
SHEUNG SHUI TO LOK MA CHAU SPUR LINE

Environmental Committee

Minutes of Meeting No. 24 held at 4:00pm

On Wednesday, 19 December 2012,

at Room 10A, 10/F, MTR Headquarters Building, Telford Plaza, Kowloon Bay

Present:		
Mr. John Allcock	WWF Hong Kong	Member (NGO)
Ms. Karen Barretto	Friends of the Earth (Hong Kong)	Member (NGO)
Dr. Ng Cho-nam	The University of Hong Kong	Member (NGO)
Ms. Janice Choi	Maintenance Manager-Civil	Member (MTR)
Ms. Kenny Yiu	Manager Environmental Engineering	Member (MTR)
Mr. Peter Choi	Environmental Engineer	Member (MTR)
Dr. Michael Leven	Ecological Consultant	Member (consultant)
Ms. Shirley Lam	Ecological Consultant	Member (consultant)
Absent with apology:		
Mr. Michael Kilburn	The Hong Kong Bird Watching Society	Member (NGO)
Dr. Chan Kam Foon	Environmental Engineering Manager	Member (MTR)

Attachments	
Figure 1	Buffer planting between EEA and Clean-up Reedbed
Annex A	Presentation Material of 24 th EC Meeting
Annex B	Hand-out Distributed at Meeting Regarding the Proposed Link between the LMC Loop and the LMC Station under the LMC Loop Project

<u>Item/Description</u>	<u>Action By</u>
1. Welcomed Members to the No. 24 EC meeting.	
Item 1 - <u>Confirmation of minutes of Meeting No. 23</u>	
2. There were no comments on the minutes of Meeting No. 23 and the minutes were confirmed.	Noted
Item 2 - <u>Ecological Enhancement Works and Monitoring - an Update on Management Works and Look Ahead</u>	
<p>3. <i>A Member (consultant)</i> reported on the ecological monitoring and management work undertaken between July and December 2012 at the LMC EEA (detailed in Annex A). It was noted that:</p> <ul style="list-style-type: none"> • All management activities comprised routine management practices such as vegetation management, including grass cutting, weeding, and other micro-habitat management practices, pond drain down, fish stocking, and pest control. • <i>A Member (consultant)</i> noted that sourcing of fish stocking supply as of December 2012 had been acceptable so far and the issue raised during the last EC meeting appeared to have been resolved. • Some queries on the new site boundary fence were raised by <i>EC Members</i>, including the reason for the need of the fence, necessity of providing bulky concrete blocks as base of the fence, control of <i>Mikania</i> along the fence, and management issue regarding the trees on either side of the fence. <i>A Member (consultant)</i> noted that whilst trespass to date was not an issue to the EEA, the FCA was opened in mid-Feb this year, and there was a need to control access. Further, informal & small scale poaching activities was so far the biggest concern. <i>A Member (MTR)</i> noted that the concrete block design was used since no excavation work was allowed under planning. Further, since the concrete blocks were prefabricated, disturbance during the construction of the fence would be minimized. <i>A Member (consultant)</i> acknowledged that <i>Mikania</i> might need to be controlled more frequently. He further noted that management of the trees on either side of the fence would be undertaken though the maintenance of the channels belongs to the Drainage Services Department. • <i>A Member (consultant)</i> noted the ineffectiveness in using lime to raise the pH above the tolerance level of Apple Snail, to which <i>A Member (NGO)</i> questioned if there were known effective means in the removal of this pest. <i>A Member (consultant)</i> responded that apart from natural predators (such as Snail Kite, which is absent in most of the infected range), manual removal during periodic drain-down is known to be the most effective means. <i>A Member (NGO)</i> noted that a study on the effectiveness of using Black Carp to control Apple Snail was being undertaken at selected West Rail Land Parcels. <i>A Member (consultant)</i> noted that the study appeared to be still in progress and findings are yet to be concluded; but noted that he would confirm this from relevant staff. <p><i>[Post-meeting note: the study commenced in 2012 and is anticipated to finish in the summer of 2013. Results should be available by the end of the calendar year.]</i></p> <ul style="list-style-type: none"> • <i>A Member (consultant)</i> reported that despite the lack of durability of the plastic decoys used this year, egrets were beginning to roost on the island, and that the 	<p>Noted</p> <p>Noted</p> <p>Noted</p> <p>Noted</p>

<u>Item/Description</u>	<u>Action By</u>
<p>stakeholders.</p> <p>iv) <u>Bird target (proposed addition):</u> <i>EC Members (NGO)</i> agreed to the proposed addition of these species as target species for the EEA: Eurasian Wigeon, Little Grebe, Black-crowned Night Heron, Intermediate Egret, White-cheeked Starling and White-shouldered Starling. <i>A Member (NGO)</i> expressed concern if proper management actions could be taken for species as rare as Falcated Duck. A proposal to include the species as a potential species which would benefit from management actions undertaken for Eurasian Wigeon would be more appropriate. <i>A Member (NGO)</i> further noted that active management actions to encourage the breeding of Red-billed Starling (a current target species) and White-cheeked Starling (which is known to breed nearby) at the EEA would add much ecological value of the site for these species. <i>A Member (consultant)</i> noted that an attempt to provide nest boxes with larger holes could be deployed though boxes with larger holes are readily used by other species such as Crested Myna and Oriental Magpie Robin.</p> <p>v) <i>EC Members</i> agreed that the following species do not meet the requirement to qualify as target species for the EEA: Northern Shoveller, Northern Pintail, Garganey, Eurasian Spoonbill, Cinnamon Bittern, Purple Heron, Western Osprey, and Chinese Penduline Tit based on the numbers recorded on site and the overall population in the Deep Bay area, while <i>A Member (NGO)</i> raised concern over Yellow-breasted Bunting, noting that with the numbers recorded, the EEA could be an important site for the species. <i>A Member (consultant)</i> noted that whilst that could be true, given the habitat requirements at the site and the habitat requirement of the species, actions which could be undertaken at the site for the species is very limited; this was agreed by the <i>Members</i>.</p> <p>vi) <u>Herpetofauna target:</u> <i>EC Members (NGO)</i> agreed to remove Burmese Python as a target species.</p> <p>vii) <u>Change in the Location of the Reedbed:</u> <i>A Member (consultant)</i> noted that this had been previously discussed with the <i>Members</i>. However, recent discussion with the EPD indicated that this action would very likely trigger a Variation to Environmental Permit, and the explicit support of the <i>EC Members</i> would be required to further pursue this proposal. <i>A Member (NGO)</i> applauded the proposal of merging the three northern ponds (i.e. Ponds 20, 21 and 22) into one large lily pond (when internal bunds are submerged in the wet season) and noted that this would be beneficial to Pheasant-tailed Jacana; hence, he was for the proposal to change the location of the reedbed (currently at Pond 22) to elsewhere within the Site. <i>A Member (NGO)</i> agreed with <i>Mr. Allcock</i> in his professional judgment on the benefit for the target species. She further noted that the disturbance from the adjacent Clean-up Reedbed and/or works associated with the LMC Loop would need to be addressed. <i>A Member (consultant)</i> responded that a layer of dense shrub was planted between the Clean-up Reedbed and these northern ponds specifically for the purpose (Figure 1 refers), while the LMC Loop was yet to go through the EIAO process.</p>	<p>Noted</p> <p>Noted</p> <p>Noted</p>
<p>5. <i>A Member (consultant)</i> noted that due to time constraints, discussion on some of the items, particularly those on proposed changes to the monitoring and maintenance methodology etc., was limited. The items were summarized in the presentation material. <i>Members</i> were encouraged to ask any questions regarding these and the Review. The full</p>	<p>Noted</p>

<u>Item/Description</u>	<u>Action By</u>
Report will be circulated to the <i>EC Members</i> , relevant Government Departments, other stakeholders and the Advisory Council on the Environment.	
<p>Item 3 - <u>Any Other Business</u></p> <p>6. <i>A Member (MTR)</i> noted that the alignment of the proposed link bridge connecting the LMC Loop and the LMC Station had been modified such that the potential impact on the Clean-up Reedbed could be reduced to only one cell (Annex B). <i>A Member (NGO)</i> queried about the height of the viaduct, to which <i>A Member (MTR)</i> noted would be about the same height as the existing viaduct. <i>A Member (NGO)</i> further noted that the project was still under planning stage, and the alignment could be modified further between now and the actual EIAO stage. <i>A Member (NGO)</i> noted that MTR should ensure that wastewater cleaning treatment capacity would not be compromised and that the wastewater treatment capacity could be met.</p>	Noted
<p>Item 4 - <u>Date of Next Meeting</u></p> <p>7. The date of the next meeting is to be advised.</p>	Noted

Figure 1. Tree/Shrub buffer between the EEA and the Clean-up Reedbed.



Annex A

Lok Ma Chau Spur Line 24th Environmental Committee Meeting

Report on Ecological Monitoring & Management & Works Programme
Jun – Dec 2012

19th December 2012



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Overview of Management Works Jun - Dec 2012

Vegetation Management

- Routine grass cutting & weeding
- Routine removal of unwanted species (*Phragmites*, *Typha*, *Mimosa*, *Mikania* etc.)
- Tree trimming and maintenance for damaged trees after typhoon Vicente (July).
- Removal of reeds and sedges from Ponds 17 & 19



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Overview of Management Works Jun - Dec 2012

Vegetation Management

- Removal of reed & sedge patches by removing 10cm top soil from Pond 17 and 19



Pond 17



Pond 19



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Overview of Management Works Jun - Dec 2012

Trash Fish Stocking

Stocking Dates and Quantity Stocked between Jun and Dec 2012.

	Stocking Date	Quantity Stocked (kg)
Jun 2012	13-Jun-12	3,180
	14-Jun-12	3,010
Jul 2012	13-Jul-12	2,670
Oct 2012	27-Oct-12	7,378
Nov 2012	05-Nov-12	270
	12-Nov-12	1,200
	19-Nov-12	3,266



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Overview of Management Works Jun - Dec 2012

Summer Fish Stocking

Quantity Instructed & Actual Stocked.

	Quantity Instructed	Stocked Quantity
Tilapia	11,000 kg	8,860 kg*
Grass Carp	1,100 no.	1,100 no.

*Inadequate stocked quantity due to no stocking activities at Pond 3 and 5



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Winter Fish Stocking

- Fish stocked included Tilapia, Edible Goldfish, Silver Carp, Mud Carp, Common Carp and small carp sp.

	Pond 4	5	6	8	9	Total (kg)
27-Oct-12		1,028	665	3,447	2,238	7,378
05-Nov-12	270					270
12-Nov-12	1,200*					1,200*
19-Nov-12	1,270		1,028	968		3,266

*All stocked fish on 12th Nov was small carp sp.



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Overview of Management Works Jun - Dec 2012

General Site Management

- Bund maintenance at Ponds 3 and 5
- Provision of a big floating platform at Pond 10
- Construction of a deep trench at Pond 15 (near Pond 21's end)
- Erection of permanent site fence
- Pest Control: Red Fire Ant nests and Apple Snail
- Water quality management
- Dog trapping
- Water level adjustment
- Nest box maintenance
- MPST Tower hide maintenance (not undertaken due to accessibility issue)



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Scheduled Management Works for 2012 Wet Season

Scheduled Bund Maintenance Works at Ponds 3 & 5

	Pond 3	Pond 5
Instruction to drain	Mar 2012 (for bird attraction) May 2012 (bund maintenance)	May 2012 (bund maintenance)
Water Level (mean)	cm	cm
March	51	170
April	38	122
May	39	125
Jun	25	9
July	26	23
August	0	62
September	0	52
October	0	59
November	73	71

- Hence, no fish was stocked in the ponds in summer.



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Scheduled Management Works for 2012 Wet Season

Provision of a big floating platform at Pond 10



Scheduled Management Works for 2012 Wet Season

- Construction of a deep trench at Pond 15



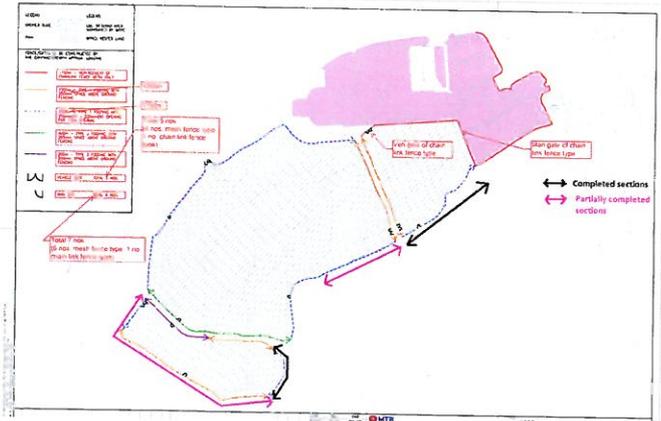
Scheduled Management Works for 2012 Wet Season

Erection of Permanent Site Boundary Fence (Pond 22)



Scheduled Management Works for 2012 Wet Season

- Erection of Permanent Site Boundary Fence (Progress as of 30 Nov 2012)



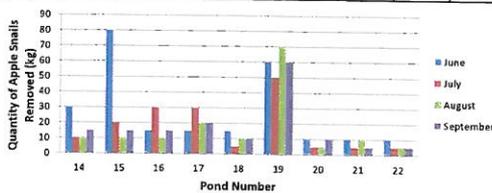
Overview of Management Works Jun - Dec 2012

Pest Management

- Golden Apple Snail removal at Ponds 14 – 22

Quantity (kg) of Apple Snail Removed by Contractor

Pond No.	14	15	16	17	18	19	20	21	22	TOTAL
June	30	80	15	15	15	60	10	10	10	245
July	10	20	30	30	5	50	5	5	5	160
August	10	10	10	20	10	70	5	10	5	150
September	15	15	15	20	10	60	10	5	5	155



Scheduled Management Works for 2012 Wet Season

Lime Trial for Killing Apple Snails at Two Heavily Infested Ponds

pH of Pond 15 and Pond 21 and quantity of lime added

Date	Pond	
	P15	P21
Lime Added	3,000 kg (29 Oct)	3,000 kg (mid-Sep) 2,000 kg (29 Oct)
16-Oct	6.49	6.88
9-Nov	7.13	9.1
23-Nov	7.12	7.95

* pH values shown in the table are mean pH of 3 random points in the pond.

Overview of Management Works Jun - Dec 2012

Decoy Trial

- Trial Egret decoys (9 No.) at island on Pond 2 (photos taken on 8th March 2012)



Overview of Management Works Jun - Dec 2012

Decoy Trial

- Trial Egret decoys (9 No.) at island on Pond 2 (photos taken on 16th Oct 2012)



Operation II Stage Monitoring

- Required as off August 2007 when Spurline commenced operation (although operational stage monitoring started in January 2006)
- Wildlife targets extended to cover species of conservation importance detailed in the Environmental Impact Assessment:
 - Eurasian Otter
 - 26 bird species (c.f. Table 2.3 of the HCMP)
 - Burmese Python, Chinese Soft-shelled Turtle, Chinese Bullfrog
 - Dragonflies (increased numbers and species diversity)



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Monitoring of Target Waterbird Species: protocol

- Counts from towers at LMC at Mai Po San Tsuen (MPST) for larger waterbirds and raptors.
- Transect survey for smaller target species at LMC and MPST and for all species at San Tin.
- Methodology for calculation of targets reviewed in early 2007 (included in HCMP)



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26 Bird Target Species (Up to Nov 2012)

Species	2008			2009			2010			2011			2012 (Jan-Nov)		
	LMC	CA	Ratio	LMC	CA	Ratio	LMC	CA	Ratio	LMC	CA	Ratio	LMC	CA	Ratio
Great Cormorant	4.32	0.9	0.208	2.53	0.35	0.138	2.92	0.25	0.086	2.85	0.4	0.14	4.6	0.6	0.13
Grey Heron	1.04	1.4	1.346	2.03	0.1	0.049	2.59	0.17	0.062	2.02	0.77	0.38	1.47	0.13	0.09
Great Egret	1.04	0.04	0.038	0.9	0.45	0.5	2.57	0.4	0.156	0.4	0.05	0.125	0.94	0.41	0.43
Little Egret	1.34	0.71	0.529	0.76	0.74	0.974	1.19	0.9	0.756	0.93	0.75	0.81	0.8	0.8	1.0
Chinese Pond Heron	0.45	0.43	0.956	0.72	0.44	0.611	0.98	0.5	0.51	0.52	1.4	0.54	0.41	0.41	0.21
Black-faced Spoonbill	0.91	0.91	1.0	0.91	0.62	0.681	1.16	0.74	0.64	0.64	0.74	0.74	0.74	0.74	0.74
Eurasian Teal	7.26	0.12	0.0166	0.18	0.02	0.111	1.75	0.14	0.08	0.01	0.01	0.01	0.01	0.01	0.01
Greater Spotted Eagle	0.02	0	0	0	0	0	0.02	0.02	0.1	0	0	0	0	0	0
Eastern Imperial Eagle	0.02	0	0	0	0	0	0.02	0	0	0	0	0	0	0	0
Eurasian Hobby	0	0	nr	0	0	nr	0.02	0	0	0	0	0	0	0	0
Japanese Quail	0	0	nr	0	0	nr	0.02	0	0	0	0	0	0	0	0
Eurasian Coot	0.01	0	0	0	0	0	0.05	0.04	0.8	0.71	1.41	1.41	0.81	0.81	1.24
Plumbeous-billed Jacana	0.02	0	0	0	0	0	0.02	0.02	0.1	0.02	0.02	0.02	0.02	0.02	0.02
Greater Pond-heron	0.02	0.04	2.0	0.02	0.02	1.0	0.02	0.02	0.1	0.02	0.02	0.02	0.02	0.02	0.02
Black-headed Stilt	0.14	0.01	0.071	0.02	0.02	0.1	0.02	0	0	0.02	0.02	0.02	0.02	0.02	0.02
Pheasant-winged Snipe	0.01	0.01	1.0	0.01	0.01	1.0	0.01	0.01	0.1	0.01	0.01	0.01	0.01	0.01	0.01
Common Sandpiper	0.02	0.02	1.0	0.02	0.02	1.0	0.02	0.02	0.1	0.02	0.02	0.02	0.02	0.02	0.02
Richard's Plover	0.07	0.04	0.571	0.1	0.04	0.4	0.1	0.09	0.11	0.08	0.07	0.02	0.02	0.02	0.02
Blue-tailed Tropicbird	0.01	0.01	1.0	0.01	0.01	1.0	0.01	0.01	0.1	0.01	0.01	0.01	0.01	0.01	0.01
Malay Kingfisher	0.02	0.04	2.0	0.02	0.02	1.0	0.02	0.02	0.1	0.02	0.02	0.02	0.02	0.02	0.02
Paddy Field Creeper	0.02	0.02	1.0	0.02	0.02	1.0	0.02	0.02	0.1	0.02	0.02	0.02	0.02	0.02	0.02
Shining Cuckoo	0.04	0.1	2.5	0.04	0.04	1.0	0.04	0.04	0.1	0.04	0.04	0.04	0.04	0.04	0.04
Eurasian Yellow Bunting	0	0	nr	0	0	nr	0	0	0	0	0	0	0	0	0
Red-billed Starling	1.72	1.58	0.918	0.02	0.02	1.0	0.02	0.02	0.1	0.02	0.02	0.02	0.02	0.02	0.02
Black-capped Oriole	0.01	0	0	0	0	0	0.01	0.01	0.1	0.01	0.01	0.01	0.01	0.01	0.01

Key:
nr - Not recorded within WCA or Control Areas during the period
Blue - Target met (i.e. density in WCA at least twice that in Control Areas)
Yellow - Target not met, although density higher than in Control Areas
Red - Target not met and density lower than in Control Areas
* Casual observation only

Endangered Birds Jun - Nov 2012

Species name	Status	Maximum Count					
		Jun	Jul	Aug	Sep	Oct	Nov
Black-faced Spoonbill	Endangered	0	0	0	0	27	114
Greater Spotted Eagle	Vulnerable	0	0	0	0	1	2
Eastern Imperial Eagle	Vulnerable	0	0	0	0	0	1
Collared Crow	Near Threatened	2	1	1	3	2	1



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Mammal Observations

Common Name	Species	Scientific Name	Date	Pond
Small Asian Mongoose	<i>Herpestes javanicus</i>	<i>Herpestes javanicus</i>	16 th Jul 12	2
Small Asian Mongoose	<i>Herpestes javanicus</i>	<i>Herpestes javanicus</i>	16 th Jul 12	5
Small Asian Mongoose	<i>Herpestes javanicus</i>	<i>Herpestes javanicus</i>	26 th Sep 12	3
Eurasian Otter	<i>Lutra lutra</i>	<i>Lutra lutra</i>	5 th Nov 12	4

- All mammal sightings from direct observations;
- New Infra-red cameras (without flash) are being purchased to replace existing model.



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Amphibian Observations

Species	Maximum Total Number of Individuals recorded in all ponds in LMC EEA	2006	2007	2008	2009	2010	2011	2012
		Asian Common Toad	0	3	3	1	2	4
Asiatic Painted Frog	0	0	0	0	0	0	2	
Butler's Pigmy Frog	0	0	0	1	2	0	0	
Ornate Pigmy Frog	0	9	13	46	128	25	5	
Paddy Frog	35	25	23	14	12	7	20	
Chinese Bullfrog	0	1	1	2	4	2	2	
Günther's Frog	130	157	145	74	137	86	132	
Two-striped Grass Frog	0	0	0	0	2	1	1	
Brown Tree Frog	12	16	32	33	27	33	12	
No. of species recorded		3	6	6	7	8	8	8
Total No. of species recorded		9						



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Reptile Observations

Species	Maximum Total Number of Individuals recorded in all ponds in LMC EEA	2006	2007	2008	2009	2010	2011	2012
		Red-eared Slider	0	0	0	0	1	2
Chinese Soft-shelled Turtle	1	1	1	1	1	1	1	
Malayan Snail-eating Turtle	0	0	0	1	0	0	0	
Four-clawed Gecko	0	0	0	0	1	0	0	
Chinese Gecko	0	0	0	1	0	0	0	
Bowling's Gecko	4	3	1	2	2	2	1	
Chinese Skink	0	0	1	0	0	0	0	
Reeves' Smooth Skink	0	0	0	0	1	0	0	
Common Blind Snake	0	0	0	0	1	0	0	
Burmese Python	1	1	1	0	0	0	0	
Chinese Water Snake	1	1	0	1	0	1	0	
Plumbeous Water Snake	0	0	0	1	1	0	0	
Indo-Chinese Rat Snake	1	1	0	0	0	0	0	
Common Rat Snake	1	1	1	0	1	1	1	
Checkered Keelback	1	2	1	2	6	3	1	
Many-banded Krait	0	1	0	0	0	0	1	
Chinese Cobra	0	0	0	0	1	0	1	
No. of species recorded		7	8	6	7	10	6	6
Total No. of species recorded		17						



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Dragonfly Targets

Species Diversity	Dragonfly recorded as adults or exuviae at LMC EEA	2006	2007	2008	2009	2010	2011	2012
		Orange-tailed Midget						
Wandering Midget								
Orange-tailed Sprite								
Common Bluelet								
Blue Sprite								
Pale-spotted Emperor								
Lesser Emperor								
Common Pargetail								
Golden Ringlet								
Ring-tailed Emperor								
Asian Pargetail								
Blue Dasher								
Asian Amberwing								
Blue Breeze								
Amber-winged Glider								
Coastal Glider								
Pied Fritter								
Common Red Skimmer								
Green Skimmer								
Wandering Glider								
Pied Skimmer								
Ruby Darter								
Sapphire Flutterer								
Vermilion Flutterer								
Twining Skimmer								
Saddlebag Glider								
Crimson Drosophila								
Dancing Drosophila								
Scarlet Bearer								
No. of Species Recorded		22	23	23	22	24	21	25
Total No. of Species Recorded		30						



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Dragonfly Targets

- Three new dragonfly records observed in 2012, including Blue Sprite, Sapphire Flutterer and Crimson Drowning.
- Blue Sprite and Sapphire Flutterer are both considered as Local Concern*.
- Two Blue Sprite were observed on 2nd May 2012 on Pond 16 and Pond 19.
- Two Sapphire Flutterers were observed on 21st Jun 2012 on Pond 12 and Pond 18.

*Conservation status according to Fellowes et al. 2002



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Mammal Targets

Species Name/Maximum Count	2006	2007	2008	2009	2010	2011	2012*
Eurasian Otter <i>Lutra lutra</i>	2	2	2	1	3*	0	1

Remarks: *Up to Nov 2012
*Up to 3 individuals recorded between Pond 1 and 2 by AFCD.

Herpetofauna Targets

Species Name/Maximum Count	2006	2007	2008	2009	2010	2011	2012
Chinese Bullfrog <i>Hoplobatrachus chinensis</i>	0	1	1	2	4	2	2
Burmese Python <i>Python bivittatus</i>	1	0	1	0	0	0	0
Chinese Soft-shelled Turtle <i>Pelodiscus sinensis</i>	1	1	1	1	1	1	1



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Proposed Items in the Management Review Report

- Review of Target Species
- Review of Monitoring Items
- Review of Monitoring Frequency
- Review of Management Objectives
- Review of Reporting Frequency



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Proposed Items in the Management Review Report

Review of Target Species (Mammals)

Taxa	Retained as Target	New Target	Management Compartment ¹	Additional Management Measures Proposed
Mammal				
Eurasian Otter	Y	-	A	• Provision of another otterholt after completion of site boundary fence and reduction of feral dog disturbance
Leopard Cat	-	Y	C	• Undertake small mammal (live) trapping
Total Dropped	0			
Total Added	1			
Total Number of Species	2			



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Proposed Items in the Management Review Report

Review of Target Species (Birds)

Taxa	Retained as Target	New Target	Management Compartment ¹	Additional Management Measures Proposed
Great Cormorant	Y	-	A, B	• None proposed
Grey Heron	Y	-	A, B	• Minimisation of disturbance
Great Egret	Y	-	A, B, C	• Summer drain-down in Compartment B
Little Egret	Y	-	A, B, C	• Provision of decoys to encourage roosting/feeding
Black-faced Spoonbill	Y	-	a, b	• Minimisation of disturbance
Chinese Pond Heron	Y	-	A, B, C	• Summer drain-down in Compartment B; Provision of decoys to encourage roosting/feeding
Eurasian Teal	Y	-	A, b, c	• None proposed
Greater Spotted Eagle	Y	-	b, b, c	• Large isolated trees in Compartment B
Eastern Imperial Eagle	Y	-	a, b, c	• Large isolated trees in Compartment B
Eurasian Hobby	n	-	n/a	
Japanese Quail	n	-	n/a	
Eurasian Coot	Y	-	b, b, c	• Increase sily area
Phasant-tailed Jacana	Y	-	C	• Increase sily area; Restricted access before/during breeding season; Review vegetation/aesthetics management during wet season
Great Painted-trogon	Y	-	C	• Adjust vegetation management to avoid disturbance to breeding birds
Black-winged Stilt	Y	-	A, B, C	• Provision of floating islands with gravel; Partial drain-down if breeding is proved
Pintail / Swinhoe's Snipe	Y	-	C	• None proposed
Common Snipe	Y	-	b, C	• Provision of freshly cut reedbeds in dry season, particularly autumn
Richard's Pigeon	n	-	n/a	
Black-throat	Y	-	C	• None proposed
Clay-colored Sparrow	n	-	n/a	

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Proposed Items in the Management Review Report

Review of Target Species (Birds)

Taxa	Retained as Target	New Target	Management Compartment ¹	Additional Management Measures Proposed
Pallas's Grasshopper	Y	-	b, C	• Move reedbed to Pond 12;
Warbler	Y	-	b, c	• Retaining long grass along bunds in autumn
Zitting Cuckoo	Y	-	b, c	• Move reedbed to Pond 12
Japanese Yellow Bunting	n	-	n/a	
Red-billed Starling	Y	-	a, b	• None proposed
Black-naped Oriole	n	-	n/a	
Falcated Duck	-	Y	a, b, c	• Provision of short grass for grazing in winter
Eurasian Wigeon	-	Y	b, C	• Provision of short grass for grazing in winter
Northern Shoveler	-	n	-	n/a
Northern Pintail	-	n	-	n/a
Garganey	-	n	-	n/a
Little Grebe	-	Y	a, b, c	• None proposed
Eurasian Spoonbill	-	n	-	n/a
Cinnamon Bittern	-	n	-	n/a
Black-crowned Night Heron	-	Y	a, b	• Tree management
Purple Heron	-	n	-	n/a
Intermediate Egret	-	Y	a, b, c	• None proposed
Western Osprey	-	n	-	n/a
Chinese Penduline Tit	-	n	-	n/a
White-necked Stalling	-	Y	A, b	• None proposed
White-shouldered Starling	-	Y	A, B, C	• Provision and maintenance of nest boxes
Yellow-breasted Bunting	-	n	-	n/a
Total Dropped	6			
Total Added	7			
** Total Number of Species low to be discussed				

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Proposed Items in the Management Review Report

Review of Target Species (Herpetofauna)

Taxa	Retained as Target	New Target	Management Compartment ¹	Additional Management Measures Proposed
Herpetofauna				
Chinese Bullfrog	Y	-	C	• Review habitat conditions in ponds where the species is noted and review findings for possible further actions
Burmese Python	n	-	-	n/a
Chinese Soft-shelled Turtle	Y	-	A, B	• Review habitat conditions in ponds where the species is noted and review findings for possible further actions
Total Dropped	1			
Total Added	0			
Total Number of Species	2			



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Proposed Items in the Management Review Report

Review of Monitoring Items & Frequency

Monitoring Works	Review Management Report	Existing Monitoring Schedule	2006 HCMP
Tower Counts at EEA	Once per week	Twice per week	Twice per week
Tower Counts at MPST Control Areas	Unchanged	Once per week	Once per week
Site Transsects at EEA	Unchanged	Once per week	Once per week
Site Transsects at MPST and ST Control Areas	Unchanged	Once per week	Once per week
Site Transsects at Clean-up Reedbed	Unchanged	Once per week	Once per week
Bird Trapping – mist net	Unchanged (Optional)	Optional	EEA & Clean-up Reedbed – twice per month (Nov – Apr)
Mai Po to monitor Black-faced Spoonbills	Unchanged	Once per week (Oct – May)	Once per week (Oct – May)
Mammal at EEA	Conduct small mammal trapping	Camera checking once per two weeks minimum	check cameras once per week

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Proposed Items in the Management Review Report

Review of Monitoring Items & Frequency

Monitoring Works	Review Management Report	Existing Monitoring Schedule	2006 HCMP
Dragonflies at EEA	April to Aug - twice per month	Mar, Sept - Nov - once per month April to Aug - twice per month	Mar, Sept - Nov - once per month April to Aug - twice per month
Dragonflies Exuvia at EEA	Discontinue	Traps inspect twice per week	Traps inspect twice per week
Dragonflies at Control Areas	Discontinue	Mar, Sept - Nov - once per month April to Aug - twice per month	Mar, Sept - Nov - once per month April to Aug - twice per month
Butterflies at EEA	Discontinue	Mar, Sept to Nov - once per month April to Aug - twice per month	Mar, Sept - Nov - once per month April to Aug - twice per month
Butterflies at Control Areas	Discontinue	Mar, Sept to Nov - once per month April to Aug - twice per month	Mar, Sept - Nov - once per month April to Aug - twice per month

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Proposed Items in the Management Review Report

Review of Monitoring Items & Frequency

Monitoring Works	Review Management Report	Existing Monitoring Schedule	2006 HCMP
Herpetofauna-reptile at EEA	Discontinue	April to Nov - twice (daytime) per month	April to Nov - twice (daytime) per month
Herpetofauna-reptile at Control Areas	Discontinue	April to Nov - twice (daytime) per month	April to Nov - twice (daytime) per month
Herpetofauna - amphibians at EEA	Unchanged	Mar to Aug - twice (nighttime) per month	Mar to Aug - twice (nighttime) per month
Herpetofauna - amphibians at Control Areas	Discontinue	Mar to Aug - twice (nighttime) per month	Mar to Aug - twice (nighttime) per month
Aquatic Invertebrates	Discontinue (Optional)	Water Pond - once per year	Water Pond - once per year
	Discontinue (Optional)	Marsh & reedbed - twice per year	Marsh & reedbed - twice per year
Benthic Invertebrates	Discontinue (Optional)	Water Pond - once per year	Water Pond - once per year
	Discontinue (Optional)	Marsh & reedbed - twice per year	Marsh & reedbed - twice per year

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Proposed Items in the Management Review Report

Review of Monitoring Items & Frequency

Monitoring Works	Review Management Report	Existing Monitoring Schedule	2006 HCMP
Monitoring of Fish Stock	Unchanged	Once every two months	Once every two months
Monitoring of Habitats	Twice per year, Concurrent with vegetation cover monitoring	Twice per year	Twice per year
Monitoring of Vegetation Cover	Habitat and vegetation monitoring	Twice per year	Twice per year
Microhabitat Structure and Floristics of Marsh Areas (Compartment C)	Once per year	Twice per year	Twice per year
Pedology Monitoring	Discontinue (Optional)	Once per year	Once per year
Water Quality and Hydrology of Fishponds	In-situ: Once per month, exclude turbidity	In-situ: Once per month	In-situ: Once per month
	Lab: Discontinue (Optional)	Lab: twice per year	Lab: twice per year
	Water level: Twice per month	Water level: weekly	-

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Proposed Items in the Management Review Report

Review of Monitoring Items & Frequency

Monitoring Works	Review Management Report	Existing Monitoring Schedule	2006 HCMP
Review site condition	Unchanged	Weekly	Weekly
Adaptive Management Supervision	Unchanged	Monthly	Monthly
Monthly EM&A Report	Discontinue	-	Monthly
Quarterly Report	Discontinue	Quarterly	-
Annual Report	Unchanged	Yearly	-
Annual Review of Tree Management	Once per year	-	-

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Proposed Items in the Management Review Report

Review of Management Objectives

Item	Review Management Report	2006 HCMP
Overall Habitat Area	Area: Unchanged ¹ Some amendment to location and micro-habitat :- • Increase area of lily; • Relocate reedbed (from Pond 22 to 14)	Follows EP requirement
Micro-habitat & disposition within Marsh area	• Increase area of lily; • Relocate reedbed (from Pond 22 to 14)**	• Micro-habitat within marsh not specified in EP; • Location of Reed appended in figures to the EP
Water Management	• Upgrade pipe & pump system; • Some minor reprofiling of ponds; • Reduce monitoring frequency to twice a month	A series of pipe & pump system
Water Quality Management	• Provide on-site storage for lime and peanut residue	Add lime & peanut residue as required
Water Budget	• Introduce dry season water capacity action limit	(Not specified)
Fish Stocking Regime	Unchanged	Once every two months

** Might require a VEP, subject to discussion with MTRC and EPD.

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Proposed Items in the Management Review Report

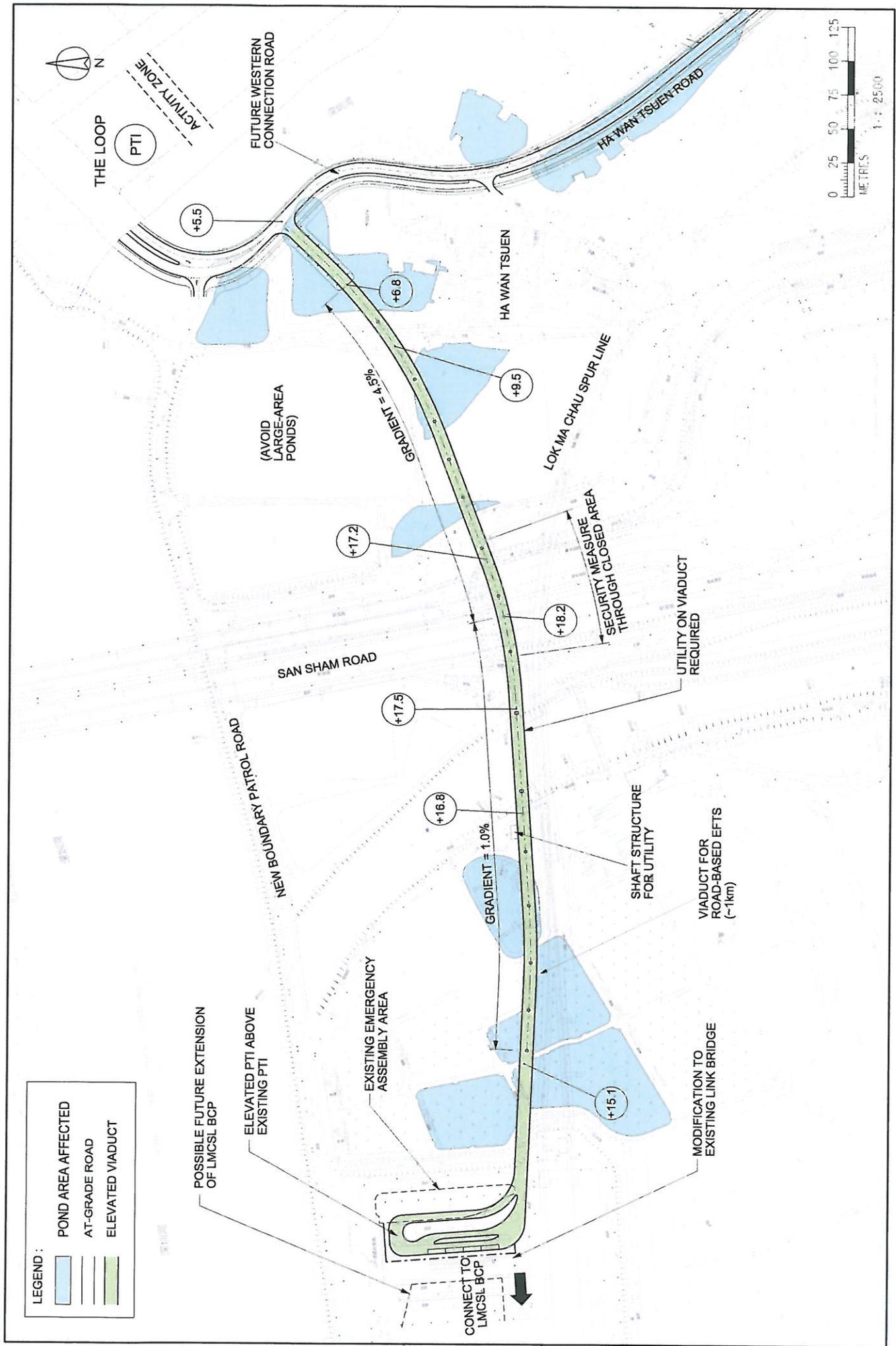
Review of Management Objectives

Item	Review Management Report	2006 HCMP
Undesired Flora Management	• Grass-cutting: Unchanged; • Weeding: twice per year	(Not specified)
Undesired Pest Management	• Apple Snail: Unchanged; • Fire Ants: Increase treatment frequency to once every two months	(Not specified)
Dog Management	Unchanged; Review effectiveness of fence	(Not specified)
Sick Bird Management	Unchanged	
Structural Maintenance	Unchanged	Monthly and after flood and typhoons

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Annex B



LEGEND :

- POND AREA AFFECTED
- AT-GRADE ROAD
- ELEVATED VIADUCT



圖則編號 Figure No.	6.3
圖則名稱	修改編號
1:2500 DN A3	rev.

圖則項目 Title
DIRECT CONNECTION TO LMCSL STATION - ROAD-BASED EFTS LINKAGE OPTION

研究項目 Job Title
 合約編號 Agreement No. CE 53/2008 (CE)
 落馬洲河套地區發展规划及工程研究 - 勘探研究
 Planning and Engineering Study on
 Development of Lok Ma Chau Loop - Investigation

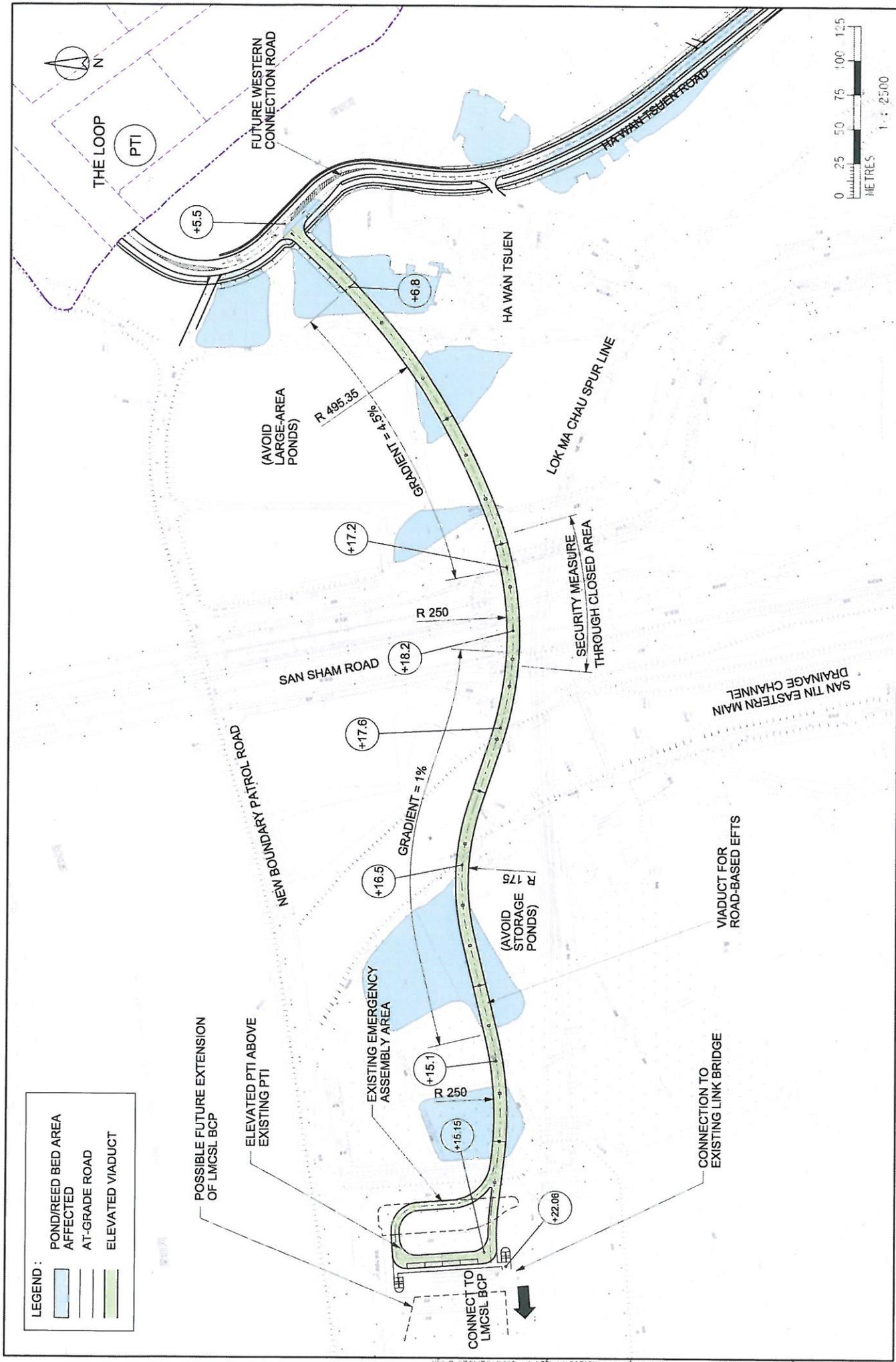
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(Option 1)



圖則編號 Figure No. **6.3**
 圖則名稱 Title: DIRECT CONNECTION TO LMCSL STATION - ROAD-BASED EFTS LINKAGE OPTION
 比例 Scale: 1:2500 ON A3
 修訂編號 Rev.:

研究項目 Job Title: DIRECT CONNECTION TO LMCSL STATION - ROAD-BASED EFTS LINKAGE OPTION
 合約編號 Agreement No. CE 53/2008 (CE)
 落馬洲河套地區發展類別及工程研究 - 初步研究
 Planning and Engineering Study on Development of Lok Ma Chau Loop - Investigation
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(Option 2)