

# **Construction of a Secondary Boundary Fence and New Sections of Primary Boundary Fence and Boundary Patrol Road**

## **Environmental Impact Assessment – Executive Summary (Final)**

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## **1 PROJECT BACKGROUND**

### **1.1 Introduction**

- 1.1.1 This Project is named as “Construction of a Secondary Boundary Fence and New Sections of Primary Boundary Fence and Patrol Road”.
- 1.1.2 The Frontier Closed Area (FCA) is an integral part of the package of measures for maintaining the integrity of the Hong Kong SAR’s boundary with the Mainland and for combating illegal immigration and other cross-boundary criminal activities. Following a recent review, the Government has concluded that with the erection of a secondary boundary fence (SBF) along the boundary patrol road (BPR) and construction of new sections of the BPR and primary boundary fence (PBF) at certain sections along the boundary, the FCA coverage can be substantially reduced without affecting the objective of maintaining the integrity of the boundary. The PBF and SBF will be erected along the northern and southern curbs of the realigned BPR respectively to facilitate the Police in combating cross-boundary criminal activities. The reduced FCA will comprise a narrow strip of land covering the realigned BPR and areas to its north, together with the points of crossing the boundary (i.e. the Boundary Control Points and Sha Tau Kok town). Areas south of the SBF will generally be excised from the FCA.

### **1.2 The Project**

- 1.2.1 The Project mainly comprises the construction of an SBF along the southern edge of the existing BPR (approximately 21.7km) from west (Pak Hok Chau) to east (Sha Tau Kok). For sections where the existing PBF runs along the southern edge of the BPR, a new fence with sensor alarm system will be constructed on the northern edge of the BPR as part of the PBF whereas the existing PBF will become the SBF. The project also includes the conversion of the existing maintenance services road along the Shenzhen River bank to the north of the Lok Ma Chau Loop and Hoo Hok Wai into a new section of the BPR with a PBF and an SBF; and construction of two new sections of the BPR with a PBF and an SBF along the Shenzhen River side to the north of Pak Fu Shan and northwest of Lin Ma Hang Village. In addition, the Project includes the construction of a checkpoint at the entrance to the Sha Tau Kok town (i.e. location of “Gate One”) and replacement of the existing checkpoint at Pak Hok Chau, removal of the existing checkpoints at Lok Ma Chau, Sha Ling, Ping Che and Shek Chung Au, and removal of the existing PBF along those sections of the existing BPR which will be replaced by new sections of the BPR.

### **1.3 EIAO and Designated Project**

- 1.3.1 The Project is a designated project (DP) under item Q.1, Part I, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) which reads *“All projects including new access roads, railways, sewers, sewage treatment facilities, earthworks, dredging works and other building works partly or wholly in an existing or gazetted proposed country park or special area, a conservation area, an existing or gazetted proposed marine park or marine reserve, a site of cultural heritage, and a site of special scientific interest.”*

## 1.4 Scope

1.4.1 The entire length of the Project is about 21.7km from west of Pak Hok Chau to east of Sha Tau Kok and is divided into four sections as shown in **Figure 1.1**. The project scope of each section is described below.

### Section 1 – Mai Po to Lok Ma Chau Control Point

- (i) To erect an SBF along the existing BPR (approximately 4.1km); and
- (ii) To replace the existing checkpoint at Pak Hok Chau

### Section 2 – Lok Ma Chau Control Point to Ng Tung River

- (i) To convert the maintenance services road of Drainage Services Department along the Shenzhen River bank to the north of the Lok Ma Chau Loop and Hoo Hok Wai into a new section of the BPR (approximately 5.6km);
- (ii) To erect a new PBF with the sensor alarm system and an SBF respectively along the northern and southern side of the converted road;
- (iii) To remove the original PBF and the sensor alarm system thereon along the existing BPR south of the Lok Ma Chau Loop and Hoo Hok Wai; and
- (iv) To remove the existing checkpoint at Lok Ma Chau Road.

### Section 3 – Ng Tung River to Lin Ma Hang Village

- (i) To erect an SBF along the existing BPR except the sections to the north of Pak Fu Shan and northwest of Lin Ma Hang Village (approximately 7.5km);
- (ii) To construct new sections of the BPR along the Shenzhen River side to the north of Pak Fu Shan and northwest of Lin Ma Hang Village without necessitating river training (approximately 4.0km);
- (iii) To erect a new PBF with the sensor alarm system and an SBF along the northern and southern sides of the new sections of BPR respectively;
- (iv) To remove the original PBF and the sensor alarm system thereon along the existing BPR near Pak Fu Shan and Lin Ma Hang Village; and
- (v) To remove the existing checkpoints at Sha Ling and Ping Che.

### Section 4 – Lin Ma Hang Village to Sha Tau Kok

- (i) To erect an SBF from the entrance of the Sha Tau Kok town (i.e. the location of “Gate One”) to the Sha Tau Kok Control Point (approximately 0.5km);

- (ii) To provide a new checkpoint at “Gate One”; and
- (iii) To remove the existing checkpoint at Shek Chung Au.

1.4.2 Apart from normal boundary patrol operation conducted by the Police, no significant operational or decommissioning activities would be involved in association with the proposed SBF, PBF and BPR.

1.4.3 Security Bureau is the project proponent, Police is the end-user of the boundary fences and the realigned BPR and Architectural Services Department is the works agent responsible for the management, planning, design and implementation of the Project.

## **1.5 Need for the Project and Consequences of not Proceeding with the Project**

1.5.1 While the coverage of the Frontier Closed Area (FCA) will be substantially reduced, it would still be necessary to maintain the integrity and security of the boundary area. The construction of new sections of PBF and SBF is considered to be essential to ensure effective law enforcement to safeguard boundary integrity and security and to prevent and combat illegal immigration and other cross-boundary crimes.

1.5.2 Without the implementation, the above purpose cannot be achieved.

## **1.6 Consideration of Alternative Alignment**

1.6.1 The alignment generally runs along the southern boundary of the reduced FCA, the coverage of which has taken account of the comments received during the consultation exercise conducted in September to November 2006.

1.6.2 For mitigating impacts on important habitats and wildlife in the order of priority of ‘Avoidance, Minimizing, Compensation’, the alignments are proposed along the existing boundary patrol road avoiding the environmentally sensitive areas as far as possible. Other alternatives are considered not feasible as they could only be established by creating new pathways in the adjacent natural habitats. The impacts would be minimized if the alignments stay along the existing boundary patrol road. In addition, mitigation measures have also been considered to minimize the environmental impacts. For example, special type of footing would be adopted to retain the existing trees if necessary.

1.6.3 For Section 2, it was originally proposed in the FCA review to retain all the land north of the existing BPR in the FCA. This covered about 100 hectares in the Lok Ma Chau Loop and about 300 hectares in the adjacent Hoo Hok Wai. During the consultation, the local community suggested that these areas should be excluded from the FCA. After consideration, Government decided to accept the suggestion and reduce the FCA coverage accordingly. To this end, the existing maintenance road of the Drainage Services Department to the north of the Lok Ma Chau Loop and Hoo Hok Wai will be used as the boundary patrol road, with a primary boundary fence to be constructed along the northern edge of the road and a secondary boundary fence along the southern edge of the road. To mitigate the environmental impacts, the proposed works would avoid the environmentally sensitive areas, e.g. fish ponds and marshes along Hoo Hok Wai, as far as possible.

- 1.6.4 The alignments to the north of Pak Fu Shan and northwest of Lin Ma Hang Village are originally proposed along the existing boundary patrol road in Section 3. The relevant Rural Committee requested that two patches of land northwest of Lin Ma Hang and north of Pak Fu Shan be excised from the FCA to release their development potential. After consideration, the alignment is amended to run along the Shenzhen River bank to the north of the two areas in accordance with the views of the local community.
- 1.6.5 The latest alignment is shown in **Figure 1.1**. The alignment along the existing boundary patrol road and new sections of boundary patrol road is denoted in blue and red in **Figure 1.1** respectively.

## **1.7 Alternative / Preferred Construction Methods and Sequence of Works**

- 1.7.1 The major construction works of the Project is provision of the secondary and primary boundary fences. The fences mainly comprise the reinforced concrete footing and the steel fence. For the reinforced concrete footing, precast footing had been considered to minimize the concreting works on site. However, it was found that the precast option is not feasible due to the limited road width which hinders the transportation of the precast units. In addition, the longitudinal and horizontal alignment of the boundary patrol road varies significantly. Thus, standard precast concrete units cannot be applied and cast-in-situ option is necessary to match the site condition.
- 1.7.2 Apart from the boundary fences, the Project also involves provision of two checkpoints. Since the size of the proposed Pak Hok Chau Checkpoint is comparatively small, it is proposed to adopt prefabricated house instead of traditional reinforced concrete structure to minimize the environmental impact.

## **1.8 Purpose and Approach of the EIA Study**

- 1.8.1 The purpose of this EIA study is to provide information on the nature and extent of environmental impacts arising from the construction and operation of the project and related activities taking place concurrently. This information will contribute to decisions by the Director of Environmental Protection on: -
- The overall acceptability of any adverse environmental consequences that are likely to arise as a result of the Project;
  - The conditions and requirements for the detailed design, construction and operation of the Project to mitigate against adverse environmental consequences wherever practicable; and
  - The acceptability of residual impacts after the proposed mitigation measures are implemented.

## **1.9 Assessment Area**

- 1.9.1 The works are mainly located along the existing BPR from west of Pak Hok Chau to east of Sha Tau Kok, the Shenzhen River side at Lok Ma Chau Loop, Hoo Hok Wai, north of Pak Fu

Shan and northwest of Lin Ma Hang Village within the FCA. Access to these areas is controlled by Closed Area Permits issued under Section 37(2) of the Public Order Ordinance. The location of the fence alignment, the new sections of BPR, the new checkpoint, the four existing checkpoints to be removed and the replacement checkpoint to be constructed are shown in **Figure 1.1**.

## **1.10 Programme**

1.10.1 The Project is being planned and designed by the Consultant appointed by ArchSD. The works will be implemented by the Contractors appointed by ArchSD and the first Construction Contract is expected to be awarded in late 2009. The construction works are expected to commence in late 2009 for completion in late 2012.

## **2 SUMMARY OF FINDINGS, CONCLUSION & RECOMMENDATIONS**

### **2.1 Introduction**

- 2.1.1 The environmental implications of the Project have been addressed and presented in the EIA and summarised below.

### **2.2 Air Quality**

- 2.2.1 The dust control requirements of the Air Pollution Control (Construction Dust) Regulation will be followed to control the dust emission arising from the construction activities. It is expected no adverse impact to the surroundings or nearby sensitive receivers. During operational phase, no adverse impact is anticipated.

### **2.3 Noise**

- 2.3.1 This construction noise impact assessment has been based on a best estimate of the construction sequence and machines inventory.
- 2.3.2 The potential noise impact that could arise from daytime construction/ demolition activities of the Project has been evaluated. With the use of quiet plant, the movable noise barriers and the alternative demolition method, all the construction noise impact can be mitigated to acceptable levels. The Contractor shall, from time to time, be aware of the noise impacts on the surrounding NSRs through adequate noise monitoring during the works so that adjustments could be made to control the construction noise levels. These requirements should be triggered by an Event and Action Plan as part of the EM&A which should be incorporated into the works contract in order to make it enforceable.
- 2.3.3 During the operation phase, the road traffic noise generated from the newly constructed Border Road is predicted remaining unchanged to the existing scenario as there are mainly police patrol cars and maintenance cars (e.g. WSD, DSD etc.) travelling along the boundary patrol road. A worst-case assumption of road traffic flow and the percentage of heavy vehicle has been adopted in the prediction, it is concluded that potential road traffic noise impact would comply with the noise criteria stipulated in the EIAO-TM.

### **2.4 Water Quality**

- 2.4.1 Water quality impacts during the construction phase will be controlled through the implementation of good site practice. With appropriate mitigation and precautions measures in place during construction, there should be relatively minor impacts associated with this project during or following construction. In the operation phase, the impact from sanitary facilities is anticipated to be negligible.

### **2.5 Waste Management**

- 2.5.1 The construction activities generate waste types include site clearance, C&D material, chemical waste from the maintenance of construction plant and equipment and general refuse from the workforce. Provided that these wastes are maximally reused, handled, transported



and disposed of using approved methods and that the recommended good site practices are followed, adverse environmental impacts are not expected during the construction phase.

- 2.5.2 The potential land contamination for this Project is expected to be low. No adverse environmental impacts are expected during operational phase. No site investigations or laboratory testing are proposed.
- 2.5.3 The waste type generated during the operational phase is a small amount of general refuse, which will have no adverse environmental impact.

## **2.6 Ecology**

- 2.6.1 An Ecological Impact Assessment had been conducted for the proposed project. Ecological surveys were carried out in November 2007 to October 2008 which covered both wet and dry seasons.
- 2.6.2 A total of 15 habitat types were identified within the Assessment Area, including woodland, shrubland, plantation, gei wai, mangrove, pond, marsh, wet agricultural land, dry agricultural land, abandoned agricultural land / low-lying grassland, hillside grassland, stream / river, drainage channel, open field and developed area.
- 2.6.3 Two individuals of flora species of conservation interest were recorded within the Project Area at Section 2 and Section 3. In-situ preservation and providing protective fencing during construction period are recommended to avoid potential impact on these plants.
- 2.6.4 The construction works at WCA without mitigation measures would have adverse impact on the ecology of the area notably the wetland-dependent birds roosting in the Mai Po Nature Reserve and the surrounding fishponds. To avoid the potential disturbance to these ecological sensitive receivers, avoidance of construction works using PMEs in WCA during the wintering period (15th November to 15th March) is recommended.
- 2.6.5 Excavation works at Mai Po during the ardeid breeding season (from 1st March to 31st July) should not be carried out to prevent potential disturbance to the Tam Kon Chau egret.

## **2.7 Landscape and Visual Impact Assessment**

- 2.7.1 The potential landscape and visual impacts during the construction and operational stages are considered to be acceptable given the full implementation of the proposed mitigation measures. This is largely due to the proposed alignment of the SBF will closely follow the alignment for the existing boundary fence for much of its length and so the impacts on the landscape resources and character and visual amenity available to VSRs are not likely to be significant. In addition the movement of the fence to follow the new red alignment in some locations will benefit the visual amenity of adjacent residents and reveal views of the wider landscape.

## **2.8 Cultural Heritage**

- 2.8.1 Based on the findings of the baseline study, only the proposed new boundary road alignments at Pak Fu Shan and Lin Ma Hang of Section 3 have some archaeological potential. As part of those areas currently cannot be accessed, an archaeological survey should be undertaken after land resumption and before commencement of the construction works. Mitigation measures should be designed and implemented by the project proponent in consultation with the Antiquities and Monuments Office if archaeological interests are identified by the archaeological survey.
- 2.8.2 No major adverse impacts towards built heritage have been identified. Minor impacts may occur during the construction phase to resources in close proximity to the proposed construction works. No adverse impacts are expected to arise during the operational phase of the project. The project will not cause any insurmountable impacts to built heritage resources if the mitigation measures as recommended are properly implemented.

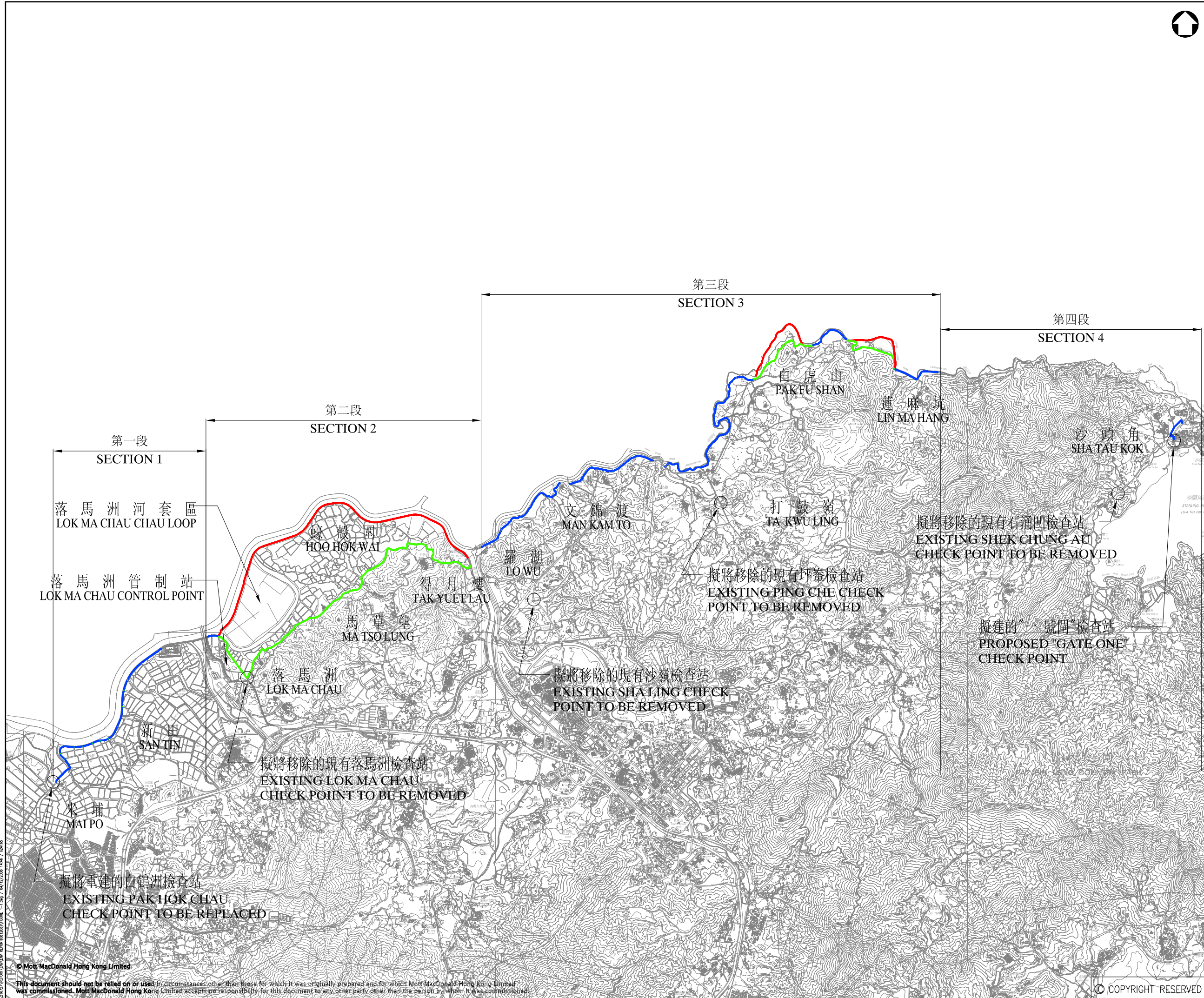
### **3 CONCLUSIONS**

- 3.1.1 This EIA has provided information on the nature and extent of environmental impacts arising from the construction and operational phase of the proposed project and has revealed that no insurmountable environmental issues.



圖例：  
LEGEND:

- 建議於現有邊界巡邏通路興建的輔助邊界圍網  
PROPOSED SECONDARY BOUNDARY FENCE  
ALONG EXISTING BOUNDARY PATROL ROAD
- 建議的主要及輔助邊界圍網及新邊界巡邏通路  
PROPOSED NEW BOUNDARY PATROL ROAD WITH  
PRIMARY AND SECONDARY BOUNDARY FENCES
- 擬將移除的現有邊界圍網  
EXISTING BOUNDARY FENCE TO BE REMOVED



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Project  
CONSTRUCTION OF A SECONDARY  
BOUNDARY FENCE AND NEW SECTIONS  
OF PRIMARY BOUNDARY FENCE  
AND BOUNDARY PATROL ROAD

Title  
概覽圖  
GENERAL LAYOUT PLAN

Designed	WHC	Eng.Chk.	WHC	
Drawn	MCL	Coordination	WHC	
Dwg.Chk.	WHC	Approved	TI	
Scale	Project 216727		Status	
	N.T.S.		INF	
	CAD File			
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Drawing No.	Figure 1.1 (圖 1.1)			Rev