



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

*9th White-bellied Sea Eagle Impact Monitoring
Survey Report*

15 March 2016

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9th White-bellied Sea Eagles Impact Monitoring Survey Report

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CLP Power Hong Kong Limited (CLP)		0259952			
Summary:		Date:			
This document presents the 9 th 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.		15 March 2016			
		Approved by:			
					
		<i>Terence Fong</i> Partner			
v0	9 th White-bellied Sea Eagles Impact Monitoring Survey Report	ER	FZ	TF	15/03/16
Revision	Description	By	Checked	Approved	Date
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**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:	Ninth Weekly White-bellied Sea Eagle Impact Monitoring Survey Report
Date of Report:	15 March 2016
Date prepared by Environmental Team:	15 March 2016
Date received by IC:	15 March 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: 15 March 2016

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1 INTRODUCTION

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) was issued by Environmental Protection Department (EPD) on 27st August 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>

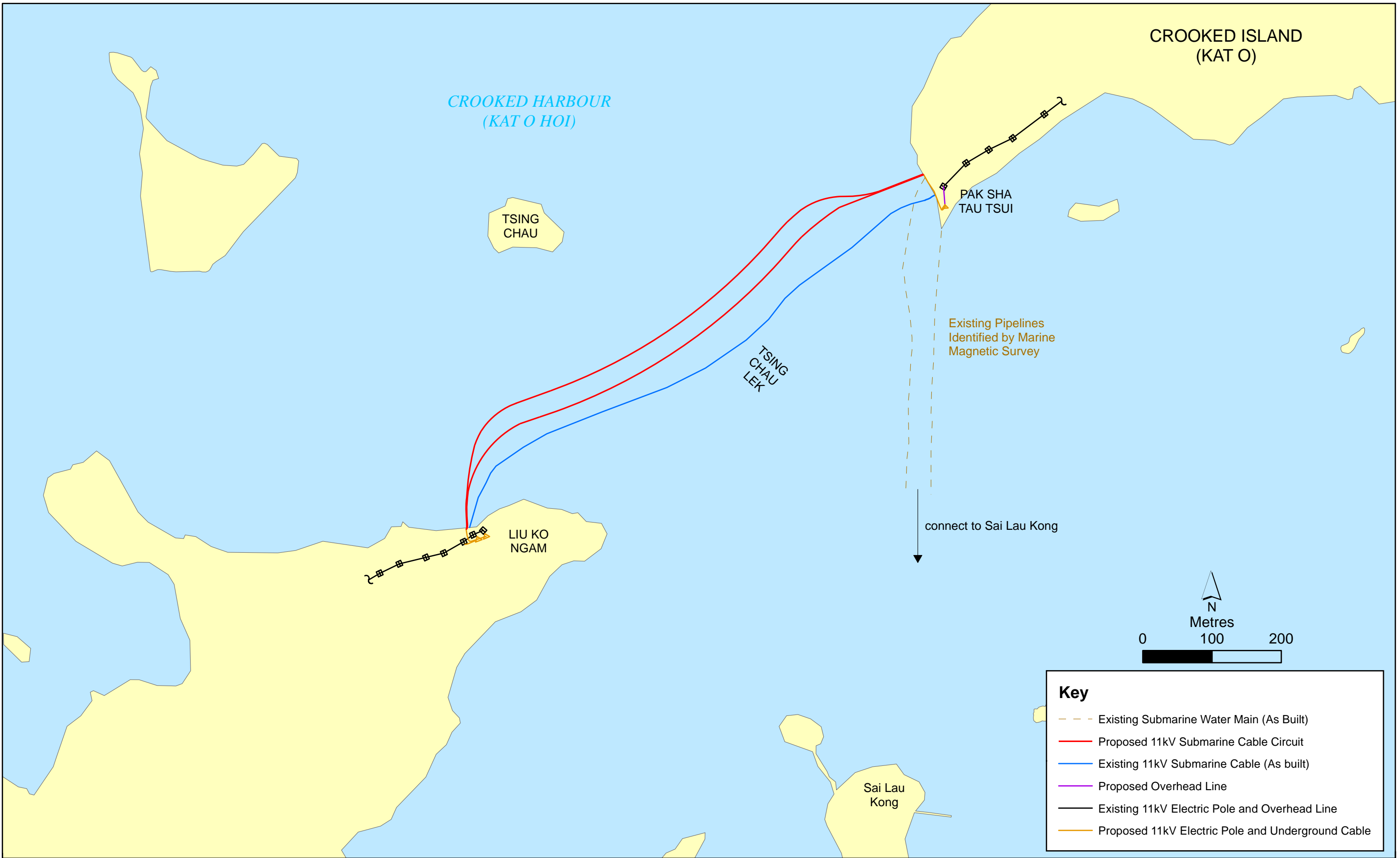


Figure 1.1

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 9TH 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 during the reporting period from 7th March to 13th March 2016.

The 9th WBSE impact monitoring survey was conducted on 11th March 2016. 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 any WBSE observed were recorded.



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)
- Existing 11kV Electric Pole and Overhead Line
- Marine Route Survey Transect
- 500m WBSE Monitoring Area

Figure 2.1

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

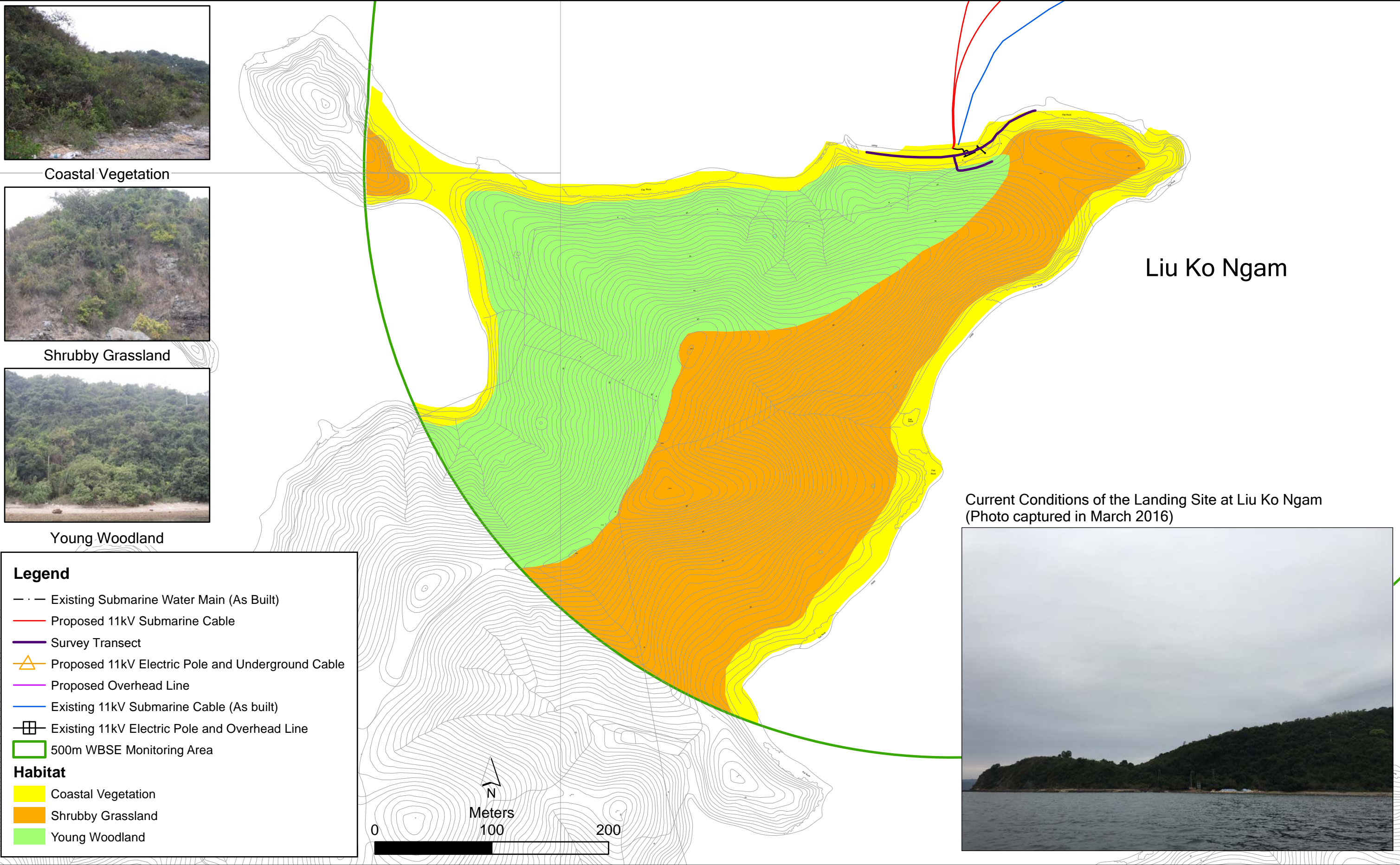


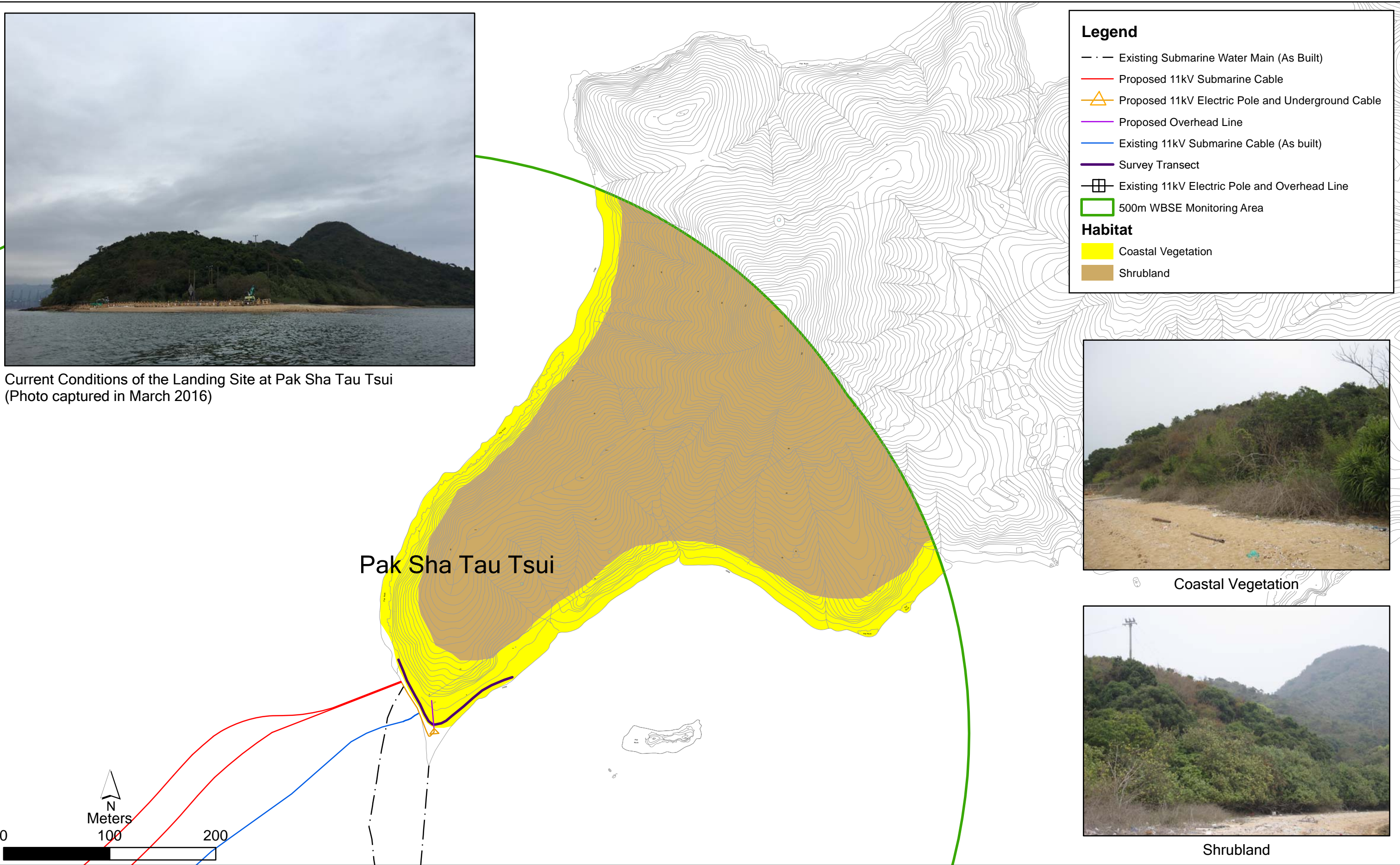
Figure 2.2

WBSE Monitoring Area at Liu Ko Ngam Landing Point

File: T:\GIS\CONTRACT\0259952\Mxd\0259952_Habitat_Liu_Ko_Ngam.mxd
Date: 14/3/2016



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



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

The 9th WBSE impact monitoring survey was conducted on 11th March 2016. The findings are presented below and shown in *Figure 3.1*:

- 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
- Three separate sightings of WBSE were observed within the Monitoring Area and along the transects on 11th March 2016, between 7:25am to 8:06am. Two of the sightings observed the WBSE flying in a north to north easterly direction and one of the sightings observed the WBSE actively foraging in waters near Tsing Chau Lek (also travelling north-north east).

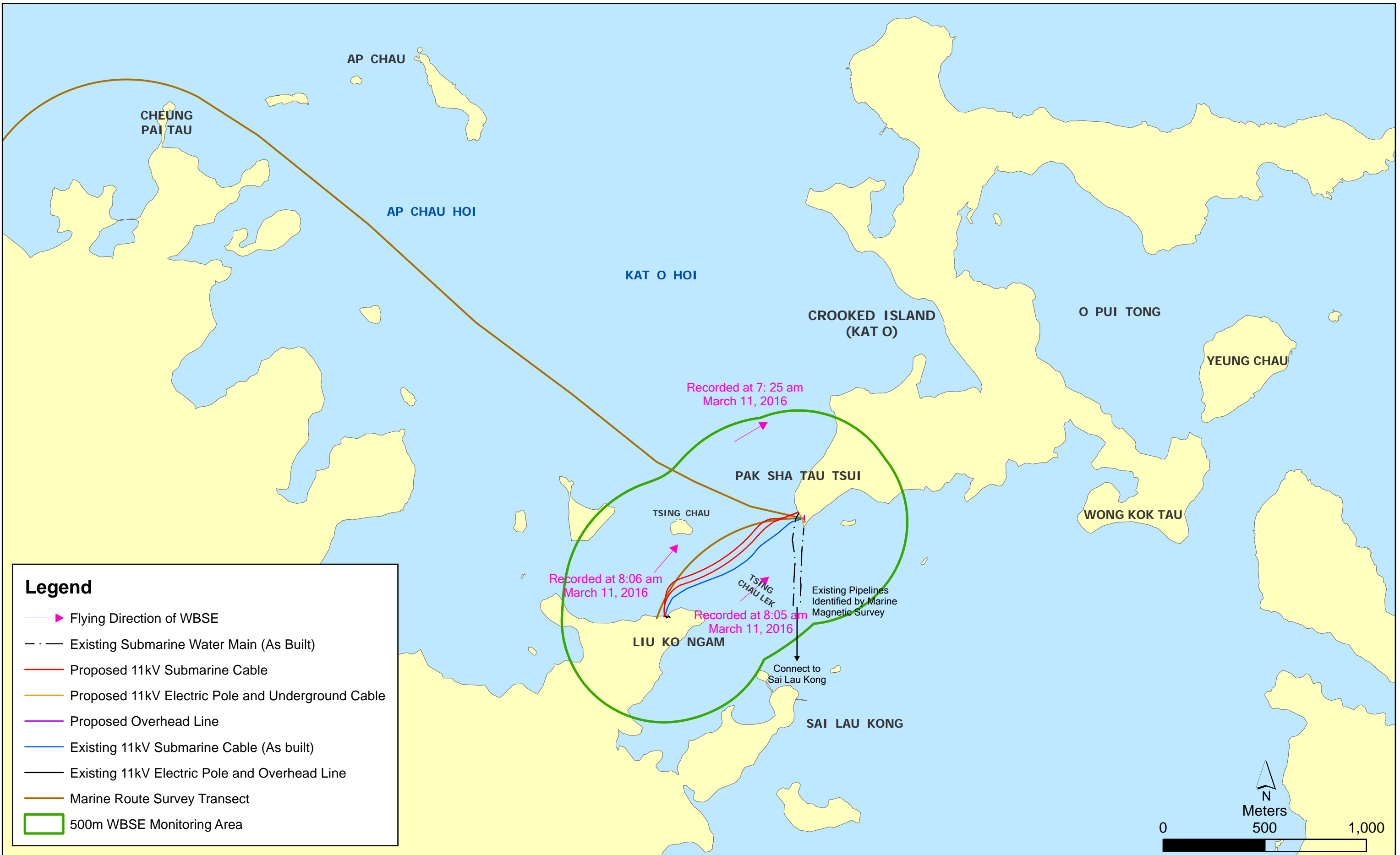


Figure 3.1

Findings on 9th WBSE Impact Monitoring Survey

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