For discussion **PWSC(2008-09)49**
on 15 December 2008

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 707 – NEW TOWNS AND URBAN AREA DEVELOPMENT
New Territories East Development
Transport – Roads
822TH – Cross Bay Link, Tseung Kwan O

Members are invited to recommend to Finance Committee -

(a) the upgrading of part of **822TH**, entitled "Cross Bay Link, Tseung Kwan O - investigation and preliminary design", to Category A at an estimated cost of $59.1 million in money-of-the-day prices; and

(b) the retention of the remainder of **822TH** in Category B.

PROBLEM

We need to carry out site investigation and preliminary design for the proposed Cross Bay Link (CBL), the purpose of which is to meet the anticipated traffic demand in Tseung Kwan O (TKO).

/PROPOSAL ….

PROPOSAL

2. The Director of Civil Engineering and Development, with the support of the Secretary for Transport and Housing, proposes to upgrade part of **822TH** to Category A at an estimated cost of $59.1 million in money-of-the-day (MOD) prices to engage consultants to undertake the investigation and preliminary design (I&PD) and the associated site investigation works for the CBL.

PROJECT SCOPE AND NATURE

3. The scope of **822TH** (the Project) comprises –

(a) a dual two-lane carriageway of approximately 1.8 kilometres long with a cycle track and a footpath across the Junk Bay mainly on viaduct, connecting the proposed Tseung Kwan O – Lam Tin Tunnel (TKO-LT Tunnel) to Wan Po Road near Area 86 of TKO with the necessary slip roads and junction improvements; and

(b) the associated civil, structural, marine, electrical and mechanical, landscaping, a trunk salt water main, and environmental protection and mitigation works.

A location plan showing the preliminary alignment of the CBL is at Enclosure 1.

4. The part of the Project we now propose to upgrade to Category A comprises –

(a) an investigation study comprising –

(i) a review of the findings of previous studies and design options including the appearance of the feature bridge (a typical cable-stayed feature bridge is shown in Enclosure 2); and

(ii) impact assessments on environment, traffic, marine, heritage and other related aspects;

/(b) ….

(b) the 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 Project in March 2009 for completion in May 2011. We intend to start the construction works in early 2013 for completion in 2016. The cost of the Project is about $2.2 billion.

JUSTIFICATION

6. At present, the TKO Tunnel is the main connection between TKO and other areas in the territory. The Feasibility Study for Further Development of TKO (the "TKO Study") completed in 2005 recommended a new external road network (comprising the CBL and TKO-LT Tunnel) for meeting the long-term transport needs of TKO. According to the traffic impact assessment of the TKO Study, the existing TKO Tunnel would experience serious congestion after 2016 if an alternative external road connection is not provided. It is therefore necessary to complete the CBL in conjunction with TKO-LT Tunnel around 2016 to meet the anticipated traffic demand.

7. The next phase of development of TKO will be concentrated in the town centre area south of Po Yap Road and the southeastern part of TKO along Wan Po Road such as Pak Shing Kok, Area 85, Area 86 (the Lohas Park), etc. According to the traffic impact assessment of the TKO Study, the traffic generated by these new developments and from existing land uses such as TKO Industrial Estate will overload the junctions along Wan Po Road and in the TKO town centre area if the CBL is not provided together with the TKO-LT Tunnel. The projected performance of the critical roundabout at Wan Po Road/Chiu Shun Road and of other traffic signal junctions (as shown in Enclosure 3) during the peak hours with and without the CBL in 2016, after the completion of the TKO-LT Tunnel, are shown in the following table -

/Junction….

Junction	Ratio of Flow to Capacity[1] (for roundabout) or Reserve Capacity[2] (for signalized junction)	
	Without CBL	With CBL
Roundabout		
Wan Po Road / Chiu Shun Road	1.51	0.65
Signalized Junction		
Wan Po Road / Road L781 (to Pak Shing Kok)	-16%	36%
Wan Po Road / Shek Kok Road	-9%	7%
Wan Po Road / Wan O Road (CBL)	-6%	20%
Po Yap Road / Tong Chun Street	-22%	64%
Po Yap Road / Tong Yin Street	-19%	7%
Chui Ling Road / King Ling Road/ Road L681	-26%	10%

8. The completion of the CBL will provide relief to the anticipated congestion of the existing Wan Po Road and other roads in TKO town centre. Moreover, external heavy traffic to and from the southeast industrial area of TKO will be able to by-pass the TKO town centre, thus minimizing adverse traffic and environmental impacts on the residential areas in TKO.

9. At present, Wan Po Road is the only road linking the southeastern part of TKO to the other areas. The commercial and industrial activities in the southeast area of TKO, particularly those in TKO Industrial Estate, would be seriously affected if Wan Po Road is blocked by traffic accidents. The CBL will provide an alternative access to the southeast TKO and therefore significantly increase the reliability of the road network serving this area.

/10. .....

[1] The performance of a roundabout is indicated by its ratio of flow to capacity (RFC). A RFC equals or less than 1.0 is considered acceptable. A RFC above 1.0 indicates that roundabout is overloaded, resulting in traffic queues and longer delay time.

[2] The performance of a traffic signal junction is indicated by its reserve capacity (RC). A positive RC indicates that the junction is operating with spare capacity. A negative RC indicates that junction is overloaded, resulting in traffic queues and longer delay time.

10. The proposed I&PD study is to determine the design options, general layout, land requirements 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 related design works. As the Civil Engineering and Development Department does not have the necessary in-house resources, we need to employ consultants to undertake the I&PD study and the supervision of site investigation works.

FINANCIAL IMPLICATIONS

11. We estimate the cost of the I&PD study and the associated site investigations works to be $59.1 million in MOD prices (see para. 12 below), made up as follows –

			$ million	
(a)	Consultants' fees		22.2	
	(i) review of the findings of previous studies and design options	3.1		
	(ii) impact assessments (environmental, traffic, marine, heritage etc.)	7.7		
	(iii) preliminary design	8.7		
	(iv) supervision of site investigations	2.7		
(b)	Site investigations		26.6	
(c)	Contingencies		4.8	
		Sub-total	53.6	(in September 2008 prices)
(d)	Provision for price adjustment		5.5	
		Total	59.1	(in MOD prices)

/A .....

A breakdown by man-months of the estimate for consultants' fees is at Enclosure 4.

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

Year	$ million (Sept 2008)	Price adjustment factor	$ million (MOD)
2009 – 10	5.1	1.04000	5.3
2010 – 11	30.4	1.08160	32.9
2011 – 12	9.2	1.12486	10.3
2012 – 13	5.1	1.16986	6.0
2013 – 14	3.8	1.21665	4.6
	53.6		59.1

13. We have derived the MOD estimates on the basis of the Government's latest forecast of the trend rate of change in the prices of public sector building and construction output for the period 2009 to 2014. We will engage consultants to undertake the I&PD study on a lump sum basis with provision for price fluctuations as the duration of the consultancy agreement will exceed 12 months. We will tender the proposed site investigation works under a standard re-measurement contract because the quantity of works involved may vary depending on actual ground conditions. The contract for the site investigation works will provide for price adjustments.

14. The proposed I&PD study and the associated site investigation works will not give rise to any recurrent expenditure.

/PUBLIC .....

PUBLIC CONSULTATION

15. We consulted the Sai Kung District Council (SKDC) on 5 June 2007. Members requested for the provision of a cycle track and pedestrian facilities on the CBL. We addressed members' above requests by providing a cycle track and a footpath on the CBL. We consulted the SKDC again on 22 January 2008 and they welcomed the proposed amendments and fully supported the implementation of the project.

16. We consulted the Legislative Council Panel on Transport on 28 November 2008. The Panel supported the proposal in paragraph 2 above.

ENVIRONMENTAL IMPLICATIONS

17. The proposed CBL is a designated project under Schedule 2 of the EIA Ordinance. An environmental permit is required for the construction and operation of the Project. We will carry out an EIA study to address the potential environmental impacts of the Project. We will submit the EIA report to the Director of Environmental Protection for approval under the EIA Ordinance and will follow the statutory procedures of making the EIA report available for comments by the public and the Advisory Council on the Environment.

18. The proposed I&PD study 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. We will incorporate into the detailed design and relevant works contracts all the mitigation measures required and an Environmental Monitoring & Audit programme as recommended in the EIA report.

19. The proposed site investigation works 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 them as much as possible in the future implementation of the construction projects.

/HERITAGE .....

HERITAGE IMPLICATIONS

20. The proposed I&PD study and associated site investigation works will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites/buildings, sites of archaeological interest and Government historic sites identified by the Antiquities and Monuments Office. We will investigate in the I&PD study if the Project will affect any heritage site.

LAND ACQUISITION

21. The proposed I&PD study and the associated site investigation works do not require land acquisition and clearance.

BACKGROUND INFORMATION

22. In 2002, we engaged consultants under **683CL** "Feasibility Study for Further Development of Tseung Kwan O" to carry out the TKO Study which aims at formulating a comprehensive plan for further development of TKO. It recommends to further develop TKO to house a total population of 450 000 besides the district's continuous commercial and industrial developments. To cope with the anticipated transport need, the TKO Study recommended the provision of CBL and TKO-LT Tunnel to meet the long term traffic demand between TKO and the external areas. The TKO Study was substantially completed in end 2005.

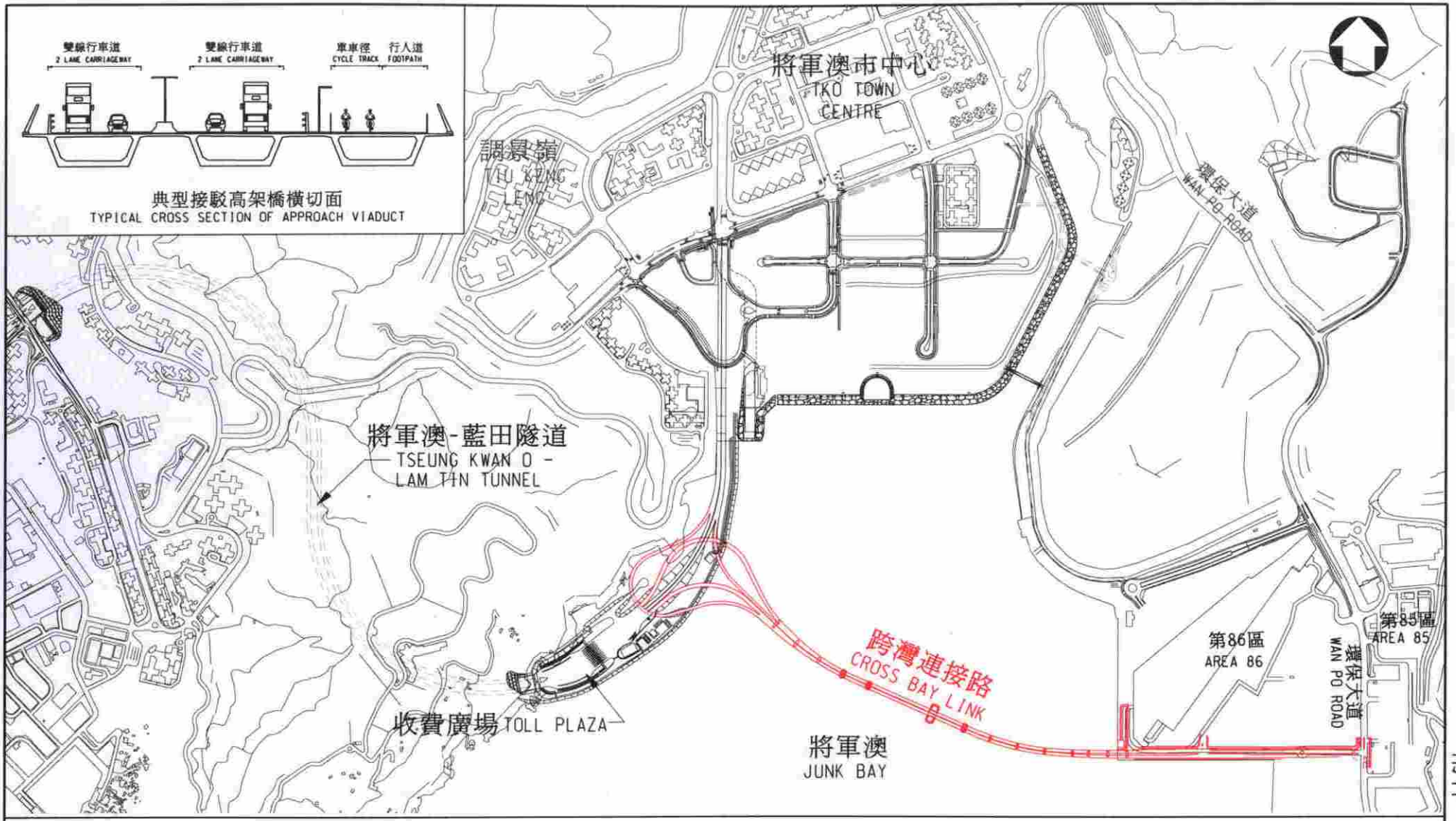
23. We upgraded **822TH** to Category B in April 2007.

24. The proposed I&PD study and associated site investigation works will not involve any tree removal or planting proposals. We will require the consultants to take into consideration the need for tree preservation during the I&PD study and subsequent detailed design stage of the Project. We will also incorporate tree planting proposals, where possible, in the construction phase.

/25 .....

25. We estimate that the proposed I&PD study and site investigation works will create about 41 jobs (20 for labourers and another 21 for professional/technical staff), providing a total employment of 730 man-months.

Transport and Housing Bureau
December 2008



二〇〇八年至二〇〇九年度工務小組委員會文件 P.W.S.C. SUBMISSION 2008-2009

圖則名稱 drawing title

工務計劃第822TH號 - 將軍澳跨灣連接路 - 位置圖

PWP ITEM NO. 822TH - CROSS BAY LINK, TSEUNG KWAN O - LOCATION PLAN

繪圖 drawn	Y W LO	簽署 initial	SIGNED	日期 date	2.12.08
核對 checked	C L SUN	簽署 initial	SIGNED	日期 date	2.12.08
核准 approved	W M WONG	簽署 initial	SIGNED	日期 date	2.12.08

項目編號 item no. 822TH

比例 scale 1 : 15 000

圖則編號 drawing no. TK2331

辦事處 office
新界東拓展處
NEW TERRITORIES EAST DEVELOPMENT OFFICE

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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附件一 Enclosure 1

二〇〇八年至二〇〇九年度工務小組委員會文件 P.W.S.C. SUBMISSION 2008-2009

圖則名稱 drawing title

跨灣連接路 - 典型斜拉特色橋
CROSS BAY LINK - TYPICAL CABLE-STAYED FEATURE BRIDGE

繪圖 drawn	Y W LO	簽署 initial	SIGNED
日期 date	2.12.08		
核對 checked	C L SUN	簽署 initial	SIGNED
日期 date	2.12.08		
核准 approved	W M WONG	簽署 initial	SIGNED
日期 date	2.12.08		

項目編號 item no. 822TH

比例 scale NTS

圖則編號 drawing no. TK2357

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土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

附件二 Enclosure 2

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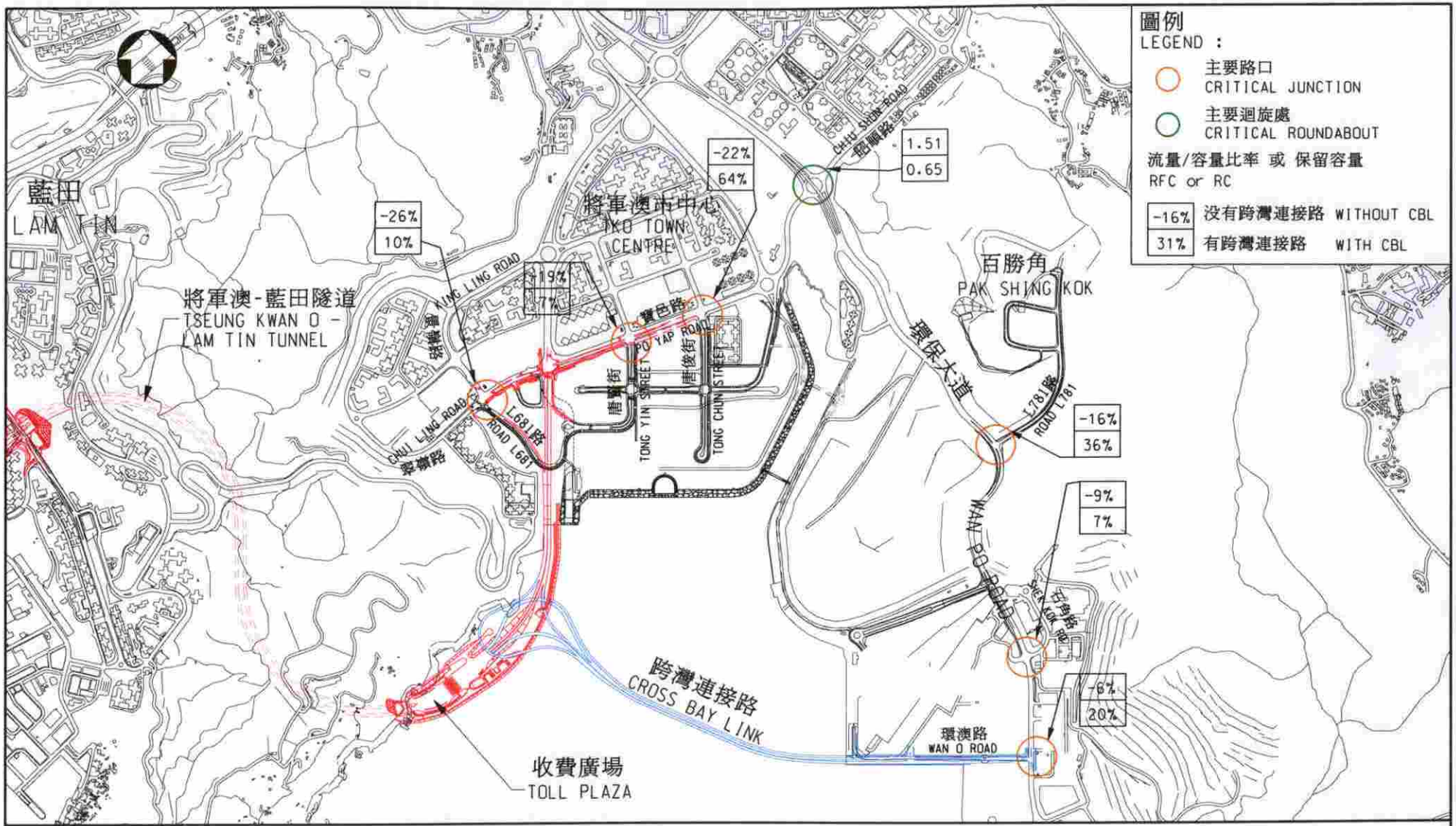

二〇〇八年至二〇〇九年度工務小組委員會文件 P.W.S.C. SUBMISSION 2008-2009

圖則名稱 drawing title

工務計劃第822TH號 - 將軍澳跨灣連接路 - 2016年的預計交通狀況

PWP ITEM NO. 822TH - CROSS BAY LINK, TSEUNG KWAN O - PROJECTED TRAFFIC CONDITION IN 2016

繪圖 drawn	Y W LO	簽署 initial	SIGNED
日期 date	2.12.08		
核對 checked	C L SUN	簽署 initial	SIGNED
日期 date	2.12.08		
核准 approved	W M WONG	簽署 initial	SIGNED
日期 date	2.12.08		

項目編號 item no. 822TH

比例 scale 1 : 20 000

圖則編號 drawing no. TK2358

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CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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附件三 Enclosure 3

Enclosure 4 to PWSC(2008-09)49

822TH – Cross Bay Link, Tseung Kwan O

Breakdown of the estimates for consultants' fees (in September 2008 prices)

Consultants' staff costs		Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fees ($ million)
(a) Review of the findings of previous studies and design options (Note 2)	Professional	18	38	2.0	2.2
	Technical	22	14	2.0	0.9
(b) Impact assessments (environmental, traffic, marine, heritage, etc.) (Note 2)	Professional	45	38	2.0	5.4
	Technical	58	14	2.0	2.3
(c) Preliminary design (Note 2)	Professional	51	38	2.0	6.2
	Technical	64	14	2.0	2.5
(d) Supervision of site investigations (Note 2)	Professional	13	38	1.6	1.3
	Technical	45	14	1.6	1.4
				Total	22.2

* MPS = Master Pay Scale

Notes

1. A multiplier of 2.0 and 1.6 is applied to the average MPS point to estimate the cost of consultants' staff and resident site staff supplied by the consultants respectively. (As at 1 April 2008, MPS pt. 38 = $60,535 per month and MPS pt. 14 = $19,835 per month.)

2. The actual man-months and fees will only be known when we have selected the consultants through the usual competitive bid system.