012

Main Contractor:

Client:

Contractor's Designer:

Project:
 Contract No. HY2011/09
 Hong Kong - Zhuhai - Macao Bridge Hong Kong Link Road
 Section Between HKSAR Boundary and Scenic Hill

Figure 1: Existing Fairway Plan

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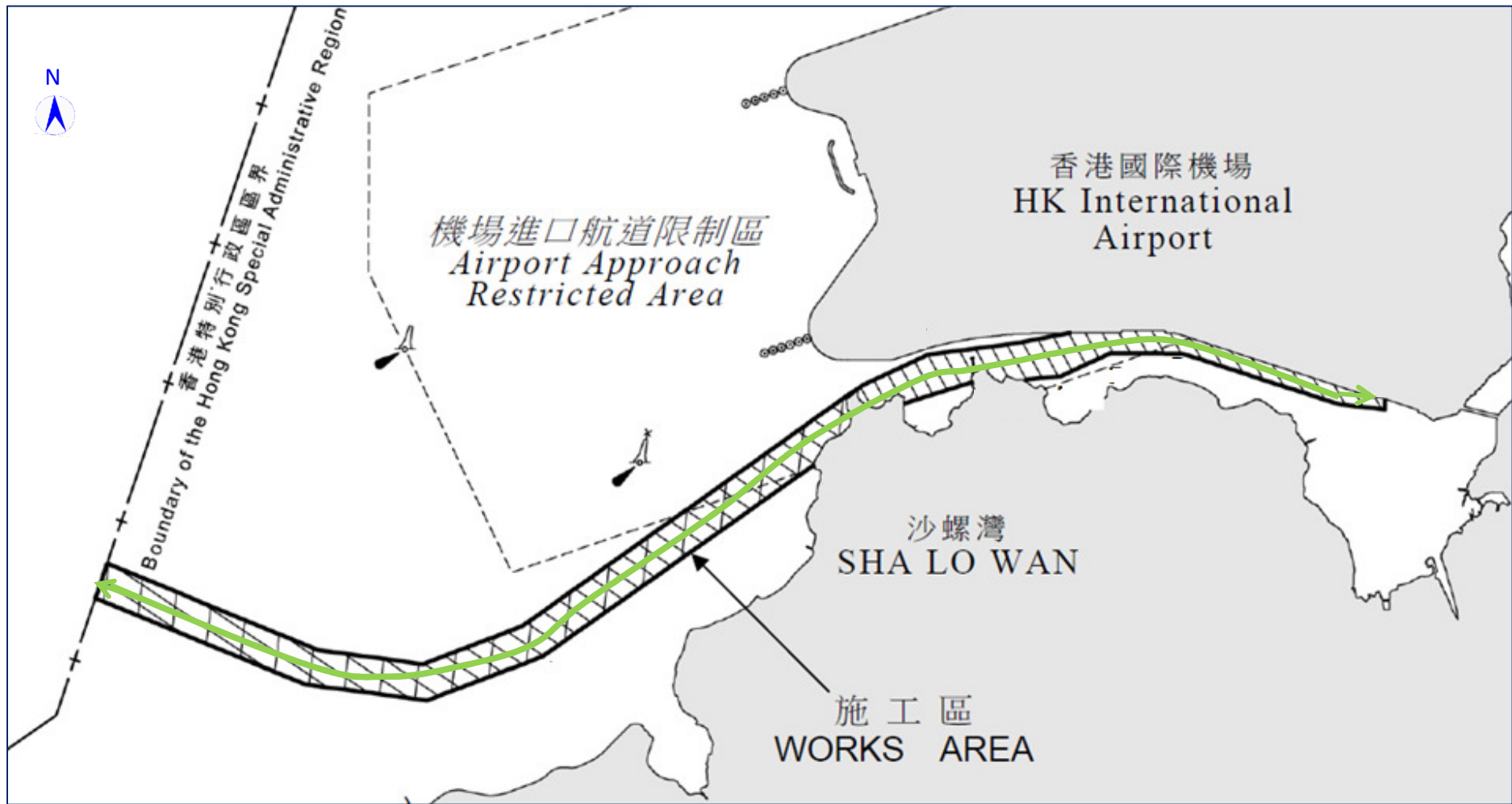
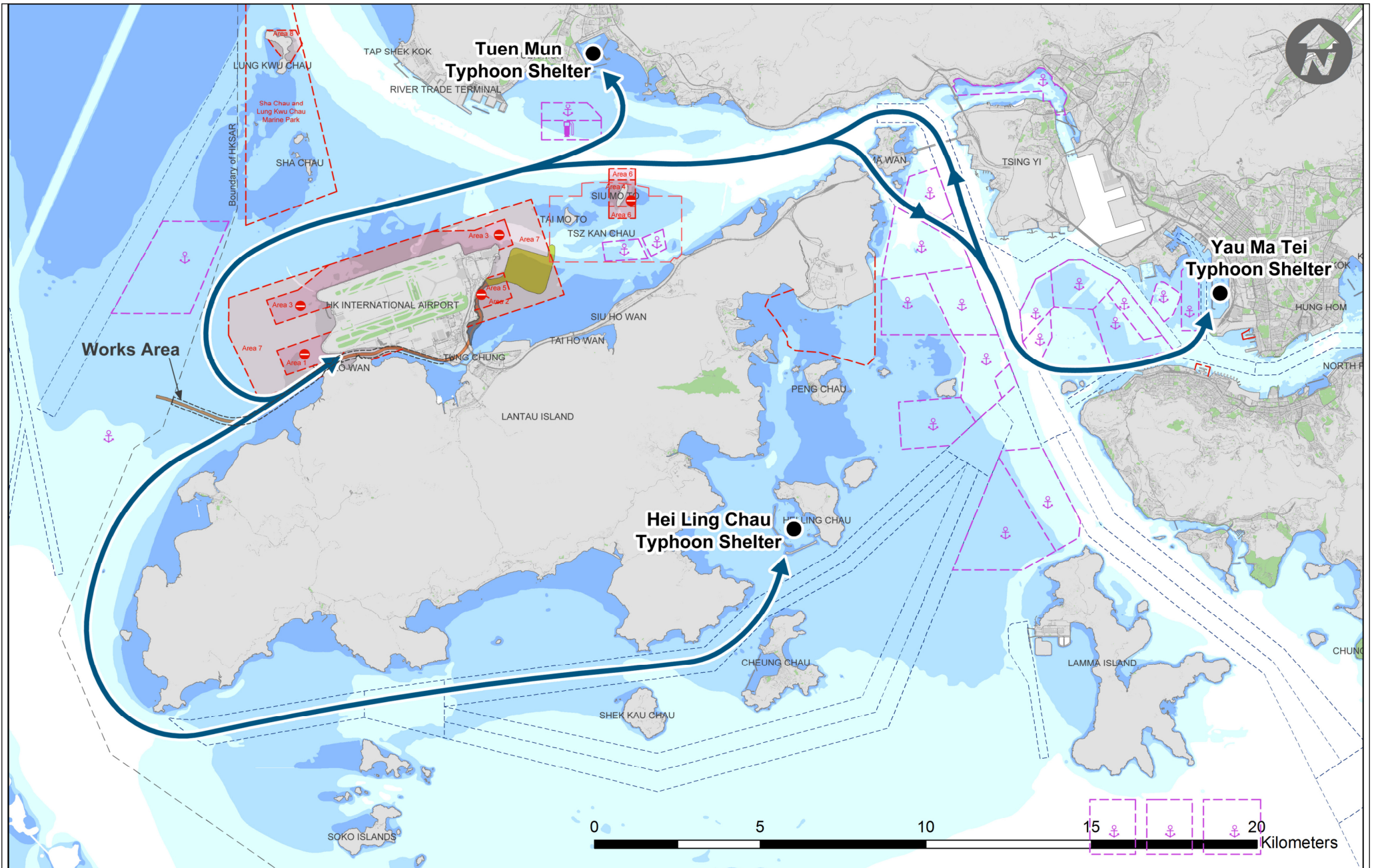


Figure 2: Marine Route and Works Area for the Working Vessels



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 Section Between HKSAR Boundary and Scenic Hill
 Figure 3: Marine Route for the Working Vessels during Inclement Weather

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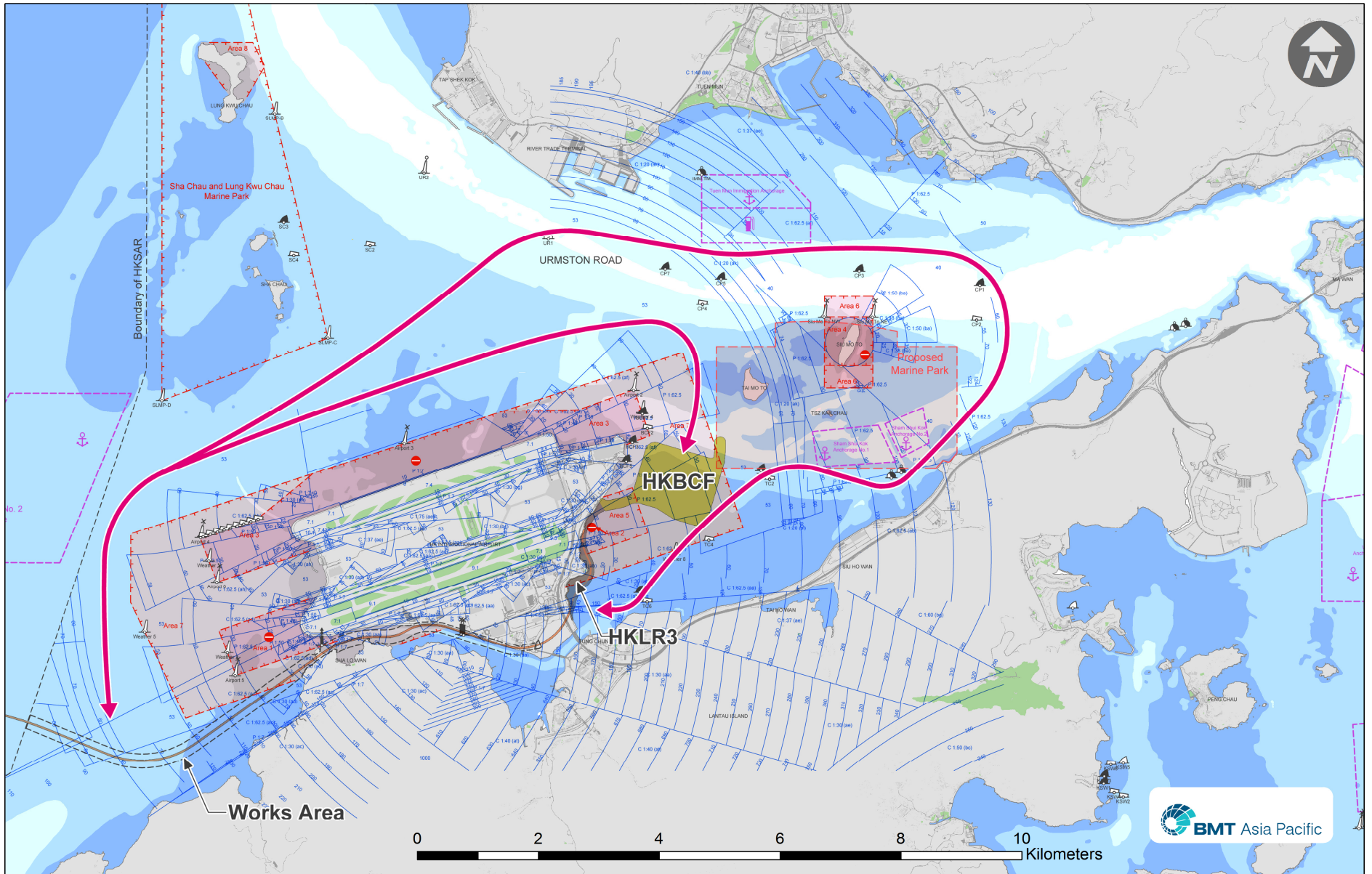
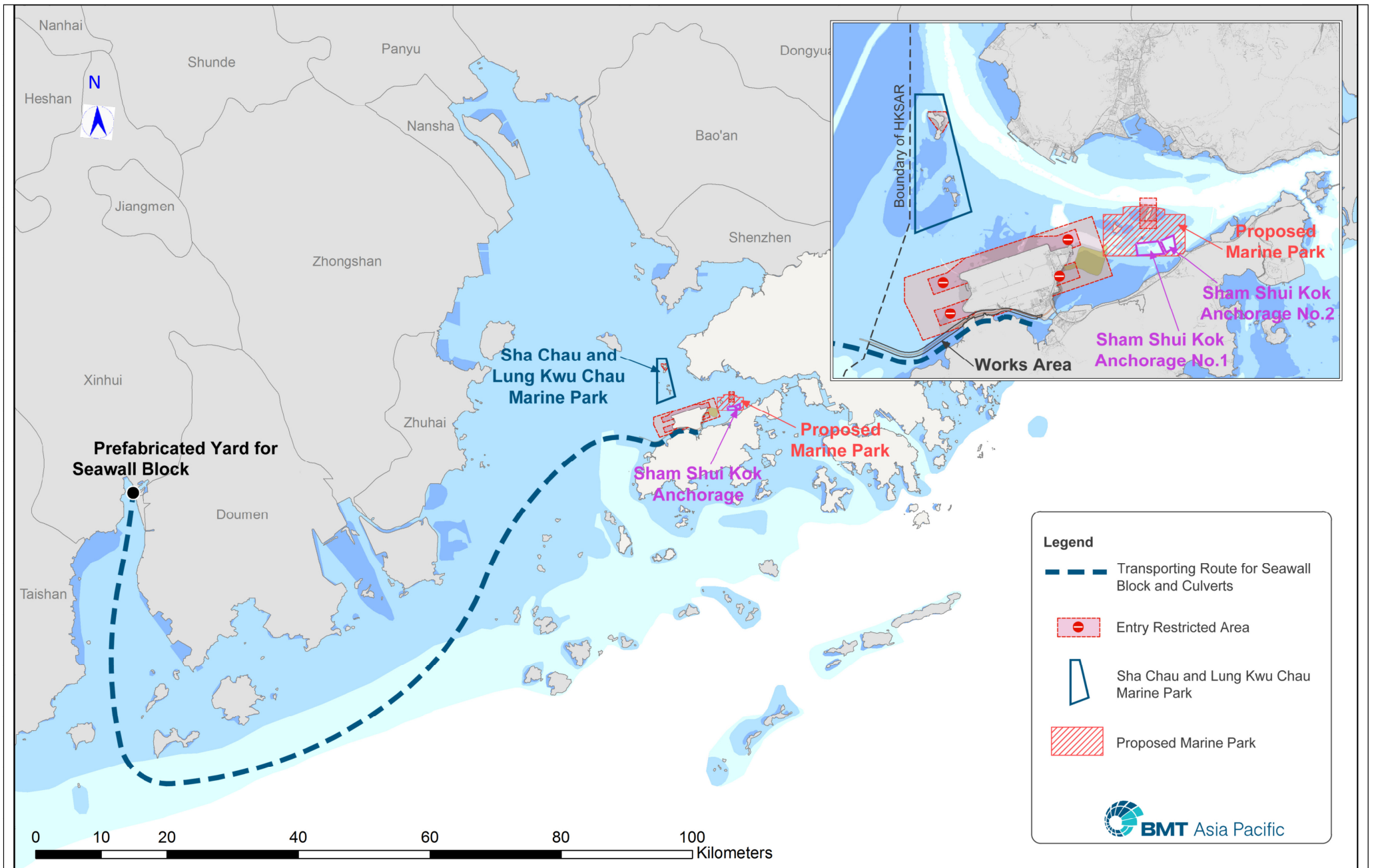


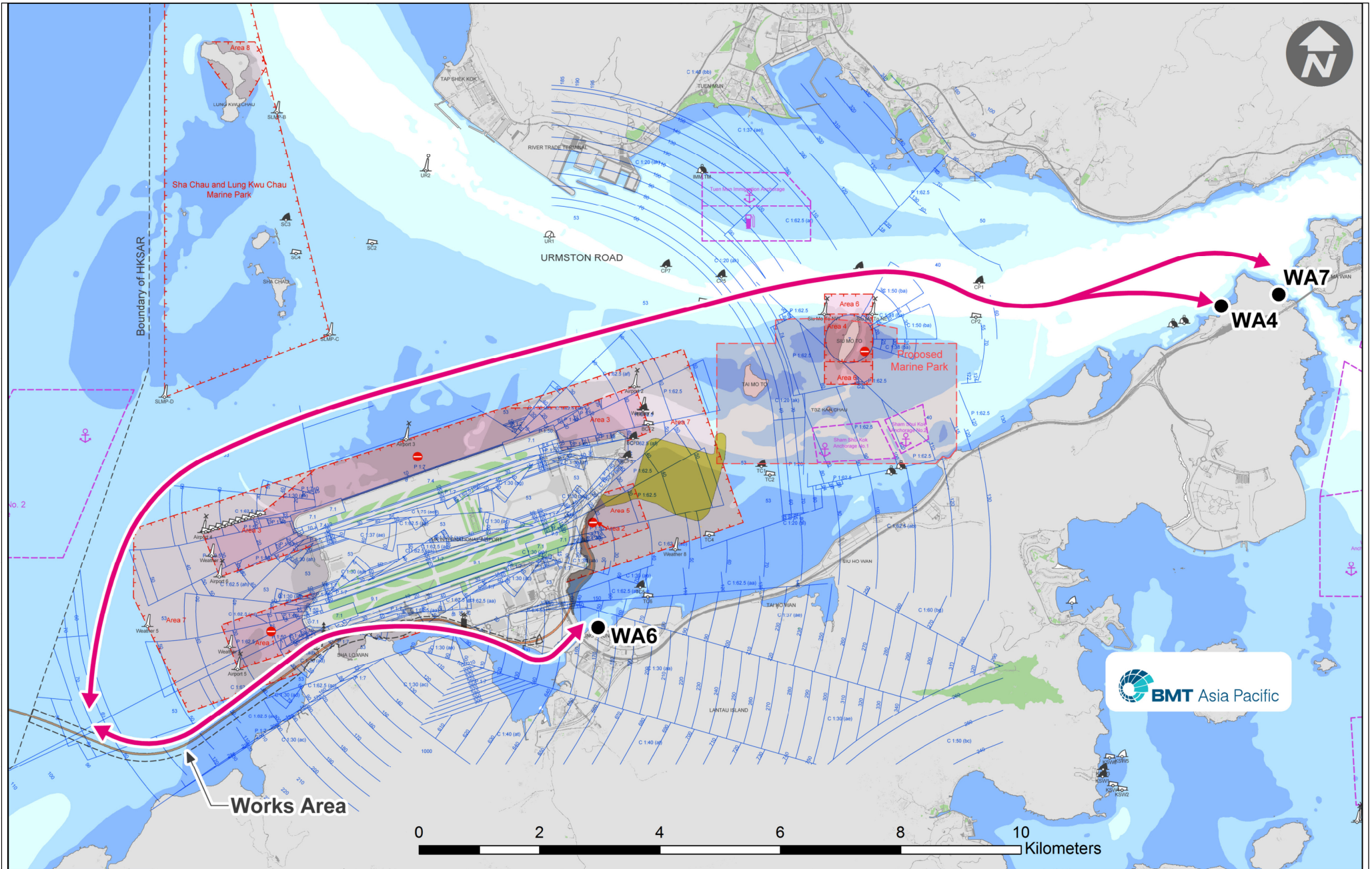
Figure 4: Marine Route for Fill Materials



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Figure 5: Marine Route for Precast and Prefabricated Units Delivery

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Drawn By	BJVJ		
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0	FIRST ISSUE	12/09/12	KMN

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Client:

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Project:

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 Section Between HKSAR Boundary and Scenic Hill

Figure 6: Marine Route for General Usage and Passenger

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