# **Legislative Council Panel on Transport**

# **Central Kowloon Route and Improvement to Tuen Mun Road**

### **PURPOSE**

This paper seeks Members' views on our proposals on-

- (a) increasing the approved project estimate of **582TH**Central Kowloon Route Consultants' Design
  Fees and Site Investigations, in order to carry out
  the investigations, impact assessments and design
  of the Central Kowloon Route; and
- (b) further improvement to Tuen Mun Road.

# <u>582TH CENTRAL KOWLOON ROUTE – CONSULTANTS' DESIGN</u> FEES AND SITE INVESTIGATIONS

#### **BACKGROUND**

- 2. In April 1998, Finance Committee approved the upgrading of **582TH** "Central Kowloon Route consultants' design fees and site investigations" to Category A at an estimated cost of \$99.0 million in MOD prices.
- 3. We started the engineering review of the Central Kowloon Route (CKR) project in its original alignment and dual two-lane configuration in June 1998 and the review was completed in September 1999.
- 4. In September 1998, the Administration gazetted the original scheme of the then South East Kowloon Development (SEKD) (now known as Kai Tak Development) under the Town Planning Ordinance (Cap. 131).

In response to the public's views, the Administration prepared an outline concept plan in June 1999 for the revised scheme of SEKD reducing the extent of reclamation from 299 to 161 hectares. In the light of this revised scheme, we started a study on the alternative alignment for CKR in August 1999. The study recommended the option which passes through the bus terminus at Kowloon City Ferry Pier.

5. Subsequent to the judgement of the Court of Final Appeal in January 2004<sup>1</sup>, the Kai Tak Planning Review was commissioned in July 2004, with "no reclamation" as the starting point. According to the Kai Tak Planning Review, it is recommended that part of CKR can be built in the form of an immersed tube tunnel to avoid reclamation (see paragraph 16 below).

#### PROJECT SCOPE AND NATURE

- 6. The approved scope of **582TH** comprises the review, detailed design and associated site investigations for the CKR project in its original alignment and lane configuration.
- The engineering review and associated site investigations for the CKR project was completed in 1999 (hereinafter referred to as the first consultancy agreement and the first site investigation contract). However, in order to cope with the changes in the scheme for Kai Tak Development that took place in the past few years, the alignment of CKR has to be revised. A dual three-lane configuration has been adopted to meet the anticipated traffic demand between east and west Kowloon. We propose to increase the APE to cover the additional design and site investigation costs for the dual three-lane CKR in the revised alignment. Plans showing the original and revised alignments of CKR and typical sections of the tunnel are at **Enclosure 1**.
- 8. We plan to start the investigation, impact assessments and preliminary design for the revised alignment of CKR in March 2007 for completion in July 2008. We will then start the detailed design for completion in 2011 to enable commencement of construction of CKR in 2012 for completion by 2016.

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<sup>&</sup>lt;sup>1</sup> CFA clarified that the presumption against reclamation in section 3 of the Ordinance can only be rebutted if a single test, that is, "the overriding public need test", could be satisfied. Public needs are community needs and include the economic, environmental and social needs of the community. A need should only be regarded as overriding if it is a compelling and present need and there is no reasonable alternative to reclamation.

### **JUSTIFICATION**

- 9. Following a review of the implementation programme and financial situation, we consider it necessary to increase the APE of **582TH** from \$99.0 million by \$93.3 million to \$192.3 million to cover the additional cost arising from the following
  - (a) revision of the alignment resulting in an increase in the length of CKR and its tunnel;
  - (b) change of lane configuration from dual two-lane to dual three-lane; and
  - (c) use of immersed tube tunnel for the portion across the water of Kowloon Bay.

Details of the increase in cost are set out in paragraphs 13 to 16 below.

### The need for CKR

- 10. The east-west traffic movements across central Kowloon are primarily served by Lung Cheung Road, Boundary Street, Prince Edward Road West, Argyle Street, Waterloo Road, Gascoigne Road Flyover and Chatham Road North. Most of these routes are already operating at full capacity at peak hours. Apart from Lung Cheung Road and Gascoigne Road Flyover, the rest of these existing east-west road links have frequent frontage accesses and signal controlled junctions, which are constraining the traffic flows of these road links.
- 11. The proposed CKR will connect west Kowloon with the proposed Kai Tak Development and the road network in Kowloon Bay. It will provide a new strategic road link across central Kowloon and relieve traffic congestion on the existing east-west road links.

# Revised alignment

12. The Director of Highways (D of Hy) engaged consultants in June 1998 with an aim to carry out the engineering review and detailed design of the CKR. The design of CKR at that time was a 3.9-kilometre (km) trunk road with about 2.6 km of dual two-lane tunnel connecting the existing Yau Ma Tei Interchange in the west with the proposed road network

under the original SEKD scheme in the east. In September 1999, the consultants completed the engineering review.

13. In view of the change in the SEKD scheme, the alignment of CKR has to be revised. D of Hy commissioned the consultants in August 1999 to carry out an alternative alignment study focusing on the alignment of CKR to the east of Ho Man Tin. The study recommended a revised alignment passing through the bus terminus at Kowloon City Ferry Pier to match with the revised SEKD scheme. The revised alignment allows the tunnel to run at a greater depth within the bedrock stratum, thus substantially reducing the effects of tunnel construction on existing buildings, roads and services in the To Kwa Wan area. It can accommodate the tunnel in a conventional side-by-side configuration, and is capable of expanding to dual three-lane without involving adding significant land resumption or reprovisioning requirement. The approximate length of the CKR in its revised alignment is 4.7 km, in which an approximate length of 3.8 km will be in the form of tunnel. The length of CKR and that of its tunnel are longer than those in the original alignment by about 21% and 46% respectively. The revision in the alignment results in an additional cost of about \$47.4 million.

# Change of lane configuration from dual two-lane to dual three-lane

- 14. In April 2002, Commissioner for Transport (C for T) carried out a traffic review on the dual two-lane CKR option. The results indicated that the dual two-lane CKR would be operating above capacity during peak periods immediately after its opening. Given the one-off opportunity to build this tunnel, D of Hy proposed to adopt a dual three-lane tunnel configuration to cope with the anticipated traffic demand. The change of lane configuration will result in an additional cost of about \$27.5 million.
- 15. In September 2006, C for T re-assessed and affirmed the need for a dual three lane CKR. The projected volume to capacity (V/C) ratios<sup>2</sup> of major east-west road links in 2016 and 2021 with and without CKR are as follows –

- 4 -

Volume to capacity (V/C) ratio is an indicator which reflects the performance of a road. A V/C ratio equal to or less than 1.0 means that a road has sufficient capacity to cope with the volume of vehicular traffic under consideration and the resultant traffic will flow smoothly. A V/C ratio above 1.0 indicates the onset of congestion; that above 1.2 indicates more serious congestion with traffic speeds deteriorating progressively with further increase in traffic.

V/C Ratio	Without CKR (without widening of Gascoigne Road Flyover)	two-lane CKR of (assuming widening of GRF		With dual three-lane CKR (assuming widening of GRF together with CKR)	
	2016	2016	2021	2016	2021
CKR	-	1.1	1.2	0.9	0.9
Gascoigne Road Flyover (GRF) <sup>3</sup>	>1.3	1.0	1.1	0.9	0.9
Chatham Road North	>1.3	0.9	1.0	0.9	0.9
Lung Cheung Road	1.3	1.0	1.1	1.0	1.0
Waterloo Road	1.3	1.0	1.1	1.0	1.1
Other major roads parallel to CKR <sup>4</sup>		0.9	1.0	0.9	0.9

### Use of immersed tube tunnel

16. In the light of the judgment of the Court of Final Appeal (CFA) on 9 January 2004 regarding the Protection of Harbour Ordinance (Cap. 531)<sup>5</sup>, the Administration undertook to re-plan the Kai Tak Development and review the relevant works proposals including the concerned portion of CKR to ensure that the development will be in full

The existing GRF runs through Yau Ma Tei Multi-storey Carpark Building (YMTMCB). With the demolition of YMTMCB under the CKR project, we undertake to investigate the feasibility of the widening of GRF from single two-lane to dual two-lane standard under a separate project. We plan to complete the widening works in association with CKR in 2016.

<sup>&</sup>lt;sup>4</sup> Other major routes parallel to CKR include Argyle Street, Boundary Street and Prince Edward Road West.

<sup>&</sup>lt;sup>5</sup> CFA clarified that the presumption against reclamation in section 3 of the Ordinance can only be rebutted if a single test, that is, "the overriding public need test", could be satisfied. Public needs are community needs and include the economic, environmental and social needs of the community. A need should only be regarded as overriding if it is a compelling and present need and there is no reasonable alternative to reclamation.

compliance with the CFA requirements. The present proposal is to build the portion of CKR in the water in Kowloon Bay between Kowloon City Ferry Pier and Kai Tak Runway in the form of an immersed tube tunnel in order to avoid reclamation. The proposed use of immersed tube tunnel will result in an additional cost of about \$14.2 million.

#### FINANCIAL IMPLICATIONS

- 17. We need to carry out investigation, impact assessments and preliminary design to confirm the feasibility of the revised alignment of the dual three-lane CKR before we can embark on the detailed design of CKR.
- 18. We have spent \$56.3 million on the engineering review of the CKR and its associated site investigations, including the alternative alignment study to formulate the revised alignment. Upon a review of the financial position of the project, we consider it necessary to increase the APE of **582TH** from \$99.0 million by \$93.3 million to \$192.3 million in MOD prices (see paragraph 19 below) in order to cover the additional consultants' design fees and site investigation costs due to the changes mentioned in paragraphs 13 to 16 above.
- 19. A breakdown of the proposed increase of \$93.3 million is as follows –

	Factor	Proposed increased amount in MOD prices (\$ million)	% of the total increased amount
Ado	ditional costs associated with -		
(a)	Revision to alignment with an increase in the length of CKR and its tunnel by about 21% and 46% respectively	47.4	50.8%
(b)	Change of lane configuration from dual two-lane to dual three-lane	27.5	29.5%

	Factor	Proposed increased amount in MOD prices (\$ million)	% of the total increased amount
(c)	Use of immersed tube tunnel for the portion across the waters of Kowloon Bay	14.2	15.2%
(d)	Adjustment of contingencies	$4.2^6$	4.5%
		93.3	100.0

A breakdown by man-months of the estimate for consultants' fees is at **Enclosure 2**.

- 20. We intend to first employ a consultant for the investigation, impact assessment and preliminary design and later employing another consultant for the detailed design work. We will employ these consultants on lump-sum bases, with provision for price fluctuation as the duration of the consultancies will exceed 12 months. These consultants will supervise the site investigation works under contracts to be awarded in the preliminary design and detailed design stages through a competitive tendering process.
- 21. The proposed design and site investigation works will not give rise to any recurrent expenditure.

#### PUBLIC CONSULTATION

22. We informed the Legislative Council (LegCo) Panel on Transport in June 2001 of the revised alignment for CKR. We then consulted the Panel on the revised alignment and dual three-lane configuration of CKR on 26 April 2002. Members supported the revised alignment and dual three-lane configuration of CKR.

The original contingencies in the APE are \$8.2 million. The increase of \$4.2 million is for a total of \$12.4 million allowed for the remaining works offset by the original contingencies.

We consulted the Traffic and Transport Committees (T&TCs) of the Yau Tsim Mong District Council (DC), Kowloon City DC and Kwun Tong DC on 7 September, 28 September and 19 October 2006 on the revised alignment respectively. All three T&TCs supported the implementation of the CKR project.

#### ENVIRONMENTAL IMPLICATIONS

- 24. CKR is a designated project under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499). An environmental permit is required for the construction and operation of the project. We will carry out an EIA study and submit the EIA report to the Director of Environmental Protection for approval under the EIA Ordinance.
- 25. The proposed design work will not give rise to any adverse environmental implications. We will implement standard environmental pollution control measures to manage the environmental impacts of the associated site investigation works. The site investigation works will only generate a negligible amount of construction and demolition (C&D) materials. We will require the design consultants to fully consider measures to minimise the generation of C&D materials and to reuse/recycle C&D materials as much as possible in the future implementation of the CKR.

# LAND ACQUISITION

26. The proposed design and site investigation works do not require any land acquisition. However, land acquisition will be required for the construction of the CKR project. We will ascertain the details and scope of the land acquisition in the detailed design stage.

#### REPROVISIONING OF AFFECTED FACILITIES

27. CKR will necessitate the reprovisioning of the affected government and institutional facilities<sup>7</sup> in Yau Ma Tei area. The

The existing government and institutional buildings and facilities will be demolished to make way for CKR. These facilities include the Kowloon Government Offices, the Yau Mai Tei Multi-storey Carpark building, the

arrangements for the reprovisioning works and their locations are at **Enclosures 3 and 4** respectively.

# THE WAY FORWARD

28. We intend to submit the proposal to the Public Works Sub-Committee and Finance Committee of the Legislative Council on 19 December 2006 and 12 January 2007 respectively for the increase in APE. Subject to funding approval, we plan to start the investigation study in March 2007 for completion in September 2008. We will then start the detailed design for completion by 2011.

# **IMPROVEMENT TO TUEN MUN ROAD**

#### **BACKGROUND**

We consulted Members on the reconstruction and improvement of Tuen Mun Road (TMR) on 23 April 2004 and 22 April 2005. We proposed to upgrade the expressway section of TMR to the prevailing expressway standard as far as practicable and implement short to medium term measures to improve the traffic conditions of TMR, including widening of the section of TMR at Tsing Tin Interchange from dual 2-lane to dual 3-lane.

# **Widening of Town Centre Section**

- 30. Subsequently, we have further consulted Tuen Mun District Council (TMDC) on the proposals. Taking into account the views of the TMDC and evaluating different options for improving the traffic conditions of the TMR Town Centre Section (TMRTCS), we further propose to widen the TMRTCS. The works include
  - (a) widening of about 1.5 km of TMRTCS from Yan Oi Town Square to Wong Chu Road from dual 2-lane to dual 3-lane (Enclosure 5), including -

Yau Ma Tei Jockey Club Polyclinic and Specialist Clinic Extension and the Yau Ma Tei Police Station. Owing to the reduced car parking demand, the Yau Ma Tei Multi-storey Carpark does not need to be reprovisioned. We intend to commence the reprovisioning works in 2008 for completion in 2011.

# (i) Wong Chu Road Section:

Kowloon bound to provide new flyover extending from Hing Tuen Road, running along Tsing Hoi Circuit and with **TMR** merging Kowloon bound carriageway near Sam Shing Hui;

Yuen Long bound - to widen the carriageway from 2-lane to 3-lane; and

- (ii) Tuen Mun Town Plaza Section: to create an additional traffic lane in each direction by reducing the width of existing central median;
- (b) reprovisioning of four footbridges across the section of TMRTCS mentioned in (a) above; and
- (c) provision of associated environmental mitigation measures to be identified by the Environmental Impact Assessment.
- 31. The proposed widening of the TMRTCS could effectively increase the capacity of the section. The projected v/c ratios with and without the proposed widening are set out below –

		2016 V/C Ratio <sup>8</sup>		
Road section	Direction	Without Proposed Widening	With Proposed Widening	
Pui To Road – Tuen Hing Road	Kowloon bound	1.2	0.8	
Tuen Thing Road	Yuen Long bound	1.2	0.8	
Tuen Hing Road – Wong	Kowloon bound	1.3	0.9	
Chu Road	Yuen Long bound	1.2	0.9	

# **Long Term Planning – Northwest New Territories Traffic and Infrastructure Review**

As reported to Members on 22 April 2005, the Northwest New 32. Territories Traffic and Infrastructure Review concluded that with the existing and committed road networks, together with improvement measures, we would be able to cope with traffic (including those to be generated from HK-SWC and the Hong Kong-Zhuhai-Macao Bridge) up to at least 2016. The road network could in general cope with the traffic demands and would operate within manageable levels such that no new major highway infrastructure projects will be required. that the new transport infrastructure beyond 2016 will be provided in a timely manner, we have been conducting further investigation and engineering feasibility studies on the proposed road projects as necessary, including the Tuen Mun Eastern Bypass, the Tuen Mun Western Bypass and Tuen Mun -Chek Lap Kok Link, and will soon commence the studies of the proposed Tsing Yi- Lantau Link. The objective was to get the necessary advance work done as much as possible at the present stage so that, when the implementation programme for the various planned developments in the region becomes clearer, construction can start in a timely manner.

#### WAY FORWARD

33. In addition to the short term improvement measures for

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A v/c ratio is normally used to reflect traffic situation during peak hours. A v/c ratio below 1 is considered acceptable. A v/c ratio above 1.0 indicates the onset of mild congestion and a v/c ratio between 1.0 and 1.2 would indicate a manageable degree of congestion. A v/c ratio above 1.2 indicates the onset of more serious congestion.

improving the traffic conditions of TMR<sup>8</sup> which have already been implemented, we would proceed to take forward the following three projects to further improve the overall operation of the TMR –

- (a) widening of the section at Tsing Tin Interchange from a dual 2-lane to dual 3-lane carriageway;
- (b) widening of the TCS from Yan Oi Town Square to Wong Chu Road from a dual 2-lane to dual 3-lane carriageway; and
- (c) reconstructing and improving of the expressway section to meet the prevailing expressway standard, including the provision of full-width hard shoulder, as far as practicable.
- 34. We shall consult Members again when individual projects are ready for funding application. Subject to the satisfactory passage of the necessary statutory procedures, we plan to commence the construction works at Tsing Tin Interchange in 2007 for completion by 2009; commence the construction works at the TCS in 2008 for completion by 2010; and commence the construction works at the expressway section in stages in 2008 for staged completion by 2012.

#### ADVICE SOUGHT

35. Members are invited to comment on this paper.

Environment, Transport and Works Bureau November 2006

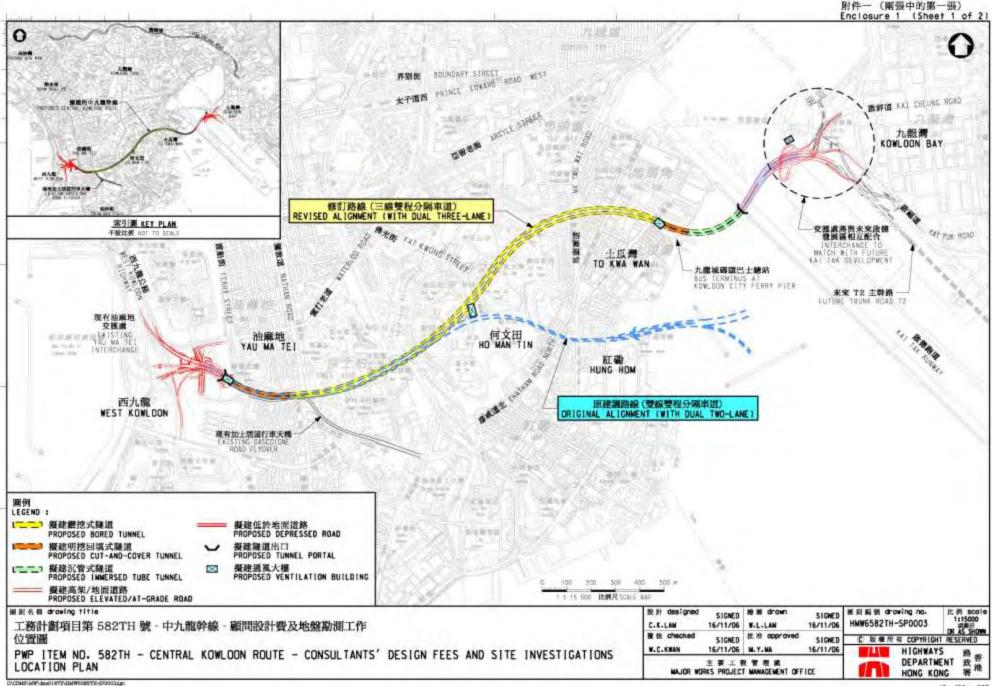
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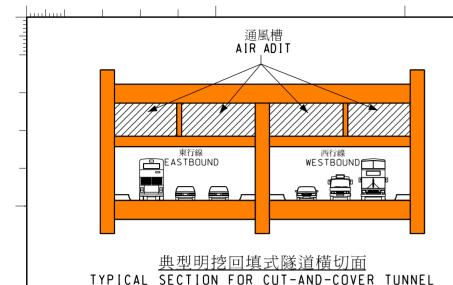
<sup>&</sup>lt;sup>8</sup> The short term measures include:

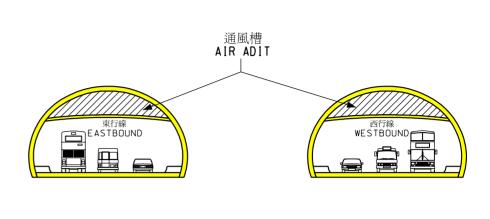
<sup>(</sup>a) lengthening of bus bay on TMR southbound near Tseng Choi Street;

<sup>(</sup>b) lengthening and improving road markings of the merging lane from Tuen Hi Road into TMR TCS: and

<sup>(</sup>c) modification of some directional signs to encourage and facilitate motorists from Tuen Mun New Town to use parallel routes in lieu of TMR TCS for their journeys to urban area.

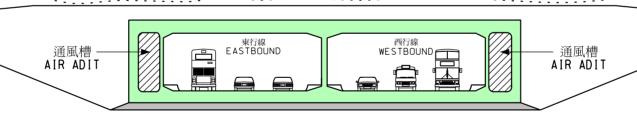






典型鑽挖式隊渞橫切面 TYPICAL SECTION FOR BORED TUNNEL

現有海床水平 EXISTING SEABED LEVEL



# 典型沉管式隊道橫切面 TYPICAL SECTION FOR IMMERSED TUBE TUNNEL

圖則名稱 drawing title

工務計劃項目第 582TH 號 - 中九龍幹線 - 顧問設計費及地盤勘測工作 中九龍幹線典型隧道橫切面

PWP ITEM NO. 582TH - CENTRAL KOWLOON ROUTE - CONSULTANTS' DESIGN FEES AND SITE INVESTIGATIONS TYPICAL SECTION FOR TUNNELS OF THE CENTRAL KOWLOON ROUTE

設計 designed SIGNED SIGNED C.K.LAM 16/11/06 W.L.LAM 16/11/06 覆核 checked 批准 approved SIGNED SIGNED W.C.KWAN 16/11/06 M.Y.MA 16/11/06 主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE

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HIGHWAYS DEPARTMENT HONG KONG

路政署香港

# 582TH – Central Kowloon Route – consultants' design and site investigations

# Breakdown of estimate for remaining consultants' fees (in MOD prices)

			Average		
		<b>Estimated</b>	$MPS^*$		<b>Estimated</b>
		man-	salary	Multiplier	fee
Consultants' staff costs		months	point	(Note 1)	(\$million)
(a) Investigation, impact	Professional	100	38	2.0	10.9
assessments and preliminary design	Technical	160	14	2.0	5.8
(b) Detailed design	Professional	300	38	2.0	32.6
	Technical	500	14	2.0	18.0
(c) Preparation of tender	Professional	25	38	2.0	2.7
document	Technical	60	14	2.0	2.2
(d) Supervision of site	Professional	30	38	1.6	2.6
investigations	Technical	60	14	1.6	1.7
		Total co	nsultants	'staff costs	76.5
Out-of-pocket expenses (Note 2)				-	
Site investigations					47.1
				Total	123.6

<sup>\*</sup> PS = Master Pay Scale

#### **Notes:**

- 1. A multiplier of 2.0 is applied to the average Master Pay Scale (MPS) point to arrive at the full staff costs including the consultants' overheads and profit, as the staff will be employed in the consultant's offices (as at 1 January 2006, MPS pt. 38 = \$54,255 per month, and MPS pt. 14 = \$18,010 per month). A multiplier of 1.6 is applied in the case of site staff supplied by the consultants.
- 2. Out-of-pocket expenses are the actual costs incurred. The consultants are not entitled to any additional payment for overheads or profit in respect of these items.
- 3. The figures given above are based on estimates prepared by the Director of Highways. We will know the actual man-months and actual fees only when we have selected the consultants through the usual competitive lump-sum fee bid system.

# Reprovisioning Arrangements for Government and Institutional Facilities affected by CKR project

Government and institutional (G&I) facilities undertaken by Director of Architectural Services under separate projects

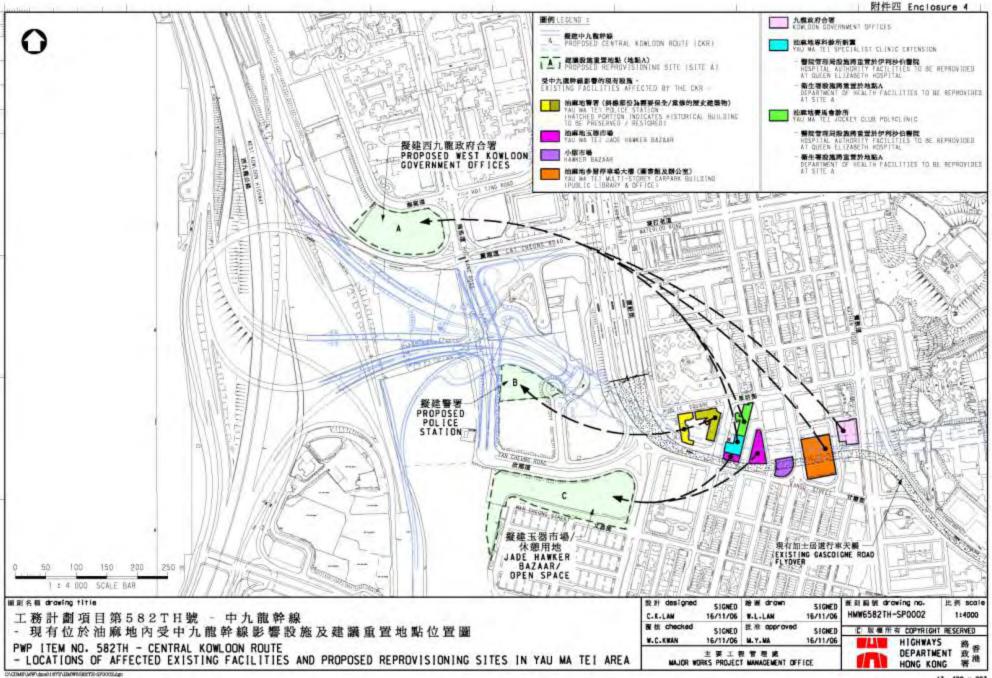
Affected Buildings/Facilities	Proposed Reprovisioning Works
Yau Ma Tei Jockey Club	
Polyclinic*	
a) Department of Health facilities	West Kowloon Government Offices (WKGO) (Site A)
	A new building in Queen Elizabeth
b) Hospital Authority facilities	Hospital
Yau Ma Tei Specialist Clinic	
Extension	
a) Department of Health facilities	WKGO (Site A)
b) Hospital Authority facilities	A new building in Queen Elizabeth
	Hospital
Kowloon Government Offices	WKGO (Site A)
Yau Ma Tei Police Station**	New police station (Site B)
Yau Ma Tei Multi-storey Car Park	
Building and Yau Ma Tei Public	
Library:	
a) Carparks	Reprovisioning not needed
b) Library & offices	WKGO (Site A)

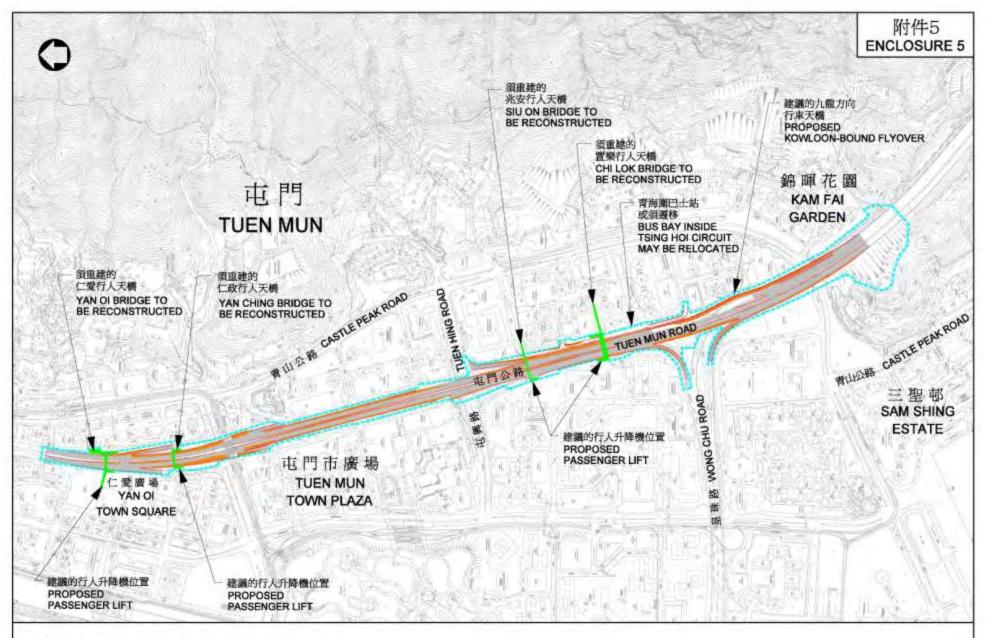
<sup>\*</sup> We will investigate the feasibility of retaining Yau Ma Tei Jockey Club Polyclinic.

<sup>\*\*</sup> The Yau Ma Tei Police Station was built in 1922 and is a Grade III historical building. We will only demolish the non-historical Annex to the Police Station. We intend to take down the affected portion of the original Police Station and restore it after the construction of the tunnel.

# Minor G&I facilities to be included in the CKR project

Affected Buildings/Facilities	Proposed Reprovisioning Works
Post Office Counter portion in	Temporary reprovisioning and
Kowloon Government Offices	subsequent reinstatement in the vicinity
Yau Ma Tei Jade Hawker	Temporary reprovisioning in Man
Bazaar	Cheong Street (Site C) and
	subsequent reinstatement
Kansu Street Hawker Bazaar	Temporary reprovisioning in the
	vicinity and subsequent
	reinstatement
Other Food and Environmental	Temporary reprovisioning in the
Hygiene Department facilities	vicinity and subsequent
(including refuse collection	reinstatement (to be carried out with
point and public toilet)	the CKR tunnel works)





屯門市中心路段交通改善工程 TRAFFIC IMPROVEMENTS TO TUEN MUN ROAD TOWN CENTRE SECTION