

LEGEND

Marine Stop Area

Sensitive Shoreline

Copyright Information

P4	19-01-12	JT		
Issue	Date	By	Chkd	Appd

Meters01250250050007500

ARUP

Level 5 Festival Walk
80 Tai Chee Avenue
Kowloon Tong, Kowloon
Hong Kong

Client
Civil Engineering and Development Department

Job Title
**Agreement No. CE 9/2011 (CE)
Increasing Land Supply by Reclamation and Rock Cavern
Development cum Public Engagement - Feasibility Study**

Drawing Title
**STATUTORILY PROTECTED AND
CONSTRAINT AREAS**

Scale
1:200,000

Drawing Status
Draft

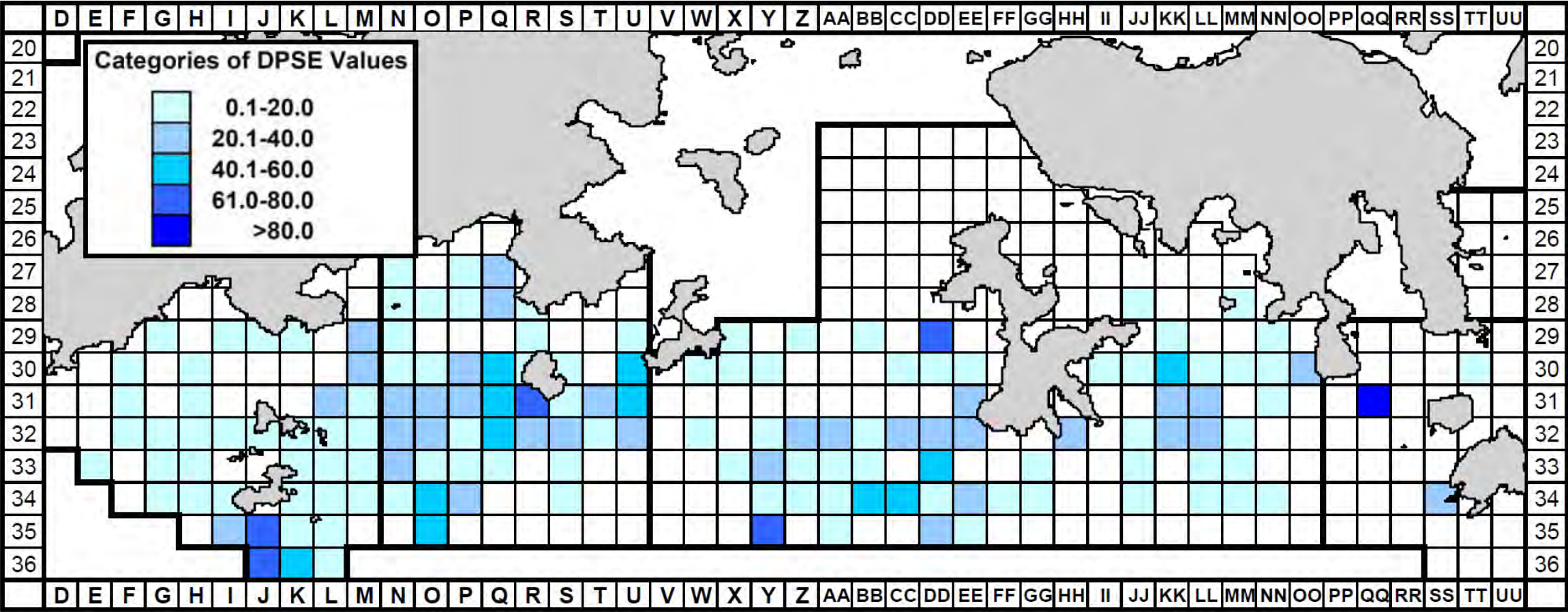
Job No.

Fig 1

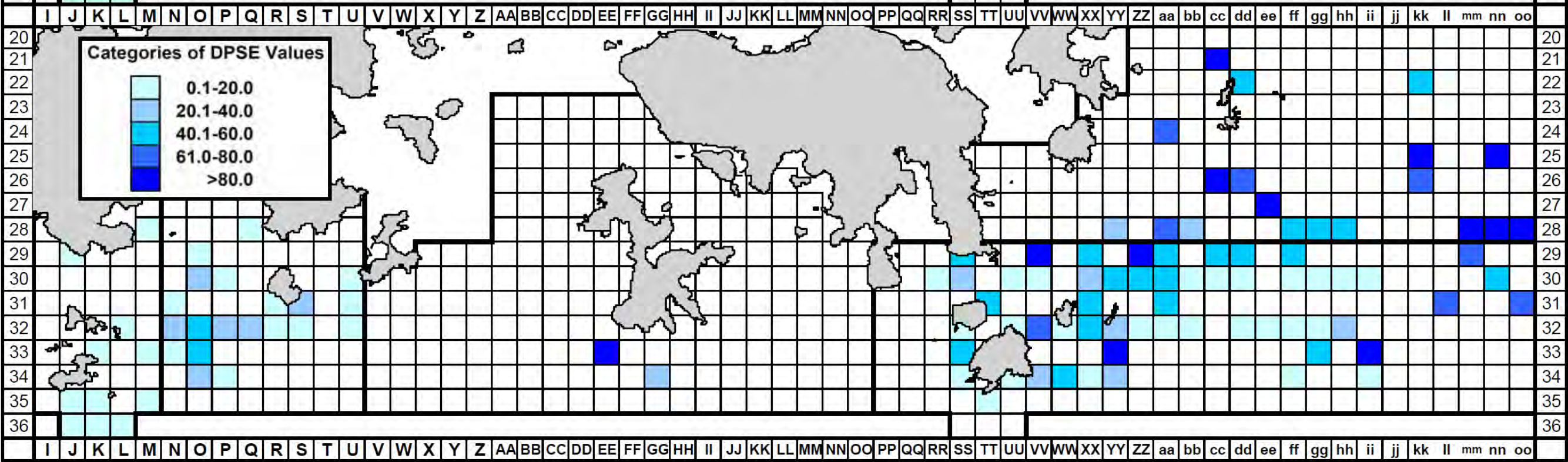
Issue

P4

Dry Season (Dec. - May)



Wet Season (Jun. - Nov.)



Notes:
[1] Density of finless porpoises with corrected survey effort per km² in southern waters of Hong Kong during dry season (top) wet season (bottom) using data collected during 2004-12
(DPSE = no. of porpoises per 100 units of survey effort)
[2] Source: Samuel,Y.K. HUNG (2013), Monitoring of Marine Mammals in Hong Kong Waters, Final Report (1 April 2012 to 31 March 2013)

03	2013-03-04	SC	RL	ST
Issue	Date	By	Drawn	Appd

ARUP

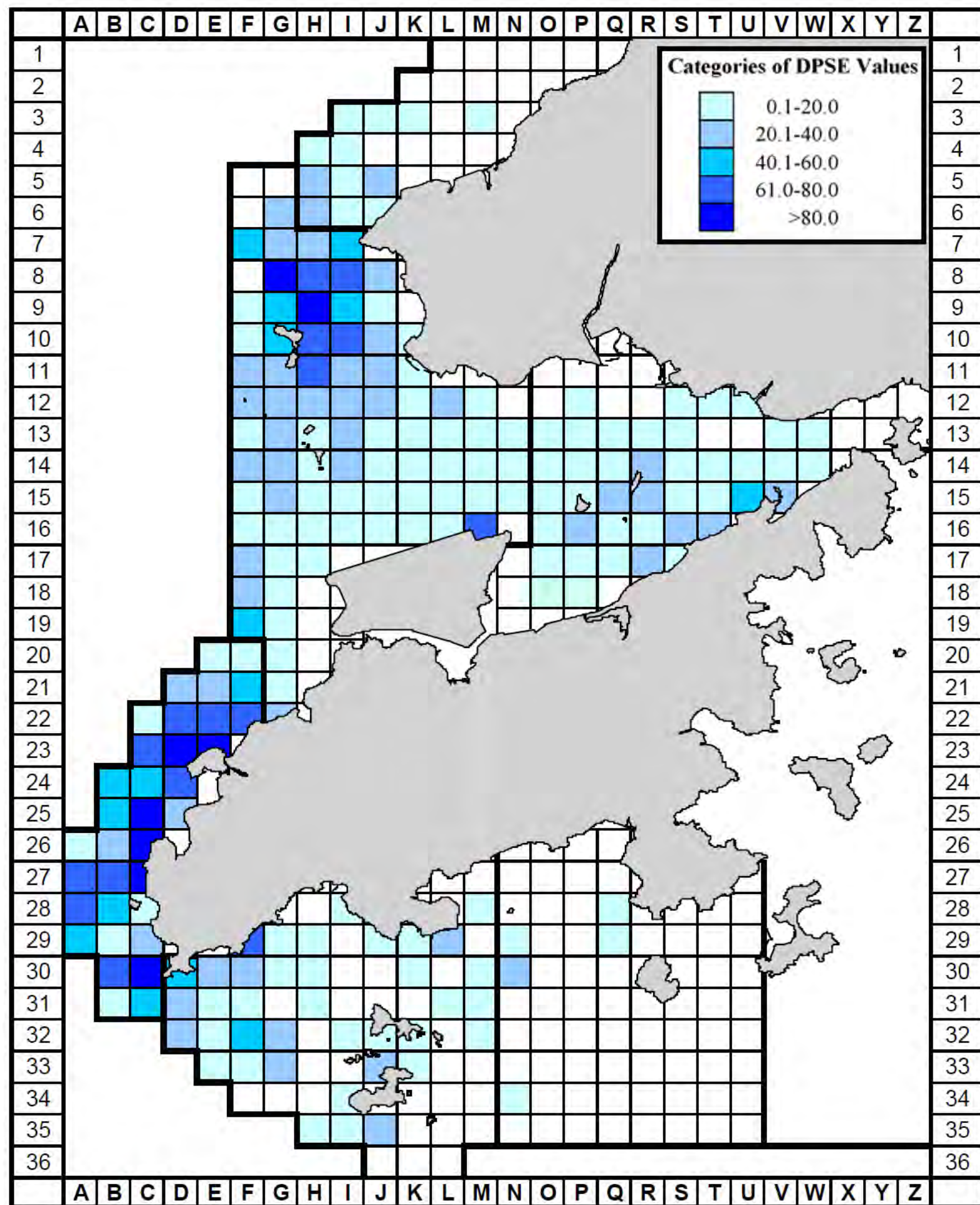
Level 5 Festival Walk
80 Tat Chee Avenue
Kowloon Tong, Kowloon
Hong Kong

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Civil Engineering and Development Department

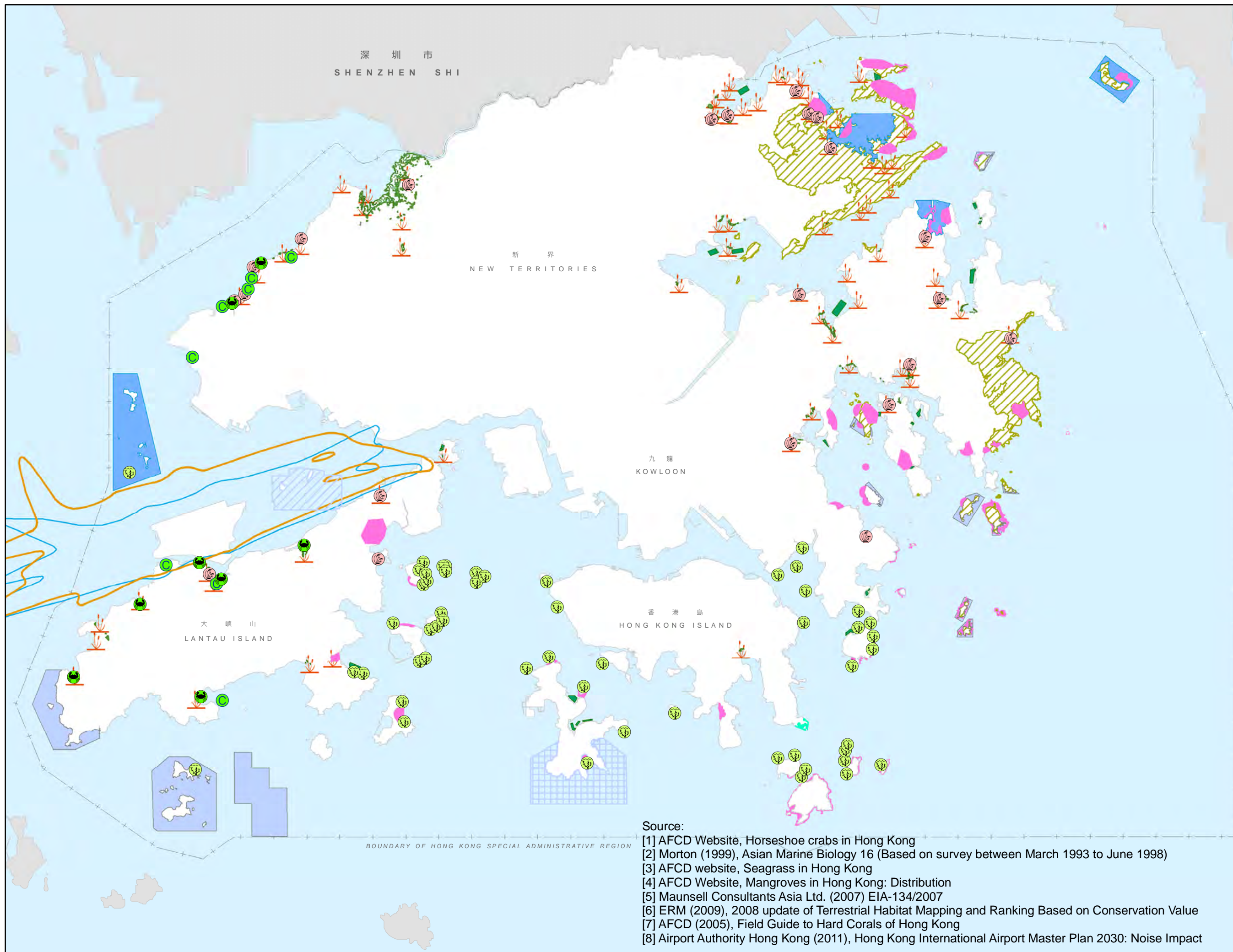
Job Title
Agreement No. CE 9/2011 (CE)
Increasing Land Supply by Reclamation and Rock Cavern
Development cum Public Engagement - Feasibility Study

Drawing Title
Locations of Finless Porpoise Hotspots

Scale at A3
As Shown
Draft
Job No. 217499
Fig 2
Issue D3



Notes:
 [1] Density of Chinese white dolphins with corrected survey effort per km² in waters around Lantau Island during 2008-12 (number within grids represent "DPSE" = no. of dolphins per 100 units of survey effort)
 [2] Source: Samuel,Y.K. HUNG (2013), Monitoring of Marine Mammals in Hong Kong Waters, Final Report (1 April 2012 - 31 March 2013)



Legend

- Juveniles Horseshoe Crab Site (AFCD, 2011)^[1]
- Juveniles Horseshoe Crab Site (Morton, 1993)^[2]
- Seagrass [3]
- Mangrove [4]
- Key Coral Area [5]
- Mangrove [6]
- Key Coral Area [7]
- Marine Park
- Marine Reserve
- Committed Marine Park
- Proposed Marine Park
- Potential Marine Park
- Fish Culture Zone
- Geopark
- NEF 25 Contours [8]
- Two-Runway Option
- Three-Runway Option

D1	2013-05-11	SC	KL	ST
Issue	Date	By	Check	Appd

0 125 250 500 750 Meters

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Agreement No. CE 9/2011 (CE)
Increasing Land Supply by Reclamation and Rock Cavern
Development cum Public Engagement - Feasibility Study

Drawing Title

Major Environmental Constraints

Scale at A3

1:200,000

Drawing Status

Draft

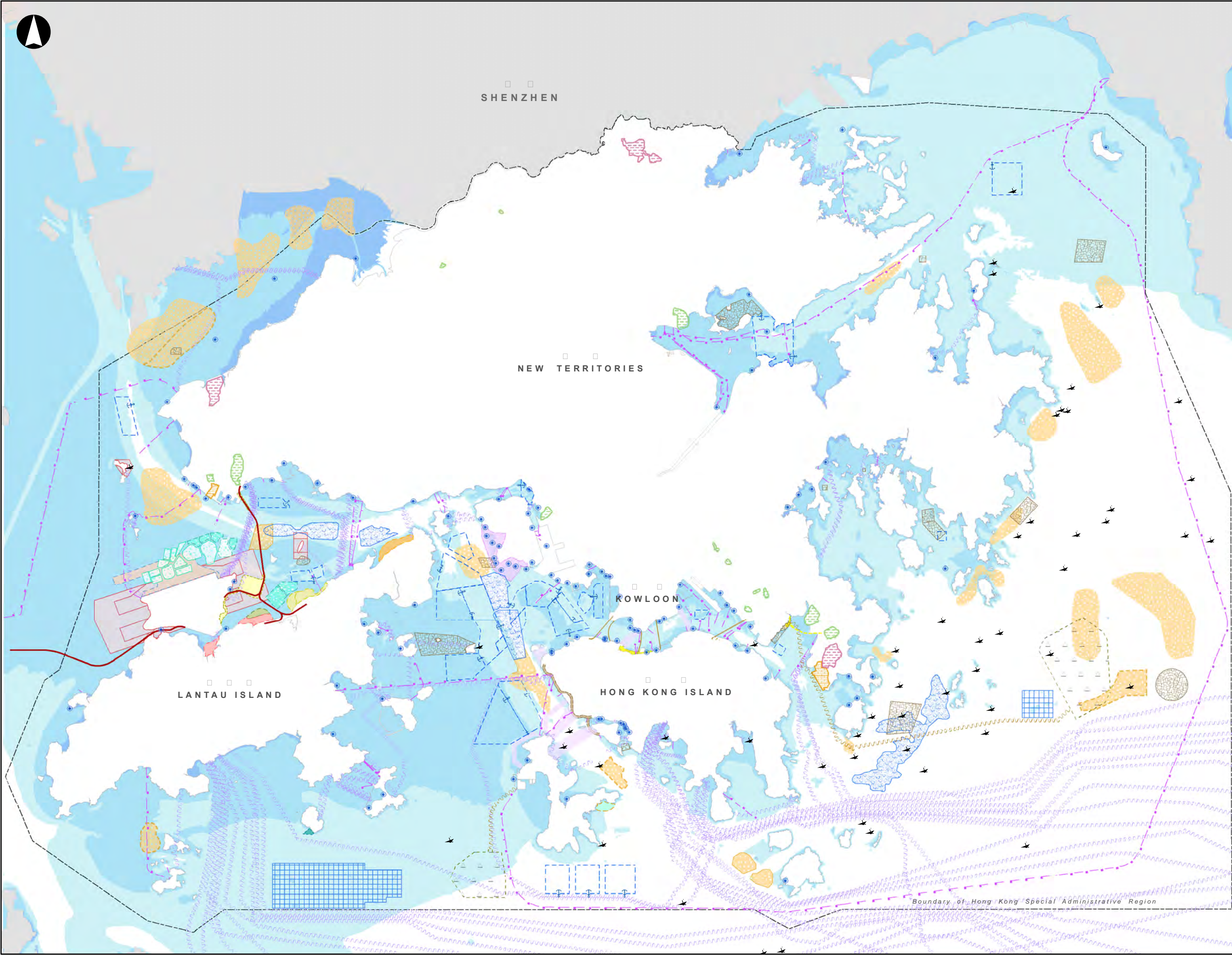
Job No. 217499

Fig 4

Issue D1

Source:

- [1] AFCD Website, Horseshoe crabs in Hong Kong
- [2] Morton (1999), Asian Marine Biology 16 (Based on survey between March 1993 to June 1998)
- [3] AFCD website, Seagrass in Hong Kong
- [4] AFCD Website, Mangroves in Hong Kong: Distribution
- [5] Maunsell Consultants Asia Ltd. (2007) EIA-134/2007
- [6] ERM (2009), 2008 update of Terrestrial Habitat Mapping and Ranking Based on Conservation Value
- [7] AFCD (2005), Field Guide to Hard Corals of Hong Kong
- [8] Airport Authority Hong Kong (2011), Hong Kong International Airport Master Plan 2030: Noise Impact



Legend

Ship Wreck

Marine Facility

Submarine Cable

Submarine Pipeline

Anchorage

Utility Area

Existing Landfill Site

Restored Landfill Site

Existing Fill Bank

Dumping Ground

Exhausted Sand Borrow Pit for Disposal of Uncontaminated Sediment

Open Sea Disposal Area for Disposal of Uncontaminated Sediment

Sand Deposit

Extent Prior to Dredging

With Constraints on Dredging

Not Being Used on Environmental or Other Grounds

Contained Pit for Disposal of Contaminated Sediment

Active CPDCS (Contained Pit for Disposal of Contaminated Sediment)

Filled & Already Fully Capped CPDCS

Planned CPDCS

Airport Exclusion Zone

Tunnel

Central - Wan Chai Reclamation

Proposed CT10

Proposed HKBCF / TM-CLKL Reclamations

Proposed IWMF Reclamation

Proposed Third Runway Reclamation

Proposed Tung Chung New Town Extension Area

Proposed North Lantau Leisure & Entertainment Node

Proposed Lantau Logistics Park

Proposed Lantau Theme Park

Proposed Lamma Marina / Resort

Proposed Cross Bay Link Reclamation

Proposed HKLR Reclamation

Proposed Windfarm

Proposed Cross Bay Link

Proposed DSD HATS Tunnel

Proposed Windfarm Cable Route

Proposed HZMB

Water Depth (metre below Chart Datum)

< 0.0

0.1 - 10.0

10.1 - 20.0

20.1 - 50.0

PG	2014-02-25	SC		
Issue	Date	By	CHKD	Appd

ARUP

Level 5, Festival Walk
80 Tai Chee Avenue
Kowloon Tong, Kowloon
Hong Kong

Client
Civil Engineering and Development Department

Job Title
**Agreement No. CE 9/2011 (CE)
Increasing Land Supply by Reclamation and Rock Cavern
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Drawing Title
Major Non-environmental Marine Constraints

Scale of A3
1:200,000

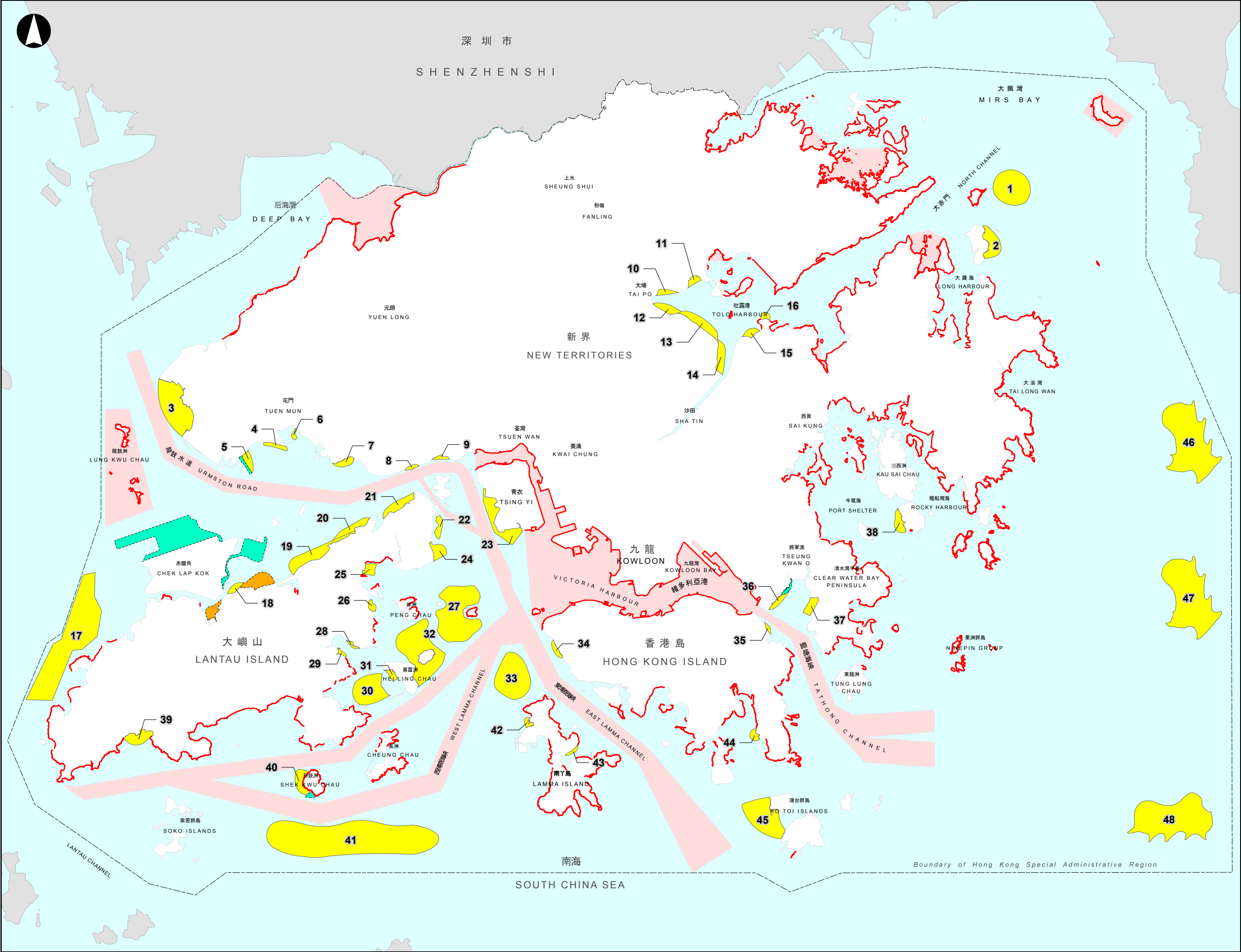
Drawing Status
Preliminary

Job No.
217499

Fig 5

Issue
P0

© Arup



- LEGEND
- Reclamation Site under Investigation / Study (by CEDD)
 - Reclamation Site under Investigation / Study (by Others)
 - Pre-Longlisted Reclamation
 - Marine Stop Area
 - Sensitive Shoreline

Note:
The size and shape of reclamation sites shown on this plan are hypothetical assumptions for the purpose of BTA carried out at the corresponding stage of site selection process only. They do not represent any future design to be implemented.

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P9	19-01-12	JT			
Issue	Date	By	Chd	Appd	

Scale: 1:200,000

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Level 5 Festival Walk
80 Tai Chee Avenue
Kowloon Tong, Kowloon
Hong Kong

Client: Civil Engineering and Development Department

Job Title: Agreement No. CE 9/2011 (CE)
Increasing Land Supply by Reclamation and Rock Cavern Development cum Public Engagement - Feasibility Study

Drawing Title: PRE-LONGLISTED RECLAMATION SITES

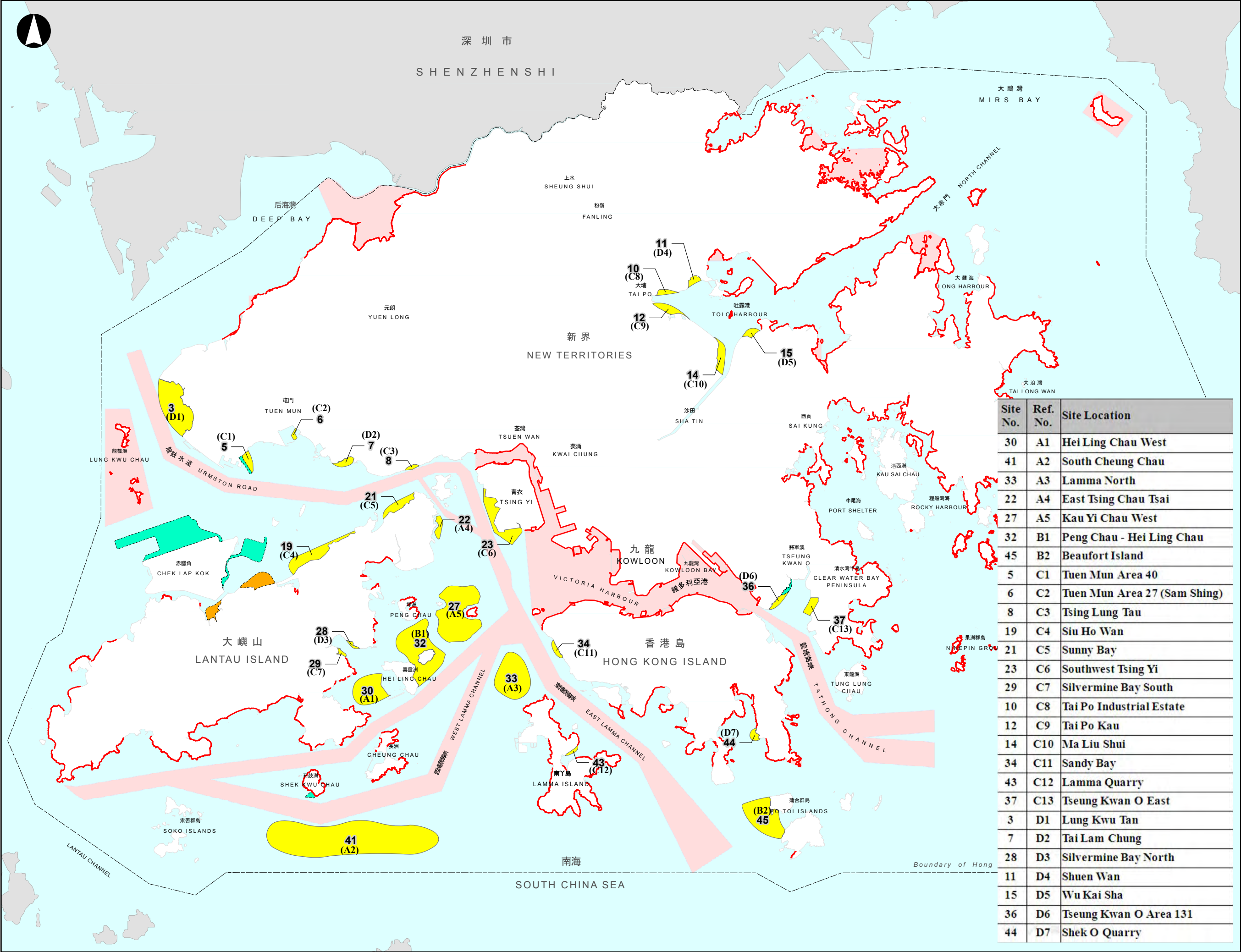
Scale: 1:200,000

Drawing Status: Issue

Job No: 217499

Fig 6

Issue: P9



- LEGEND
- Reclamation Site under Investigation / Study (by CEDD)
 - Reclamation Site under Investigation / Study (by Others)
 - Recommended Longlisted Reclamation Sites
 - Marine Stop Area
 - Sensitive Shoreline

Site No.	Ref. No.	Site Location
30	A1	Hei Ling Chau West
41	A2	South Cheung Chau
33	A3	Lamma North
22	A4	East Tsing Chau Tsai
27	A5	Kau Yi Chau West
32	B1	Peng Chau - Hei Ling Chau
45	B2	Beaufort Island
5	C1	Tuen Mun Area 40
6	C2	Tuen Mun Area 27 (Sam Shing)
8	C3	Tsing Lung Tau
19	C4	Siu Ho Wan
21	C5	Sunny Bay
23	C6	Southwest Tsing Yi
29	C7	Silvermine Bay South
10	C8	Tai Po Industrial Estate
12	C9	Tai Po Kau
14	C10	Ma Liu Shui
34	C11	Sandy Bay
43	C12	Lamma Quarry
37	C13	Tseung Kwan O East
3	D1	Lung Kwu Tan
7	D2	Tai Lam Chung
28	D3	Silvermine Bay North
11	D4	Shuen Wan
15	D5	Wu Kai Sha
36	D6	Tseung Kwan O Area 131
44	D7	Shek O Quarry

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Copyright Information

P9	19-01-12	JT		
Issue	Date	By	Chkd	Appd

Scale: 1:200,000

Issue

217499

Fig 7

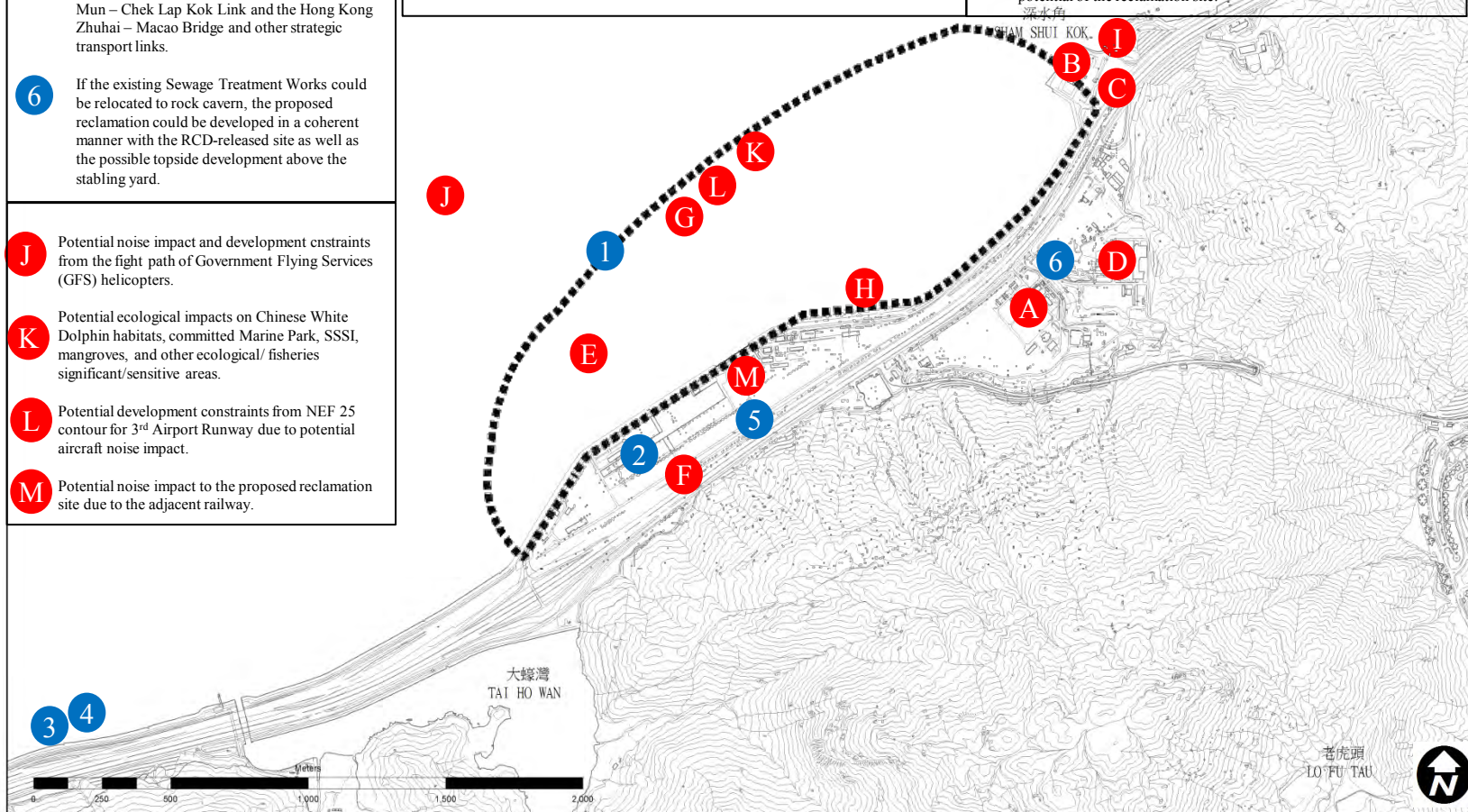
P9

OPPORTUNITIES

- 1 The Proposed reclamation could create a prime waterfront development sites.
- 2 The existing Siu Ho Wan stabling yard may allow for the development of an MTR station.
- 3 The proposed reclamation at Siu Ho Wan enjoys proximity to the regional GIC facilities within Tung Chung.
- 4 The proposed reclamation can provide solution space for facilities which Tung Chung is not currently equipped.
- 5 The proposed reclamation enjoys good accessibility with the connected to the existing North Lantau Highway and the proposed Tuen Mun – Chek Lap Kok Link and the Hong Kong Zhuhai – Macao Bridge and other strategic transport links.
- 6 If the existing Sewage Treatment Works could be relocated to rock cavern, the proposed reclamation could be developed in a coherent manner with the RCD-released site as well as the possible topside development above the stabling yard.

CONSTRAINTS

- A The hinterland of Siu Ho Wan is occupied by a number of NIMBY/industrial uses /facilities posing different land use interfacing issues, eg. Siu Ho Wan Sewage and Water Treatment Works. A planned Organic Waste Treatment Facility (OWTF) is also located within the Siu Ho Wan hinterland.
- B The proposed reclamation abuts the existing Refuse Transfer Station (RTS) to its east. Appropriate measures will need to be implemented to address the interface between the future development upon the reclamation and the RTS.
- C Two columbarium developments are also proposed to be located east of the proposed reclamation which may have potential impact on traffic conditions on the proposed reclamation.
- D The existing Siu Ho Wan Water Treatment Works (WTW) is a Potentially Hazardous Installation (PHI) with a Consultation Zone of 1,000m in radius. Given potential hazard to life issue, if the WTW is not relocated it may undermine the development potential of part of the proposed reclamation.
- E The existing Airport Height Restrictions will have an impact on the development potential of the proposed reclamation. Future development on the proposed reclamation will be limited to building heights ranging from 80mPD to 100mPD.
- F The adjacent transport infrastructure will have potential impacts on the future development of the reclamation. These potential impacts include air pollution and traffic noise generated by the North Lantau Highway.
- G The proposed reclamation is located within proximity to a committed Marine Park. Further reclamation beyond that proposed is unlikely.
- H The proposed Road P1 will have to be provided to sustain the development of Siu Ho Wan. However, the proposed road may occupy a rather significant portion of the reclamation.
- I Given potential hazard to life issue, the Existing Sham Shui Kok Chlorine Transshipment Dock may also impact the development potential of the reclamation site.



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Civil Engineering and Development Department

Agreement No. 9/2011 Increasing Land Supply by Reclamation and Rock Cavern Development cum Public Engagement - Feasibility Study

Opportunities and Constraints for Siu Ho Wan

1: 15000

217499 Fig 8

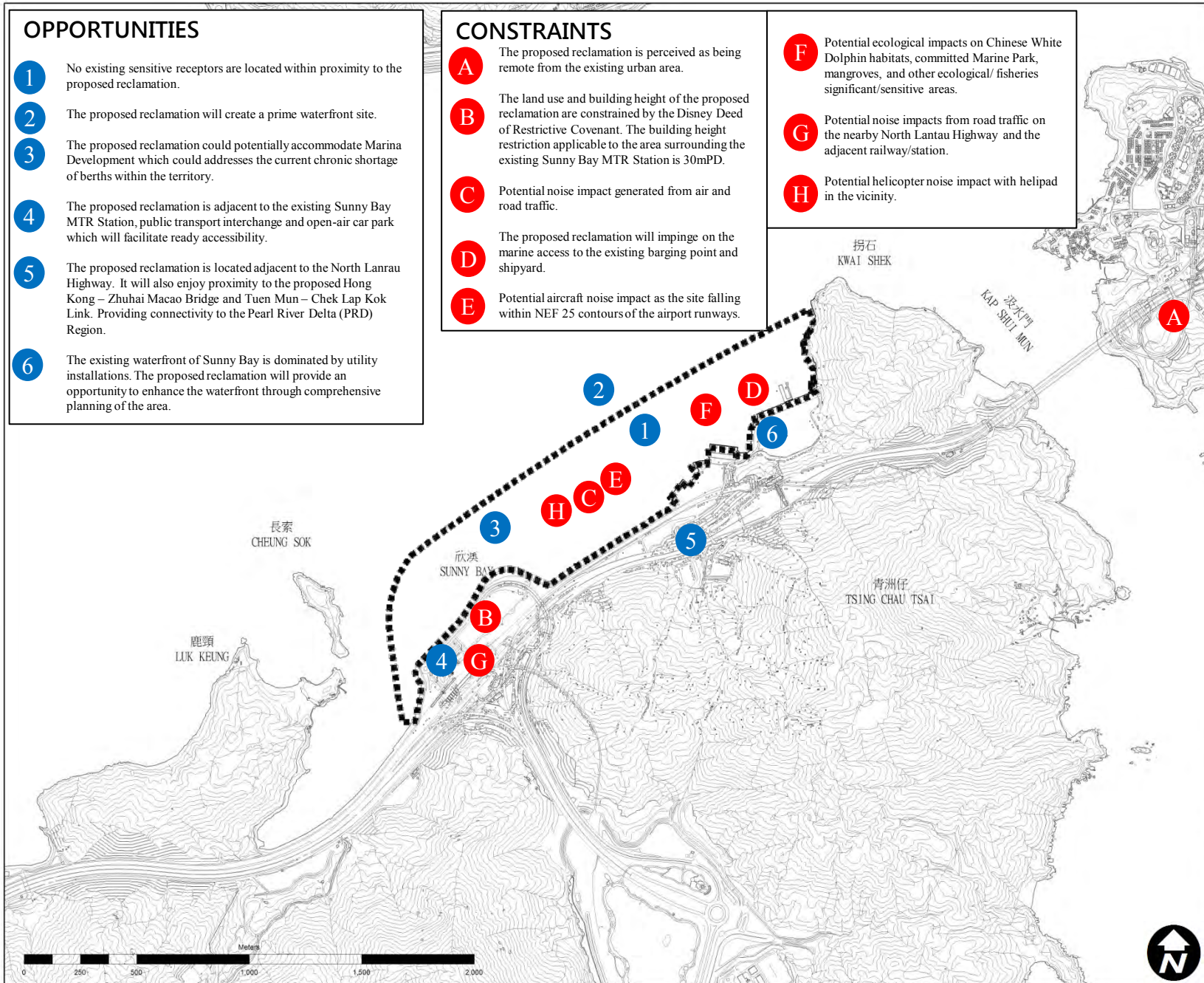
P1

OPPORTUNITIES

- 1 No existing sensitive receptors are located within proximity to the proposed reclamation.
- 2 The proposed reclamation will create a prime waterfront site.
- 3 The proposed reclamation could potentially accommodate Marina Development which could address the current chronic shortage of berths within the territory.
- 4 The proposed reclamation is adjacent to the existing Sunny Bay MTR Station, public transport interchange and open-air car park which will facilitate ready accessibility.
- 5 The proposed reclamation is located adjacent to the North Lanau Highway. It will also enjoy proximity to the proposed Hong Kong – Zhuhai Macao Bridge and Tuen Mun – Chek Lap Kok Link. Providing connectivity to the Pearl River Delta (PRD) Region.
- 6 The existing waterfront of Sunny Bay is dominated by utility installations. The proposed reclamation will provide an opportunity to enhance the waterfront through comprehensive planning of the area.

CONSTRAINTS

- A The proposed reclamation is perceived as being remote from the existing urban area.
- B The land use and building height of the proposed reclamation are constrained by the Disney Deed of Restrictive Covenant. The building height restriction applicable to the area surrounding the existing Sunny Bay MTR Station is 30mPD.
- C Potential noise impact generated from air and road traffic.
- D The proposed reclamation will impinge on the marine access to the existing barging point and shipyard.
- E Potential aircraft noise impact as the site falling within NEF 25 contours of the airport runways.
- F Potential ecological impacts on Chinese White Dolphin habitats, committed Marine Park, mangroves, and other ecological/ fisheries significant/sensitive areas.
- G Potential noise impacts from road traffic on the nearby North Lantau Highway and the adjacent railway/station.
- H Potential helicopter noise impact with helipad in the vicinity.



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Opportunities and Constraints for Sunny Bay

1:15000

217499 **Fig 9** P1



OPPORTUNITIES

- 1 The extent of the proposed reclamation can provide a large solution space that can be significantly utilized for residential development if the nearby industrial users are relocated.
- 2 The proposed reclamation enjoys good accessibility provided by the strategic Route No.8 that is located within closed proximity to the proposed area of land formation.
- 3 The proposed reclamation will generate prime waterfront sites suitable for residential development if the nearby industrial users are relocated.
- 4 Whilst the area is currently occupied by a number of NIMBY/industrial uses /facilities, the proposed reclamation will provide an opportunity for comprehensive planning of the area.
- 5 The proposed reclamation is close to existing high density residential areas and public transport.
- 6 To create a logistic node if developed as Container Terminal 10.

CONSTRAINTS

- A The proposed reclamation is adjacent to five existing oil depots which are Potentially Hazardous Installations (PHI) and are associated with Consultation Zones of 1,000m in radius. If these PHIs are not removed, the development potential and land use flexibility of the proposed reclamation will be severely compromised due to hazard to life issues.
- B The proposed reclamation will impinge on the marine access of the existing oil depots and shipyards.
- C Upgrading of the existing roads will be required to service the proposed reclamation and its future development.
- D The site has been examined for the development of the proposed Container Terminal 10. The development of the proposed Container Terminal 10 will affect the reclamation proposal.
- E The eastern extent of the proposed reclamation will have an interface with the existing Container Terminal 9 and relevant logistics related uses which are not considered compatible with residential developments. Mitigation measures will be required.
- F Potential noise impact and vehicular emission from adjacent road network.
- G Potential water quality impact on the dispersion of Harbour Area Treatment Scheme (HATS) sewage outfall discharge.
- H The proposed reclamation site is currently close to several dockyards, waste facilities and industrial uses. It may cause land use interfacing issues.
- I Potential emission from marine traffic along Ma Wan Channel.
- J Land use interfacing issues with adjacent industrial facilities/uses.

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Opportunities and Constraints for
Southwest Tsing Yi

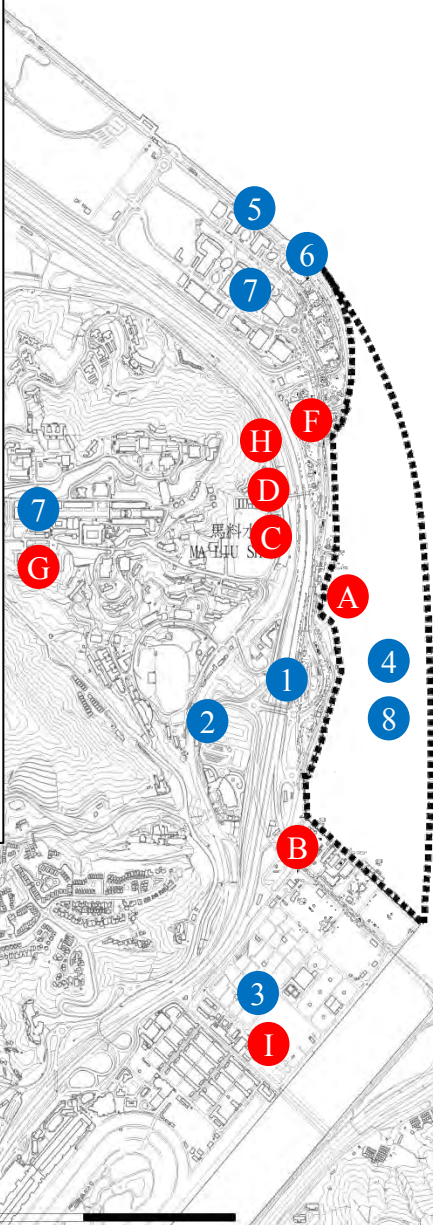
Scale 1:15000

217499 **Fig 10**

P1

OPPORTUNITIES

- 1 The proposed reclamation is close to Shatin New Town and enjoys good accessibility provided by the existing Strategic Route No.9.
- 2 The proposed reclamation lies within proximity to the existing public transportation network. An existing Public Transport Interchange is located adjacent to the existing University Station.
- 3 The proposal of relocating the Shatin STW into cavern could avoid/reduce its potential land use interfacing issues with the proposed reclamation developments.
- 4 The proposed reclamation and future development upon it will enjoy extensive frontage to Sha Tin Hoi and Shing Mun River.
- 5 Located within proximity to high quality waterfront open space provided by the existing Pak Shek Kok Promenade.
- 6 The proposed reclamation is adjacent to well-established cycle path providing connections to Tai Wai to the south and Tai Po to the north.
- 7 Given the proximity with the CUHK and Hong Kong Science Park, the proposed reclamation will provide an opportunity space for the extensions of CUHK/HK Science Park.
- 8 The proposed reclamation can provide land suitable for residential development in Sha Tin New Town which benefit from the upcoming Shatin to Central Link.



CONSTRAINTS

- A The provisioning of the existing developments with marine access will be required. (e.g. the Water Sport Centre of CUHK, the Marine Outer Waters District Headquarters and Marine North Division, the Ma Liu Shui Ferry Pier, etc.)
- B Given potential helicopter noise issue, the relocation of the existing helipad associated with the Marine Police Outer Waters District HQs cum Marine Police North Divisional HQs will be needed.
- C Potential traffic noise impact from the adjacent Tolo Highway and Tate's Cairn Highway.
- D Potential air quality impact generated by the traffic at the adjacent Tolo Highway and Tate's Cairn Highway.
- E The potential visual impact generated by the proposed reclamation may receive objections from Ma On Shan residents.
- F The existing road network may need to be upgraded to sustain the proposed reclamation and future development upon it.
- G Potential social impact on CUHK due to the proposed reclamation.
- H Potential noise impact to the proposed reclamation site due to the adjacent railway.
- I Potential odour issue from the adjacent Sha Tin STW requiring comprehensive development of the reclamation proposal with the STW site which is proposed for relocation into cavern.

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Opportunities and Constraints for Ma Liu Shui

1:15000

Fig 11

217 699

P1

OPPORTUNITIES

- 1 Whilst Lung Kwu Tan is currently occupied by a number of NIMBY/industrial uses /facilities , the proposed sizable reclamation will provide an opportunity for land use within the area.
- 2 The proposed reclamation will provide an opportunity to introduce development that will build a positive image for Lung Kwu Tan as opposed to the existing NIMBY/industrial uses /facilities for which the area is currently known.
- 3 The existing Lung Kwu Tan Beach suffers from erosion. The proposed reclamation provides an opportunity to reconfigure and improve the amenity of the beach by constructing an artificial beach in association with the land formation.
- 4 Lung Kwu Tan is located within the Northwest New Territories (NWNT) where the strategic Hung Shui Kiu New Development Area is located. The NWNT enjoys close proximity to the development across the border. The development of Lung Kwu Tan could provide a positive synergy with development on both sides of the boundary.

CONSTRAINTS

- A The proposed reclamation is located amongst a number of NIMBY/industrial uses /facilities , e.g. power stations, cement plant, landfill, open storage, steel mill, aviation fuel farm, different waste facilities, etc., causing land use interfacing issues. Appropriate mitigation measures will be required to mitigate their potential impacts to future uses on the reclamation.
- B A number of recognised villages are located within Lung Kwu Tan. Proposed reclamation abuts existing residential development and will have potential social impact.
- C The existing residential developments in Lung Kwu Tan are predominantly low density developments. The future developments upon the proposed reclamation will have to be carefully considered to minimize their potential impact on the existing developments.
- D Lung Kwu Tan is currently connected to the urban area via Lung Kwu Tan Road which has limited capacity. This will need to be upgraded to support the proposed reclamation and future development upon it.
- E A proposed columbarium development is intended to be located at Tsang Tsui. This may have potential traffic impact to Lung Kwu Tan and the proposed reclamation.
- F The proposed reclamation will have potential impact on the natural coastline of Lung Kwu Tan.
- G The existing Chinese White Dolphin Lookout is located on the natural headland which has direct frontage to the sea. Reclamation impinging the waterfrontage will require the reprovisioning of the lookout. Potential adverse impact on ecological important habitat, i.e. butterflies and horseshoe crabs.
- H Potential Ecological impact on Chinese White Dolphin habitats, Sha Chau & Lung Kwu Chau Marine Park and SSSIs at Lung Kwu Chau, Tree Island & Sha Chau, and other ecological sensitive areas, e.g. coral areas.
- I Potential Road traffic noise impact and vehicular emission from the nearby road networks.

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