

Proposed 11kV Submarine Cables Replacement Connecting Liu Ko Ngam and Pak Sha Tau Tsui at Kat O

4th White-bellied Sea Eagle Impact Monitoring Survey Report

22 January 2016

Environmental Resources Management

16/F Berkshire House
25 Westlands Road
Quarry Bay, Hong Kong
Telephone 2271 3000
Facsimile 2723 5660

www.erm.com

Proposed 11kV Submarine Cables Replacement Connecting Liu Ko Ngam and Pak Sha Tau Tsui at Kat O

Environmental Resources Management

16/F Berkshire House
25 Westlands Road
Quarry Bay, Hong Kong
Telephone: (852) 2271 3000
Facsimile: (852) 2723 5660
E-mail: post.hk@erm.com
http://www.erm.com

4th White-bellied Sea Eagles Impact Monitoring Survey Report

Document Code: 0259952 _4th WBSE impact monitoring_v0.doc

Client:		Project No:			
CLP Power Hong Kong Limited (CLP)		0259952			
Summary:		Date:			
<p>This document presents the 4th impact monitoring for White-bellied Sea Eagles for the proposed 11kV Submarine Cables Replacement Connecting Liu Ko Ngam and Pak Sha Tau Tsui at Kat O.</p>		22 January 2016			
		Approved by:			
		Terence Fong Partner			
v0	4 th White-bellied Sea Eagles Impact Monitoring Survey Report	EL	FZ	TF	22/1/16
Revision	Description	By	Checked	Approved	Date
<p>This report has been prepared by Environmental Resources Management the trading name of 'ERM Hong-Kong, Limited', with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.</p> <p>We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.</p> <p>This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.</p>		<p>Distribution</p> <p><input type="checkbox"/> Internal</p> <p><input checked="" type="checkbox"/> Public</p> <p><input type="checkbox"/> Confidential</p>			



**Proposed 11kV Submarine Cables Replacement Connecting Liu Ko Ngam
and Pak Sha Tau Tsui at Kat O - Environmental Monitoring & Audit
Environmental Certification Sheet
EP-461/2013**

Reference Document/Plan

Document/ Plan -to be-Certified/ Verified:	Fourth Weekly White-bellied Sea Eagle Impact Monitoring Survey Report
Date of Report:	22 January 2016
Date prepared by Environmental Team:	22 January 2016
Date received by IC:	22 January 2016

Reference EP Requirement

EP Condition:	Condition No. 2.3
Content:	<i>White-bellied Sea Eagle Monitoring</i>
2.3	A monitoring programme on the White-bellies Sea Eagles shall be submitted to the Director for approval no later than 3 months before commencement of the Project. The applicant shall confirm that no breeding or nesting activities of WBSE at or in the vicinity of the cable landing sites and locations of the proposed electricity poles before commencement of works. During the works period, the monitoring works shall be continued to address and minimize any disturbance impacts found.

IC Verification

I hereby verify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-461/2013.

Terence Fong,
Independent Checker

Date: 22 January 2016

CONTENTS

1	INTRODUCTION	1
1.1	BACKGROUND	1
1.2	WHITE-BELLIED SEA EAGLE MONITORING REQUIREMENTS OF THE PROJECT	1
1.3	PURPOSE OF THE 1ST IMPACT MONITORING SURVEY REPORT FOR THE WBSE	2
2	WBSE MONITORING METHODOLOGY	3
3	FINDINGS OF THE IMPACT MONITORING	4

1.1

BACKGROUND

CLP Power Hong Kong Limited (CLP) is planning to enhance the security of power supply to Kat O Island (Crooked Island). At present, there is only one set of 11 kV submarine cable circuit connecting between Liu Ko Ngam and Kat O. The existing 11 kV submarine cable is, however, more than 30 years old and deteriorating. This will consequently limit the continuous supply of the electricity in the future to Kat O Island. CLP is therefore planning to replace the existing 11 kV submarine cable connecting Liu Ko Ngam to Pak Sha Tau Tsui, Kat O, to ensure continuous electricity supply on the island (*Figure 1.1*).

The Project involves the installation of an 11kV cable circuit consisting of two individual cables, with an intended burial depth up to 5 m for the submarine cable section and about 1 m for the land section. The two submarine cables (except the shore end sections which will be of only about 1 m separation and joining into a single cable trench at each landing site) will be 30 m away from each other and running parallel along the alignment. In areas (especially near the landing site) where the cable burial depth does not meet the requirements due to seabed geotechnical constraints, a protective cover such as a concrete slab will be adopted. The total length of the proposed cable alignment is approximately 880 m.

The cable laying process will only require minor works within the marine environment. Only small scale construction works are required onshore at each of the cable landing sites, i.e. Liu Ko Ngam and Pak Sha Tau Tsui, for connecting the submarine cable with existing overhead land cable systems.

1.2

WHITE-BELLIED SEA EAGLE MONITORING REQUIREMENTS OF THE PROJECT

Environmental assessment has been carried out as part of the Project Profile required under the *Environmental Impact Assessment Ordinance (EIAO)*. An Environmental Permit (EP) has been issued by Environmental Protection Department (EPD) on 27 Aug 2013 for the Project (EP-461/2013) ⁽¹⁾, which links directly to the Environmental Monitoring and Audit (EM&A) programme as well as the mitigation measures set out and agreed in the approved Project Profile (PP-489/2013) ⁽²⁾.

According to Agriculture, Fisheries and Conservation Department (AFCD), there was one pair of White-bellies Sea Eagles (WBSE) and a nesting site recorded at the south-western side of Yeung Chau, in the vicinity of the Project Site, in 2008/9 (Hong Kong Biodiversity Issue No. 18 February 2010) as

(1) Environmental Permit No. EP-461/2013. Available at :
<http://www.epd.gov.hk/eia/register/permit/latest/ep4612013.htm>

(2) ERM (2013) Replacement of the Existing 11KV Submarine Cable Circuit Connecting Liu Ko Ngam and Pak Sha Tau Tsui at Kat O – Project Profile submitted for Applications for Permission to Apply Directly for an Environmental Permit (PP-489/2013). Available at
<http://www.epd.gov.hk/eia/register/profile/latest/dir229/dir229.pdf>

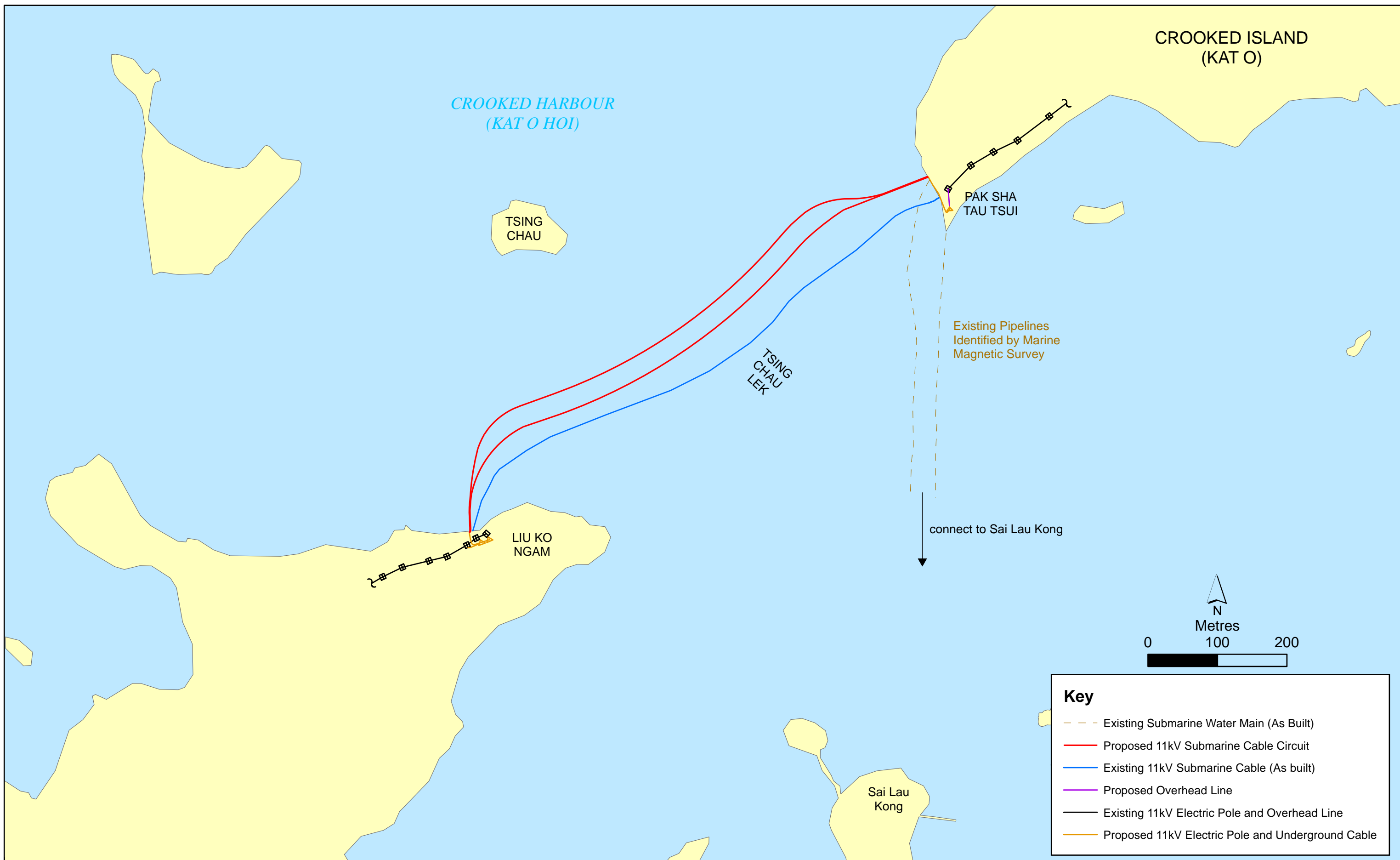


Figure 1.1

Alignment of the Proposed 11kV Submarine Cable Circuit from Liu Ko Ngam to Pak Sha Tau Tsui

well as in 2011/12 and 2012/13 (AFCD comments on Project Profile, dated 6 and 11 June 2013) and a recent study showed this species has a long post-fledging period (up to about May) and a wide flight range.

EP Condition 2.3 states “A monitoring programme on the White-bellies Sea Eagles shall be submitted to the Director for approval no later than 3 months before commencement of the Project. The applicant shall confirm that no breeding or nesting activities of WBSE at or in the vicinity of the cable landing sites and locations of the proposed electricity poles before commencement of works. During the works period, the monitoring works shall be continued to address and minimize any disturbance impacts found.”

The *Monitoring Programme for White-bellied Sea Eagles* (“Monitoring Programme”) was submitted and approved by the Director of Environmental Protection (DEP) on 12 August 2015. The baseline monitoring conducted on 7th November 2014, 13th, 26th March 2015, 28th and 30th October 2015 confirmed there were no breeding or nesting activities of WBSE at, or in the vicinity of, the cable landing sites and locations of the proposed electricity poles. A WBSE was however observed flying above Cheung Pai Tau in November 2014, another one flying at the north of Pak Sha Tau in March 2015 and two WBSEs flying above Wong Kok Tau in October 2015, as recorded in the Monitoring Programme. As proposed in the Monitoring Programme, WBSE impact monitoring would be conducted weekly after commencement of works.

1.3

PURPOSE OF THE 4TH IMPACT MONITORING SURVEY REPORT FOR THE WBSE

This Impact Monitoring Survey Report for the WBSE is prepared in accordance with the EP Condition 2.3 (EP-461/2013) to present the findings of the WBSE monitoring conducted on 18th January 2016.

The 4th WBSE impact monitoring survey was conducted on 18th January 2016, after commencement of works. The monitoring survey was conducted along transects by observation on vessel and on land at the two landing sites at Liu Ko Ngam and Pak Sha Tau Tsui. Equipment used for the monitoring included binoculars with 10x magnification. All the activities of the White-bellied Sea Eagles, including breeding, incubation, feeding, perching/roosting, preening, soaring, flying and territorial guarding, observed within the Monitoring Area and along the transects (*Figures 2.1-2.3*) were recorded, including time spent for each of the activities. Active search of nest of WBSE at the two landing sites was conducted during the survey. The flying paths and locations of the WBSE were recorded.

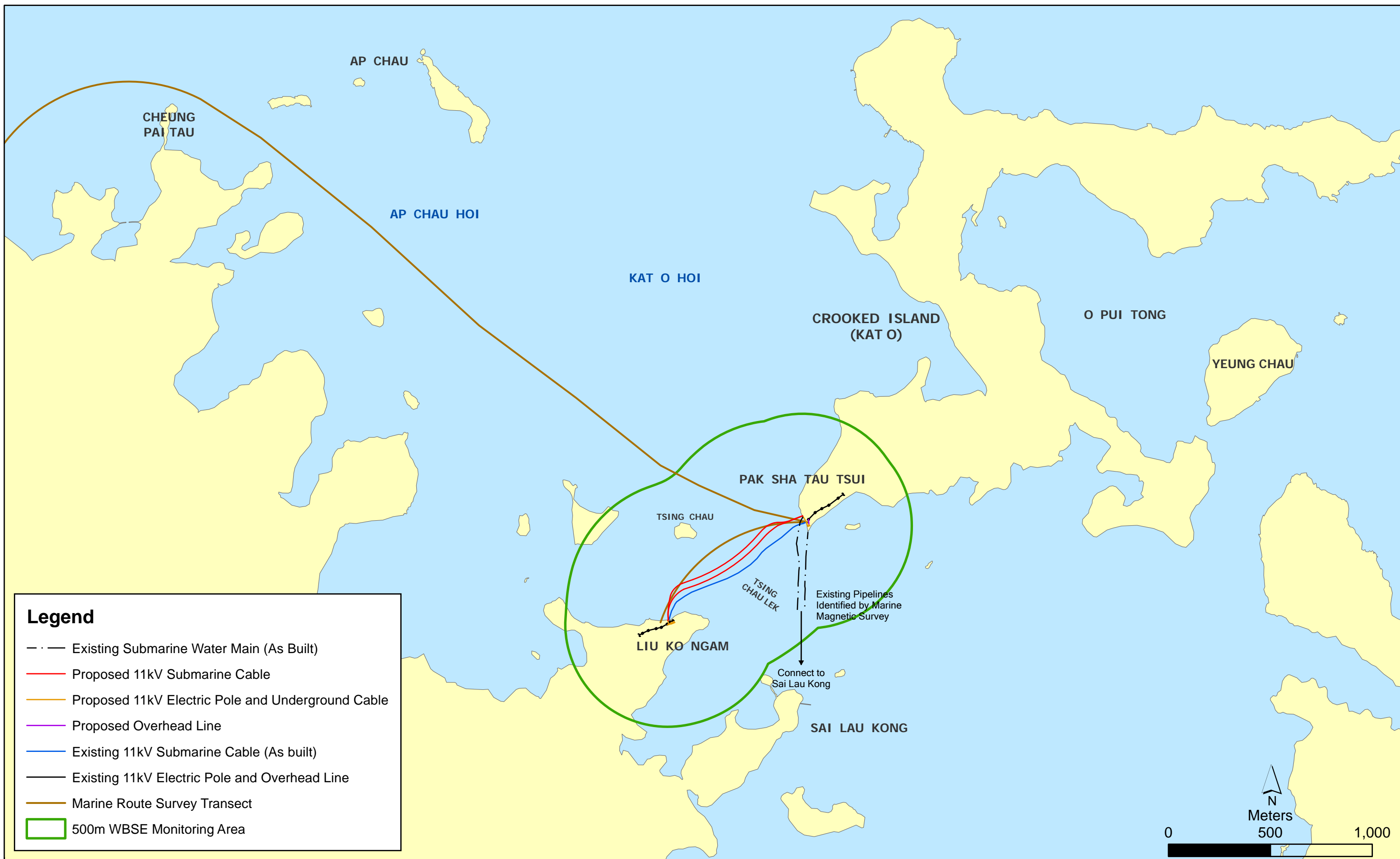


Figure 2.1

WBSE Monitoring Area for the Proposed 11kV Submarine Cable Circuit from Liu Ko Ngam to Pak Sha Tau Tsui



Coastal Vegetation



Shrubby Grassland



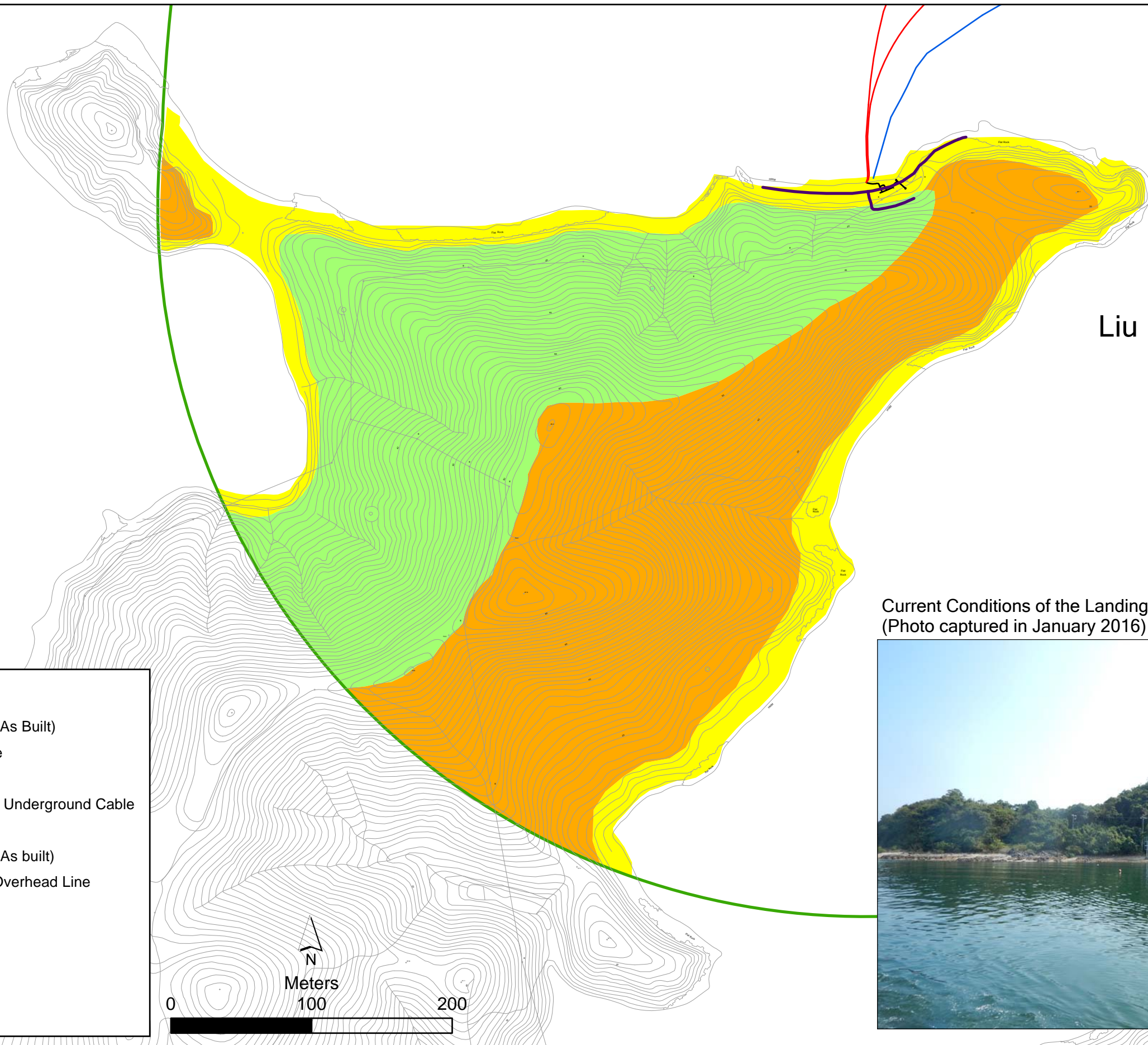
Young Woodland

Legend

- · — Existing Submarine Water Main (As Built)
- Proposed 11kV Submarine Cable
- △ Survey Transect
- Proposed 11kV Electric Pole and Underground Cable
- Proposed Overhead Line
- Existing 11kV Submarine Cable (As built)
- Existing 11kV Electric Pole and Overhead Line
- 500m WBSE Monitoring Area

Habitat

- Coastal Vegetation
- Shrubby Grassland
- Young Woodland



Liu Ko Ngam

Current Conditions of the Landing Site at Liu Ko Ngam
(Photo captured in January 2016)



Figure 2.2

WBSE Monitoring Area at Liu Ko Ngam Landing Point



Current Conditions of the Landing Site at Pak Sha Tau Tsui
(Photo captured in January 2016)

Pak Sha Tau Tsui

Legend

- Existing Submarine Water Main (As Built)
- Proposed 11kV Submarine Cable
- Proposed 11kV Electric Pole and Underground Cable
- Proposed Overhead Line
- Existing 11kV Submarine Cable (As built)
- Survey Transect
- Existing 11kV Electric Pole and Overhead Line
- 500m WBSE Monitoring Area

Habitat

- Coastal Vegetation
- Shrubland



Coastal Vegetation



Shrubland

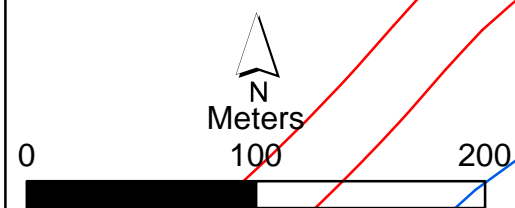


Figure 2.3

WBSE Monitoring Area at Pak Sha Tau Tsui Landing Point

FINDINGS OF THE IMPACT MONITORING

The 4th WBSE impact monitoring survey was conducted on 18th January 2016. The findings are presented below:

- It is confirmed that there is no breeding or nesting activities of WBSE at or in the vicinity of the cable landing sites and locations of the proposed electricity poles; and
- No WBSE was observed within the Monitoring Area and along the transects on 18th January 2016.

ERM has over 100 offices
Across the following
countries worldwide

Argentina	Malaysia
Australia	Mexico
Azerbaijan	The Netherlands
Belgium	Peru
Brazil	Poland
Canada	Portugal
Chile	Puerto Rico
China	Russia
Colombia	Singapore
Ecuador	South Africa
France	Spain
Germany	Sweden
Hong Kong	Taiwan
Hungary	Thailand
India	UK
Indonesia	US
Ireland	Vietnam
Italy	Venezuela
Japan	
Kazakhstan	
Korea	

ERM's Hong Kong Office
16/F, Berkshire House
25 Westlands Road
Quarry Bay, Hong Kong

T: 2271 3000
F: 2723 5660

www.erm.com