

## **MTR Corporation Limited**

## Consultancy Agreement No. C8012

### **Ecological Monitoring Plan**

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The information contained in this report is, to the best of our knowledge, correct at the time of printing. The interpretation and recommendations in the report are based on our experience, using reasonable professional skill and judgment, and based upon the information that was available to us. These interpretations and recommendations are not necessarily relevant to any aspect outside the restricted requirements of our brief. This report has been prepared for the sole and specific use of our client and AECOM Environment accepts no responsibility for its use by others.

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MTR Corporation Ltd., 8/F MTR Fo Tan Railway House, No. 9, Lok King Street, Fo Tan, Shatin, N.T.

> 26 February 2010 By Post and email

Attn: Dr. Glenn Frommer

Dear Sir

Express Rail Link
Consultancy Agreement No. C806
Independent Environmental Checker (IEC)
Environmental Permit No.: EP-349/2009
Ecological Monitoring Plan

We refer to the Ecological Monitoring Plan prepared as per the requirement stipulated in the Project EM&A Manual and submitted to us on 26 February 2010. We confirm we have no comment.

Yours faithfully, for MOTT MACDONALD HONG KONG LIMITED

Dr. Anne Kerr

Independent Environmental Checker (IEC)

## MTR Corporation Limited

# HONG KONG SECTION OF GUANGZHOU -SHENZHEN - HONG KONG EXPRESS RAIL LINK (No. EP-349/2009)

Ecological Monitoring Plan

Certified 1	by: Wenn frommer
	Environmental Team Leader
Dota:	2 6 FEB 2010

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#### 1 INTRODUCTION

#### **Project Background**

- The Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (XRL) is planned to connect Hong Kong, Shenzhen and Guangzhou. The Hong Kong Section of XRL (hereinafter referred to "the Project") runs as an underground railway in dedicated tunnels from the boundary at Huanggang to West Kowloon Terminus (WKT). An overview of the Project alignment and the associated works areas is provided in Figure Nos. NOL/ERL/300/C/XRL/ENS/M50/001 to 003.
- 1.2 Key elements of the Project are as follows:
  - Approximately 26km of underground railway running from West Kowloon to the boundary at Huanggang;
  - A terminus in West Kowloon, and its associated building elements such as ventilation facilities, public transport interchange, traction sub-station, and seawater cooling facility;
  - Seven tunnel ventilation buildings at Mai Po, Ngau Tam Mei, Pat Heung, Shing Mun, Kwai Chung, Nam Cheong and Mong Kok West; and an Emergency Access Point (EAP) at Tai Kong Po;
  - Stabling sidings and maintenance facilities located at Shek Kong (Shek Kong Stabling Sidings (SSS)) to provide for train stabling, minor maintenance and cleaning;
  - An emergency rescue station (ERS) located next to the SSS; and
  - Supporting works areas, access roads, barging facilities, magazines and nursery sites to support the construction of the Project.
- 1.3 Apart from the key elements above, supporting works areas, access roads, barging facilities, magazines and nursery sites will be required to support the construction of the Project.
- 1.4 The proposed construction is tentatively scheduled to commence in late 2009, for completion in 2015.
- 1.5 An Environmental Impact Assessment Report (hereafter refers to as "the EIA Report") was prepared in accordance with the Study Brief No. ESB-197/2008 and subsequently approved under the Environmental Impact Assessment Ordinance (EIAO) in October 2009. An Environmental Permit (EP) EP-349/2009 was issued in October 2009.

#### Purpose of this Ecological Monitoring Plan

- As stipulated in the Environmental Monitoring and Audit Manual (EM&A Manual) of the EIA Report, ecological impact monitoring focusing on habitats and species of conservation interest should be conducted during the construction phase at the MPV, TPP, SSS / ERS, PHV, and TUW sites where a number of avifauna of conservation interest (e.g. overwintering bird, Greater Painted-snipe) and areas of conservation interest (e.g. country parks, conservation areas, and wetlands) were recorded. An Ecological Monitoring Plan outlining the implementation details of the ecological impact monitoring programme is required to be submitted for Environmental Protection Department (EPD) approval before the commencement of construction activities.
- 1.7 This Plan outlines the ecological impact monitoring programme to be conducted during construction phase of the Project.

#### 2 MONITORING REQUIREMENT

2.1 The requirement for ecological impact monitoring is presented below.

#### **Ecological Impact Monitoring**

- 2.2 Mitigation measures have been proposed under this Project to control any potential indirect impact to the avifauna utilizing areas of conservation interest which are sensitive to disturbance. Ecological impact monitoring should therefore be conducted during construction phase to monitor the effectiveness of proposed mitigation measures and detect any unpredicted indirect ecological impacts arising from the proposed Project. Remedial actions can then be recommended, where appropriate, based on the impact monitoring results.
- 2.3 Ecological impact monitoring for avifauna focusing on habitats and species of conservation interest will be conducted during the construction phase at the MPV, TPP, SSS / ERS, PHV, and TUW sites where a number of avifauna of conservation interest and areas of conservation interest were recorded.
- Avifaunal communities will be surveyed quantitatively by transect count or / and point count method covering the vicinity of the abovementioned works areas, where appropriate. Birds heard or seen within the survey area will be identified to species and counted. The nature of construction works within works area conducting during each impact monitoring visit will also be recorded. Weather condition and other noticeable activities occur within or in the vicinity of the survey areas will be recorded such as ongoing routine drainage channel maintenance works, activities in fishponds, farming activities, significant changes in land use and habitat condition, and crops in agricultural fields, etc. The ecological impact monitoring will be undertaken by qualified ecologist(s) with university degree in ecology or relevant disciplines, and at least 5-years relevant post qualification project experience. The impact monitoring results will be compared quantitatively to the baseline data collected before construction (such as the baseline data collected under the EIA study, etc.). Should any unpredicted indirect ecological impacts arising from the proposed Project be detected, remedial measures will be developed and implemented by the Contractor. The location, frequency and duration of construction impact monitoring are provided in Table 2.1 and Figure 1 to 6.

Table 2.1 Requirement of Ecological Impact Monitoring for Avifauna

Works Area	Survey Site	Monitoring Location	Survey Method	Monitoring Frequency	Monitoring Duration
MPV	MPV-1	Fishponds in Wetland Conservation Area (WCA) within 500 m from the boundary of MPV works area	Point count: bird species seen or heard within active and abandoned fishponds identified and counted from the fixed points up to a distance where birds are still detectable within the survey area (refer to Figure 1).  Transect count: bird species seen or heard within active and abandoned fishponds on either sides of the transect identified up to a distance within the survey area (refer to Figure 1).	Monthly	During erection of site hoarding  During construction phase of MPV works area

Works Area		Monitoring Location	Survey Method	Monitoring Frequency	Monitoring Duration
Access road leading to TPP	TPP-1	The whole alignment of drainage channel KT5	Point count: bird species seen or heard within the KT5 drainage channel identified and counted from the fixed points up to a distance where birds are still detectable within the survey area (refer to Figure 3).  Transect count: bird species seen or heard within the KT5 drainage channel on either sides of the transect identified up to a distance within the survey area (refer to Figure 3).	Monthly	During erection of site hoarding  During upgrading and operation of access road for construction phase activities
	TPP-2	The section of drainage channel 95CD along the proposed alignment of access upgrading	Point count: bird species seen or heard within the main drainage channel 95CD identified and counted from the fixed points up to a distance where birds are still	Weekly	During erection of site hoarding
-		-	where birds are still detectable within the survey area (refer to Figure 2).  Transect count: bird species seen or heard within the main drainage channel 95CD on either sides of the transect identified up to a distance within the survey area (refer to Figure 2).	Monthly	During upgrading and operation of access road for construction phase activities
	TPP-3	The whole alignment of abandoned meander of conservation interest 43CD-1	Point count: bird species seen or heard within the abandoned meander 43CD-1 identified and counted from the fixed points up to a distance where birds are still	Weekly	During erection of site hoarding
			detectable within the survey area (refer to Figure 2).	Monthly	During upgrading and operation of access road for construction phase activities
Access road leading to SSS / ERS	• SSS-1	<ul> <li>The section of drainage channel 95CD along the proposed alignment of access upgrading</li> </ul>	Point count: bird species seen or heard within the main drainage channel 95CD identified and counted up to a distance where birds are still	Weekly	During erection of site hoarding

Works Area	Survey Site	Monitoring Location	Survey Method	Monitoring Frequency	Monitoring Duration
			detectable within the survey area (refer to Figure 3).  Transect count: bird species seen or heard within the main drainage channel 95CD on either sides of the transect identified up to a distance within the survey area (refer to Figure 3).	Monthly	During upgrading of and operation access road for construction phase activities
	SSS-2a and SSS-2b	<ul> <li>The whole alignment of abandoned meanders of conservation interest 95CD-4 and 95CD-5</li> </ul>	Point count: bird species seen or heard within the abandoned meanders 95CD-4 and 95CD-5 identified and counted from the fixed points up to a distance where birds are	Weekly	During erection of site hoarding
			still detectable within the survey area (refer to Figure 3).	Monthly	During upgrading of and operation access road for construction phase activities
SSS / ERS	• SSS-3	<ul> <li>Agricultural land within 500 m from the boundary of SSS / ERS works area between Shek Kong Road and Kam Sheung Road</li> </ul>	Point count: bird species seen or heard within the active and inactive agricultural area identified and counted from the fixed points up to a distance where birds are still detectable within the survey area (refer to Figure 4).	Monthly	During construction phase of SSS / ERS works area
			Transect count: bird species seen or heard within active and inactive agricultural area on either sides of the transect identified up to a distance within the survey area (refer to <b>Figure 4</b> ).	·	
TUW	● TUW-1	<ul> <li>Agricultural land within 500 m from the boundary of TUW works area to the south of Kam Sheung Road</li> </ul>	Point count: bird species seen or heard within the active and inactive agricultural area identified and counted from the fixed points up to a distance where birds are still detectable within the survey area (refer to Figure 5).	Monthly	During construction phase of TUW works area
			Transect count: bird species seen or heard within active and inactive agricultural area on either		

Works Area	Survey Site	Monitoring Location	Survey Method	Monitoring Frequency	Monitoring Duration
			sides of the transect identified up to a distance within the survey area (refer to <b>Figure 5</b> ).		
	TUW-2 (grouped with PHV-1 due to overlapping of survey area)	Woodland in Conservation Area (CA) within 500 m from the boundary of TUW works area	Point count: bird species seen or heard within the woodland area identified and counted from the fixed points up to a distance where birds are still detectable within the survey area (refer to Figure 6).	Monthly	During construction phase of TUW works area
			Transect count: bird species seen or heard within woodland area along the transects identified up to a distance within the survey area (refer to <b>Figure 6</b> ).		
PHV	PHV-1     (grouped with TUW-2 due to overlapping of survey area)	Woodland in CA within 500 m from the boundary of PHV works area	Point count: bird species seen or heard within the woodland area identified and counted from the fixed points up to a distance where birds are still detectable within the survey area (refer to Figure 6).	Monthly	During construction phase of PHV works area
			Transect count: bird species seen or heard within woodland area along the transects identified up to a distance within the survey area (refer to <b>Figure 6</b> ).		·

#### 3 REPORTING

3.1 The results and findings of ecological impact monitoring will be recorded in Monthly Ecological Monitoring Report. The Ecological Monitoring Report will be prepared and submitted within 10 working days of the end of each reporting month, with the first report due in the month after construction commences.

Figures













