

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 – HIGHWAYS

Transport – Roads

825TH – Tuen Mun – Chek Lap Kok Link and Tuen Mun Western Bypass

Members are invited to recommend to Finance Committee –

- (a) the upgrading of part of **825TH**, entitled “Tuen Mun – Chek Lap Kok Link and Tuen Mun Western Bypass – investigation and preliminary design”, to Category A at an estimated cost of \$88.6 million in money-of-the-day prices; and
- (b) the retention of the remainder of **825TH** in Category B.

PROBLEM

We need to construct the Tuen Mun – Chek Lap Kok Link (TM-CLKL) and Tuen Mun Western Bypass (TMWB) to connect Northwest New Territories (NWNT) with Lantau in order to cope with the anticipated traffic demand in NWNT and enhance the overall efficiency of the transport network of Hong Kong.

/PROPOSAL.....

PROPOSAL

2. The Director of Highways, with the support of the Secretary for Transport and Housing, proposes to upgrade part of **825TH** to Category A at an estimated cost of \$88.6 million in money-of-the-day (MOD) prices to engage consultants to undertake the investigation and preliminary design (I&PD) for the TM-CLKL and TMWB (the Project).

PROJECT SCOPE AND NATURE

3. The scope of **825TH** includes –
- (a) the construction of the TM-CLKL, which is a dual two-lane highway approximately 9 kilometres (km) long connecting TMWB at the southern coast of Tuen Mun Area 40 in the north with the Hong Kong International Airport (the Airport) and Tung Chung in the south. About 4 km of the TM-CLKL is in the form of immersed tube tunnel;
 - (b) the construction of the TMWB, which is a dual two-lane highway approximately 8.5 km long connecting the Kong Sham Western Highway in the north, and the TM-CLKL in the south. About 5.8 km of the TMWB is in the form of land tunnels; and
 - (c) the associated building, civil, structural, marine, electrical and mechanical, landscape, and environmental protection and mitigation works.

_____ A plan showing the conceptual layout of the Project is at Enclosure 1.

4. The part of the Project we now propose to upgrade to Category A comprises –
- (a) an investigation study of the Project, comprising –
 - (i) a review of the findings of previous studies and examination of alignments and design options; and
 - (ii) impact assessments on environment, traffic, marine, aviation and other related aspects;

/(b)

- (b) preliminary design of the works described in paragraph 3 above; and
- (c) associated site investigations and works supervision.

5. We plan to start the I&PD study of the proposed works in May 2008 for completion in May 2010. The cost of the construction works of the Project is estimated to be about \$20 billion. We plan to commence construction in 2011 for completion by 2016.

JUSTIFICATION

6. On 9 July 2007, we updated the Legislative Council Panel on Transport (the Panel) on the Northwest New Territories (NWNT) Traffic and Infrastructure Review (the Review) conducted by the Transport Department. According to the findings of the Review, Tuen Mun Road (TMR), Ting Kau Bridge, Lantau Link and North Lantau Highway (NLH) will be operating beyond capacity after 2016 due to the increase in cross boundary traffic, developments in NWNT, and possible developments in North Lantau, including the Airport developments, the Lantau Logistics Park and the Hong Kong-Zhuhai-Macao Bridge (HZMB). The projected volume to capacity (v/c) ratio¹ of the Base Network² in year 2016 and 2021 are shown in Enclosure 2. It is necessary to provide a new highway connection between the NWNT and Lantau to cope with the anticipated increase in traffic demand.

7. The Project is one of the possible highway infrastructure options identified under the Review to meet the anticipated traffic demand of the NWNT

/and

¹ A v/c ratio is normally used to reflect traffic situation during peak hours. A v/c ratio below 1.0 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.

² The “Base Network” refers to the road network assumed to be in place in the NWNT and Lantau by 2016. At the time we presented the Review results to the Legislative Council Panel on Transport in July 2007, the “Base Network” comprises North Lantau Highway Connection between HZMB and NLH, Lantau Road P1 from Tung Chung to Sham Shui Kok, widening of TMR at Tsing Tin Interchange, reconstruction and improvement to TMR expressway section, and widening of TMR from Yan Oi Square to Wong Chu Road.

and Lantau after 2016. The feasibility and advantages of the Project, as well as its competitive edges in terms of traffic benefits, planning flexibility and strategic functions over the other possible highway options identified under the Review have been examined under previous engineering feasibility studies. The results of the studies concluded that the Project will provide the most direct route between the NWNT and Lantau, joining the Kong Sham Western Highway, the port back-up areas in NWNT, the Tuen Mun River Trade Terminal, the proposed Ecopark, the Airport, the proposed Lantau Logistics Park, HZMB, North Lantau developments and possibly a new container terminal in Lantau. Upon completion, the new route will significantly reduce the journey time between the NWNT and Lantau.

8. The Project will also release some capacity of the existing roads for urban bound traffic, offer strong support to the logistics industry in Lantau and reinforce the Airport as an international and regional aviation hub through providing an alternative land access for the Airport. Compared with the other highway options, the Project will provide better planning flexibility for possible future expansion of the road network from the NWNT to the urban areas in the “very long-term”³.

9. The Panel showed across-the-board support for going ahead with the Project.

10. The proposed I&PD study is to determine the alignment, general layout, land requirement and impacts of the Project. We will carry out an environmental impact assessment (EIA) in association with the I&PD study in order to identify the environmental impacts and the mitigation measures required, including those related to heritage preservation. We will also carry out site investigation works to provide geotechnical and geological information for subsequent design work. As the Highways Department does not have sufficient in-house resources, we need to employ consultants to undertake the I&PD study and the associated site investigation works.

FINANCIAL IMPLICATIONS

11. We estimate the cost of the I&PD study to be \$88.6 million in MOD prices (see paragraph 12 below), made up as follows –

/\$ million

³ “Very long-term” stands for year 2023 and beyond.

		\$ million	
(a)	Consultants' fees	51.3	
	(i) review of the findings of previous studies, and examination of alignments and design options	4.5	
	(ii) impact assessments (environmental, traffic, marine and aviation, etc.)	14.8	
	(iii) preliminary design	30.2	
	(iv) supervision of site investigation	1.8	
(b)	Site investigation	27.7	
(c)	Contingencies	7.9	

	Sub-total	86.9	(in September 2007 prices)

(d)	Provision for price adjustment	1.7	

	Total	88.6	(in MOD prices)

———— A breakdown of the estimated consultants' fees is at Enclosure 3.

12. Subject to approval, we will phase the expenditure as follows –

Year	\$ million (Sep 2007)	Price Adjustment Factor	\$ million (MOD)
2008 – 2009	12.0	1.00750	12.1
2009 – 2010	51.2	1.01758	52.1
2010 – 2011	21.6	1.02775	22.2
			/Year

Year	\$ million (Sep 2007)	Price Adjustment Factor	\$ million (MOD)
2011 – 2012	2.1	1.03803	2.2
	86.9		88.6

13. We have derived the MOD estimate on the basis of the Government's latest forecast of trend rate of change in the prices of public sector building and construction input for the period 2008 to 2012. We will engage consultants to undertake the I&PD study on a lump sum basis with provision for price adjustment as the duration of the consultancy agreements will exceed 12 months. The consultants will supervise the site investigation works under contracts to be awarded through competitive tendering.

14. The proposed I&PD and site investigation will have no recurrent financial implication.

PUBLIC CONSULTATION

15. We reported the initial findings of the Review to the Panel in April 2005. At the Panel's meeting on 9 July 2007, we reported the findings of the Review and consulted the Panel on our plan to proceed with the I&PD study of the Project. The Panel generally supported the early implementation of the Project.

16. We consulted the Transport Advisory Committee on 6 July 2007 on the findings of the Review and our plan to proceed with the I&PD study of the Project. The Committee also supported the early implementation of the Project.

17. We consulted the Islands District Council, the Traffic and Transport Committee (T&TC) of the Yuen Long District Council (YLDC) and the Tuen Mun District Council (TMDC) on 19, 21 and 25 September 2007 respectively. While Members generally supported the implementation of the Project, the YLDC T&TC and TMDC urged for the concurrent planning of the alternative routes linking the NWNT and the urban areas. We will continue to monitor the progress of the various major developments in the region and consider the need to take forward the other highway projects under the Review.

18. We consulted the Panel on 23 November 2007 regarding our plan to submit the funding application to this subcommittee for part-upgrading of the Project to Category A. Members reiterated their support for the early implementation of the Project.

ENVIRONMENTAL IMPLICATIONS

19. The proposed TM-CLKL and TMWB is a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) and an environmental permit is required for the construction and operation of the projects. We will carry out an EIA study to address the potential environmental impacts of the projects in detail. We will submit the EIA report to the Director of Environmental Protection under the EIA Ordinance for approval and will follow the statutory procedures of making the EIA report available for comments by the public and the Advisory Council on the Environment.

20. The proposed I&PD study and site investigation will only generate very little construction waste. We will require the consultants to fully consider measures to minimise the generation of construction waste and to reuse/recycle construction waste as much as possible in the future implementation of the Project.

HERITAGE IMPLICATIONS

21. The proposed I&PD will not affect any heritage site, i.e. all declared monuments, graded historic buildings and sites of archaeological interests. We will investigate in the I&PD study if the Project will affect any heritage site.

LAND ACQUISITION

22. The proposed I&PD and site investigation do not require any land acquisition.

BACKGROUND INFORMATION

23. In November 2005, we engaged consultants to undertake the feasibility study of the Project at an estimated cost of \$11.8 million under **Subhead 6100TX** – “Highway works, studies and investigations for items in Category D of the Public Works Programme”. We completed the feasibility study in March 2007. We included **825TH** in Category B in November 2007.

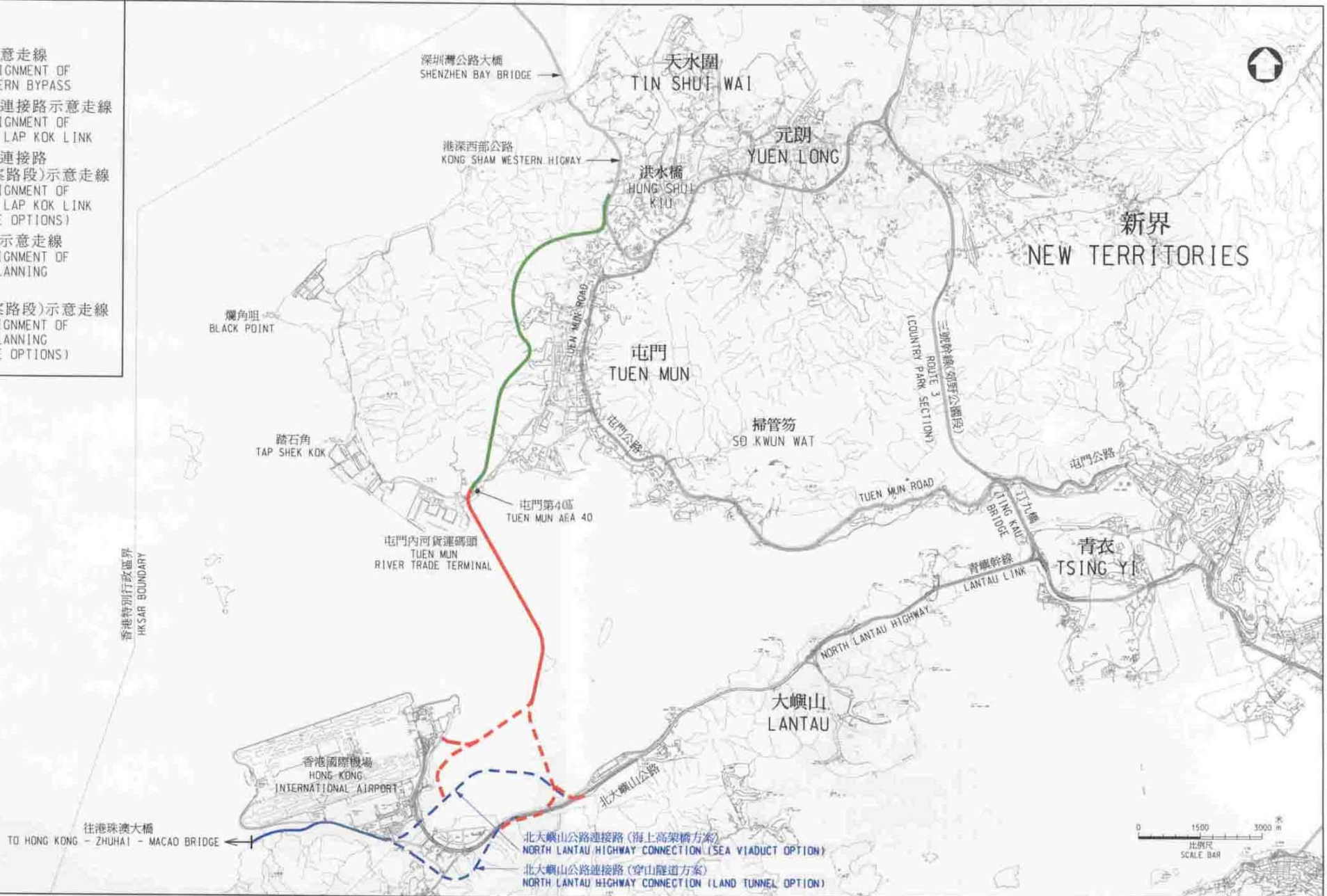
24. The proposed I&PD and site investigation will not involve any tree removal or planting proposals. We will require the consultant to take into consideration the need for tree preservation during the planning and design stages of the Project. We will also incorporate tree-planting proposals, where possible, in the construction phase.

25. We estimate that the I&PD study and site investigation will create about 78 jobs (21 for labourers and 57 for professional/technical staff) providing a total employment of 1 430 man-months.

Transport and Housing Bureau
December 2007

圖例：
LEGEND :

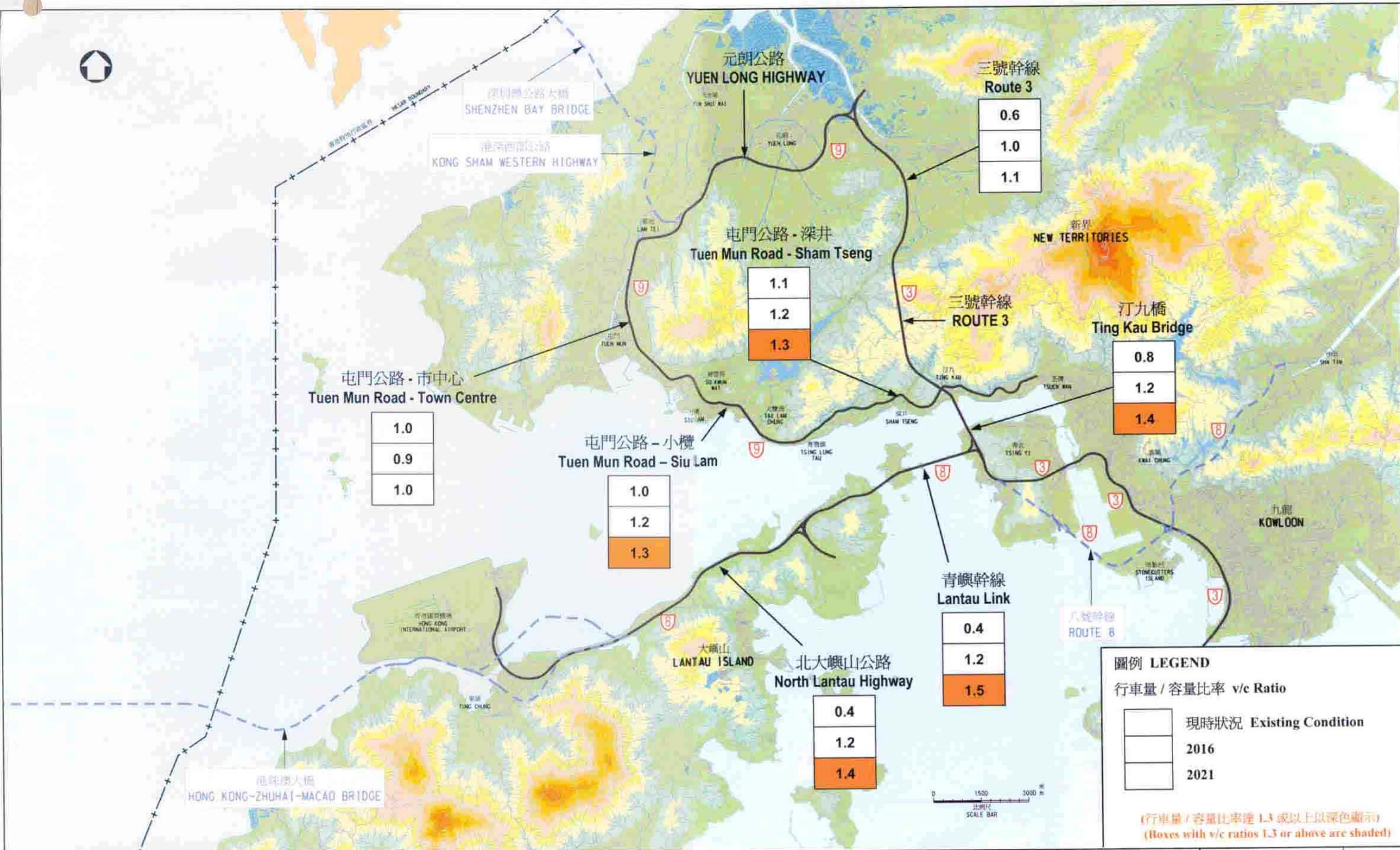
- 屯門西繞道示意走線
INDICATIVE ALIGNMENT OF
TUEN MUN WESTERN BYPASS
- 屯門至赤鱗角連接路示意走線
INDICATIVE ALIGNMENT OF
TUEN MUN-CHEK LAP KOK LINK
- - - 屯門至赤鱗角連接路
(多於一個方案路段)示意走線
INDICATIVE ALIGNMENT OF
TUEN MUN-CHEK LAP KOK LINK
(WITH MULTIPLE OPTIONS)
- 籌劃中的道路示意走線
INDICATIVE ALIGNMENT OF
ROADS UNDER PLANNING
- - - 籌劃中的道路
(多於一個方案路段)示意走線
INDICATIVE ALIGNMENT OF
ROADS UNDER PLANNING
(WITH MULTIPLE OPTIONS)



圖則名稱 drawing title

工務計劃項目第 825TH 號 - 屯門至赤鱗角連接路及屯門西繞道
PWP ITEM NO. 825TH - TUEN MUN-CHEK LAP KOK LINK AND TUEN MUN WESTERN BYPASS

設計 designed	SIGNED	繪圖 drawn	SIGNED	圖則編號 drawing no.	比例 scale
W.W.LAM	16/10/07	H.S.CHAN	22/11/07	HZMN05004-SP0008	1:90000
覆核 checked	SIGNED	批准 approved	SIGNED	© 版權所有 COPYRIGHT RESERVED	
K.P.WONG	22/11/07	C.H.CHEUNG	27/11/07	HIGHWAYS DEPARTMENT 路政署 HONG KONG 香港	
港珠澳大橋香港工程管理局 HONG KONG - ZHUHAI - MACAO BRIDGE HONG KONG PROJECT MANAGEMENT OFFICE					



圖則名稱 drawing title

工務計劃項目第 825TH 號 - 屯門至赤鱗角連接路及屯門西繞道
基本公路網的交通狀況

PWP ITEM NO. 825TH - TUEN MUN-CHEK LAP KOK LINK AND TUEN MUN WESTERN BYPASS
TRAFFIC CONDITION UNDER BASE NETWORK

設計 designed	SIGNED	繪圖 drawn	SIGNED	圖則編號 drawing no.	比例 scale
W.W.LAM	09/11/07	H.S.CHAN	22/11/07	HZMN05004-SP0009	1:110000
覆核 checked	SIGNED	批准 approved	SIGNED	© 版權所有 COPYRIGHT RESERVED	
K.P.WONG	22/11/07	C.H.CHEUNG	27/11/07	HIGHWAYS DEPARTMENT 路政署 HONG KONG 香港	
港珠澳大橋香港工程管理局 HONG KONG - ZHUHAI - MACAO BRIDGE HONG KONG PROJECT MANAGEMENT OFFICE					

Enclosure 3 to PWSC(2007-08)64

825TH – Tuen Mun – Chek Lap Kok Link and Tuen Mun Western Bypass

Breakdown of estimates for consultants' fees and site investigation works

			Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a) Consultants' staff costs						
(i)	Review of the findings of previous studies, and examination of alignments and design options	Professional	26	38	2.0	3.0
		Technical	41	14	2.0	1.5
(ii)	Impact assessments (environmental, traffic, marine and aviation, etc.)	Professional	85	38	2.0	9.7
		Technical	136	14	2.0	5.1
(iii)	Preliminary design	Professional	174	38	2.0	19.8
		Technical	275	14	2.0	10.4
(iv)	Supervision of site investigation	Professional	12	38	1.6	1.1
		Technical	24	14	1.6	0.7
Total consultants' staff costs						<hr/> 51.3
Out-of-pocket expenses						
(Note 2)						
(b) Site investigation						<hr/> 27.7
Total						<hr/> 79.0

* MPS = Master Pay Scale

Note

1. A multiplier of 2.0 is applied to the average MPS point to arrive at the full staff costs including the consultants' overheads and profit as the staff will be employed in the consultants' offices. A multiplier of 1.6 is applied to the average MPS point in the case of resident site staff supplied by the consultants. (At 1 April 2007, MPS pt. 38 = \$56,945 per month and MPS pt. 14 = \$18,840 per month).
2. Out-of-pocket expenses are the actual cost incurred. The consultants are not entitled to any additional payment for the 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 fees only after we have selected the consultants through the usual competitive lump-sum fee bid system.