For information

Legislative Council Panel on Transport

823TH - Tseung Kwan O-Lam Tin Tunnel
822TH – Cross Bay Link, Tseung Kwan O

PROPOSAL

This paper informs Members of our proposal of upgrading part of **823TH** and **822TH** to Category A to engage consultants to undertake the investigation and preliminary design (I&PD) and the associated site investigation works for the Tseung Kwan O – Lam Tin Tunnel (TKO-LT Tunnel) and Cross Bay Link (CBL).

BACKGROUND

2. On 24 June 2005, we updated the Legislative Council Panel on Transport on the TKO-LT Tunnel (formerly known as the Western Coast Road). Members in general agreed to the adoption of the recommended tunnel alignment scheme for the TKO-LT Tunnel in preference to the coastal alignment scheme, and considered that the proposed new external road network (comprising the TKO-LT Tunnel and CBL) was an essential infrastructure for Tseung Kwan O (TKO). We subsequently proceeded with the detailed planning of the TKO-LT Tunnel and CBL.

PROJECT SCOPE

3. The scope of **823TH** comprises -

(a) a dual two-lane highway of approximately 4.8 kilometres (km) long connecting TKO at Po Yap Road in the east with Trunk Road T2 in Kai Tak Development in the west. About 3.0 km of the highway is in the form of tunnel;

(b) a toll plaza, ventilation and administration buildings, and other tunnel portal facilities together with the associated reclamation in TKO;

(c) slip roads and branch tunnels on Kowloon side for connecting the TKO-LT Tunnel and Trunk Road T2 to Eastern Harbour Crossing and Cha Kwo Ling Road; and

(d) the associated building, civil, structural, marine, electrical and mechanical, landscaping, and environmental protection and mitigation works.

4. The scope of **822TH** comprises –

(a) a dual two-lane carriageway of approximately 1.8 km long with a cycle track and a footpath across the Junk Bay mainly on viaduct, connecting the 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 TKO-LT Tunnel and CBL (the Projects) is at **Enclosure 1**.

5. The part of **823TH** 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; and

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

(b) the preliminary design of the works described in paragraph 3 above; and

(c) associated site investigations and works supervision.

6. The part of **822TH** 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) the preliminary design of the works described in paragraph 4 above; and

(c) associated site investigations and works supervision.

7. We plan to start the I&PD studies of the Projects in December 2008 for completion in May 2011. We intend to start the construction works for the TKO-LT Tunnel in 2012 and for the CBL in 2013. Both projects are targeted for completion in 2016. The project costs of the TKO-LT Tunnel and CBL are about $5.9 billion and $2.2 billion respectively.

JUSTIFICATION

TKO-LT Tunnel

8. The Feasibility Study for Further Development of Tseung Kwan O (the "TKO Study") recommended a new external road network (comprising the TKO-LT Tunnel and CBL) 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. The projected volume/capacity (v/c) ratios [1] during the peak hours at the TKO Tunnel with and without the proposed Project are shown in the following table-

Year	Without the TKO-LT Tunnel	With the TKO-LT Tunnel
2011	1.17	--
2016	1.22	0.94
2021	1.36	1.00

It is therefore necessary to complete the TKO-LT Tunnel around 2016 to meet the anticipated traffic generated from further population intake and industrial development of TKO.

9. The TKO-LT Tunnel, together with the proposed Trunk Road T2 in Kai Tak Development and Central Kowloon Route, will form Route 6 in the strategic road network. Route 6 will provide an east-west express link between Kowloon and TKO areas. Upon completion in 2016, this strategic route will also provide the necessary relief to the existing heavily trafficked road network in the central and eastern Kowloon areas, and reduce the related environmental impacts on these areas. A location plan showing the indicative alignment of Route 6 is at **Enclosure 3**.

[1] A volume/capacity (v/c) ratio is normally used to reflect traffic situation during peak hours. A v/c ratio equals to or less than 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.

CBL

10. 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[2] at Wan Po Road/Chiu Shun Road and of other traffic signal junctions[3] during the peak hours with and without the CBL in 2016, after the completion of the TKO-LT Tunnel, are shown in **Enclosure 4**.

11. 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, heavy external 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.

12. At present, Wan Po Road is the only road linking the southeastern part of TKO to the other areas. The commercial and industrial activities, particularly those in TKO Industrial Estate, in the southeast area of TKO 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.

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[2] 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.

[3] 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.

The Proposed I&PD Studies

13. The proposed I&PD studies are to determine the design options, general layouts, land requirements and impacts of the Projects. We will carry out environmental impact assessments in association with the I&PD studies 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 studies and the supervision of site investigation works.

FINANCIAL IMPLICATIONS

14. We estimate the cost of the I&PD studies of the TKO-LT Tunnel and CBL to be $198 million and $58.7 million in money-of-the-day (MOD) prices respectively, made up as follows –

		$ million			
			823TH		**822TH**
(a)	Consultants' fees		62.7		21.6
	(i) review of the findings of previous studies and design options	8.0		2.9	
	(ii) impact assessments (environmental, traffic, marine, heritage, etc.)	21.2		7.6	
	(iii) preliminary design	23.8		8.5	
	(iv) supervision of site investigations	9.7		2.6	
(b)	Site investigations		97.0		26.0
(c)	Contingencies		16.0		4.7
	Sub-total (in September 2007 prices)		175.7		52.3

		$ million	
		823TH	**822TH**
(d)	Provision for price adjustment	22.3	6.4
	Total (in MOD prices)	198.0	58.7

15. The proposed I&PD studies and associated site investigation works have no recurrent financial implication.

PUBLIC CONSULTATION

16. We consulted the Sai Kung District Council (SKDC) on 5 June 2007. Members raised a number of requests, mainly on the provision of a cycle track and pedestrian facilities on the CBL, the deletion of the proposed flyover at the junction of Po Yap Road and Po Shun Road and the provision of a connection to Junk Bay Chinese Permanent Cemetery. We have addressed members' above requests by providing a cycle track and a footpath on the CBL, replacing the proposed flyover with a signalized junction, and making allowance for vehicular connection points to Junk Bay Chinese Permanent Cemetery in the layout design. We consulted the SKDC again on 22 January 2008 with the above amendments. Members welcomed the proposed amendments and supported the early implementation of the Projects.

17. We consulted the Kwun Tong District Council (KTDC) on 17 May 2007 and the villagers' organizations of Cha Kwo Ling Village (CKLV) on 21 June 2007. The scheme of the Kowloon section of the TKO-LT Tunnel originally took the form of a depressed road option. The KTDC members raised concerns on the clearance of part of CKLV and suggested this section of road be designed in tunnel form. The villagers' organizations also expressed serious concerns over the depressed road proposal and strongly urged for the road section at CKLV be changed to tunnel form to preserve the integrity of the village community.

18. We took into consideration of the concerns of the KTDC and

villagers' organizations in preserving the village community and proposed an alternative scheme of a tunnel option at CKLV. This scheme involves constructing a tunnel in close proximity to CKLV, Sai Tso Wan Landfill and MTR Rail Line together with additional branch tunnels. We consulted the KTDC again on 6 May 2008 with the tunnel option and informed them that the tunnel option may cost up to $2 billion more than the depressed road option. We also informed the KTDC that two slip roads from Cha Kwo Ling Road and Eastern Harbour Crossing to Trunk Road T2 cannot be provided under the tunnel option, and the traffic from these roads to West Kowloon through Central Kowloon Route would have to use the existing roads i.e. Kwun Tong By-pass and Kai Fuk Road. We would investigate the geological conditions in the subsequent investigation stage and confirm its feasibility. As the tunnel option can avoid the clearance of CKLV and preserve the village community, the KTDC welcomed this alternative and supported the early implementation of the project.

19. We consulted the villagers' organizations again on 14 May 2008. While noting the preservation of the village community, some lot owners raised concerns on the potential impact of the tunnel option on the redevelopment rights of their existing land lots. They considered the tunnel option would prevent the provision of deep foundation needed to support possible high rise buildings on their lots upon redevelopment. They suggested the Administration to further review the alignment. We noted this latest view expressed by the lot owners and would study their concerns and maintain close dialogue with them in the next investigation stage.

ENVIRONMENTAL IMPLICATIONS

20. Both the CBL and TKO-LT Tunnel are designated projects under schedule 2 of the Environmental Impact Assessment (EIA) Ordinance. Environmental permits are required for the construction and operation of the Projects. We will carry out EIA studies to address the potential environmental impacts of the projects. We will submit the EIA reports to the Director of Environmental Protection for approval under the EIA Ordinance and will follow the statutory procedures of making the EIA reports available for comments by the public and the Advisory Council on the Environment.

21. The proposed I&PD studies 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 reports.

22. The proposed site investigation works will only generate very little construction waste. We will require the consultants to fully consider measures to minimize the generation of construction waste and to reuse/recycle them as much as possible in the future implementation of the Projects.

LAND ACQUISITION

23. The proposed I&PD studies and associated site investigation works do not require land acquisition.

THE WAY FORWARD

24. We intend to seek the funding support of the Public Works Sub-committee and the Finance Committee of the Legislative Council in October and November 2008 respectively to upgrade part of **823TH** and **822TH** separately to Category A for the I&PD studies and associated site investigations. Subject to funding approval, we plan to start the I&PD studies in December 2008 for completion in May 2011.

ADVICE SOUGHT

25. Members are invited to note the content of this paper.

Transport and Housing Bureau
June 2008

二〇〇八年至二〇〇九年度交通事務小組委員會文件 PANEL ON TRANSPORT SUBMISSION 2008-2009

將軍澳-藍田隧道和跨灣連接路 - 走線圖

TSEUNG KWAN O-LAM TIN TUNNEL AND CROSS BAY LINK
- ALIGNMENT PLAN

drawn: SC FUNG		date: 19.05.08	drawing no.: B22TH & B23TH
checked: TS LI		date: 19.05.08	scale: 1 : 13500 (A3)
approved		date	drawing no.: TK2354

新界東北發展處
NEW TERRITORIES EAST DEVELOPMENT OFFICE

土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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A3 420MM X 297MM

二〇〇八年至二〇〇九年度交通事務委員會文件 PANEL ON TRANSPORT 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	C S LAU	簽署 initial	日期 date	15.5.08
核對 checked	T S LI	簽署 initial	日期 date	15.5.08
核准 approved	W T YEUNG	簽署 initial	日期 date	15.5.08

項目編號 item no. 823TH

比例 scale NTS

圖則編號 drawing no. TK2355

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

附件二 Enclosure 2

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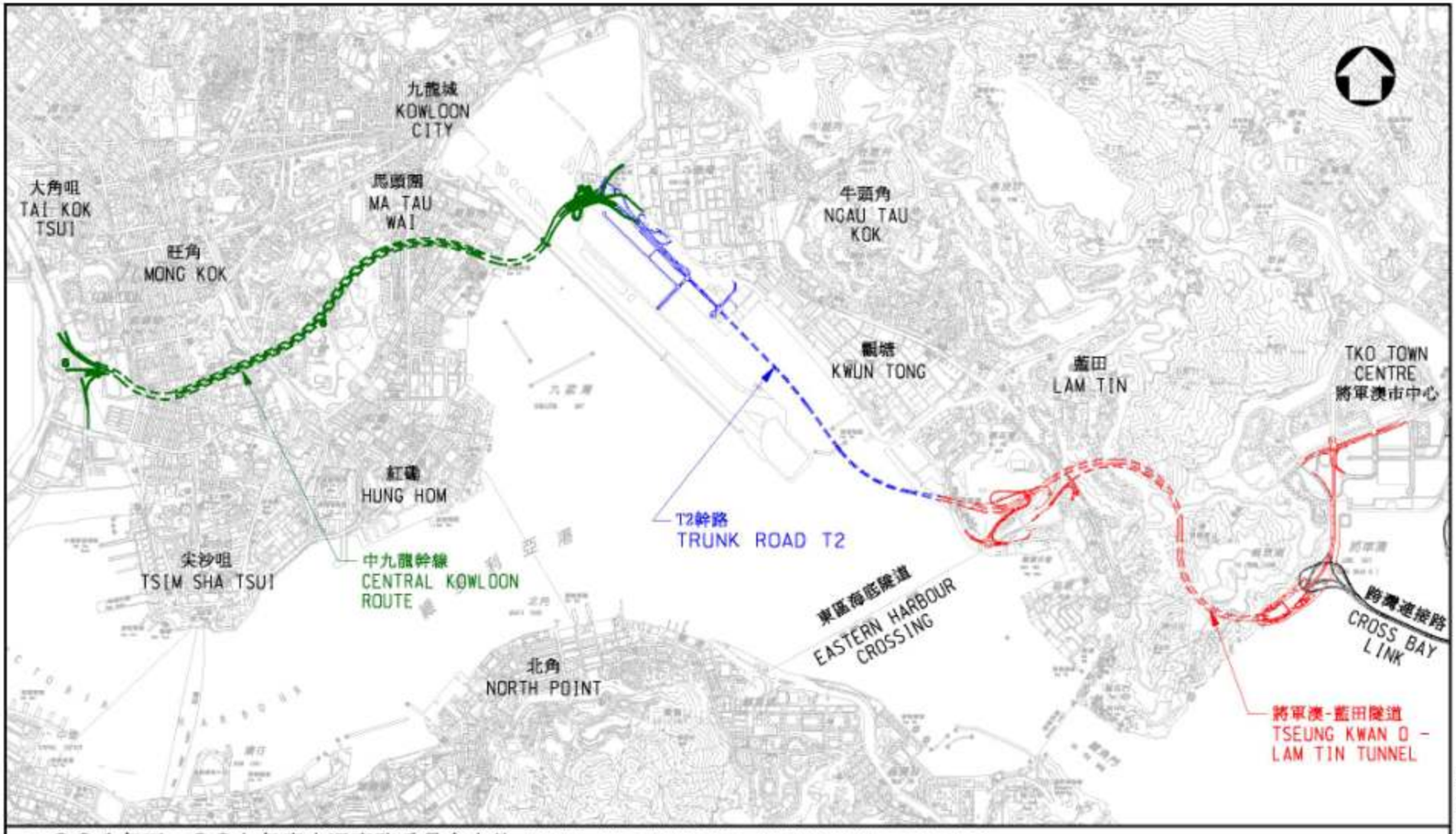
A4 297MM X 210MM



二〇〇八年至二〇〇九年度交通事務委員會文件 PANEL ON TRANSPORT SUBMISSION 2008-2009

圖則名稱 drawing title

六號幹線示意走線位置圖
LOCATION PLAN OF THE INDICATIVE ALIGNMENT OF ROUTE 6

繪圖 drawn: C S LAU	簽署 initial:	日期 date: 15.5.08
核對 checked: C H CHAN	簽署 initial:	日期 date: 15.5.08
核准 approved: W T YEUNG	簽署 initial:	日期 date: 15.5.08

項目編號 item no.: 823TH

比例 scale: 1 : 40 000

圖則編號 drawing no.: TK2352

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

CEDD 土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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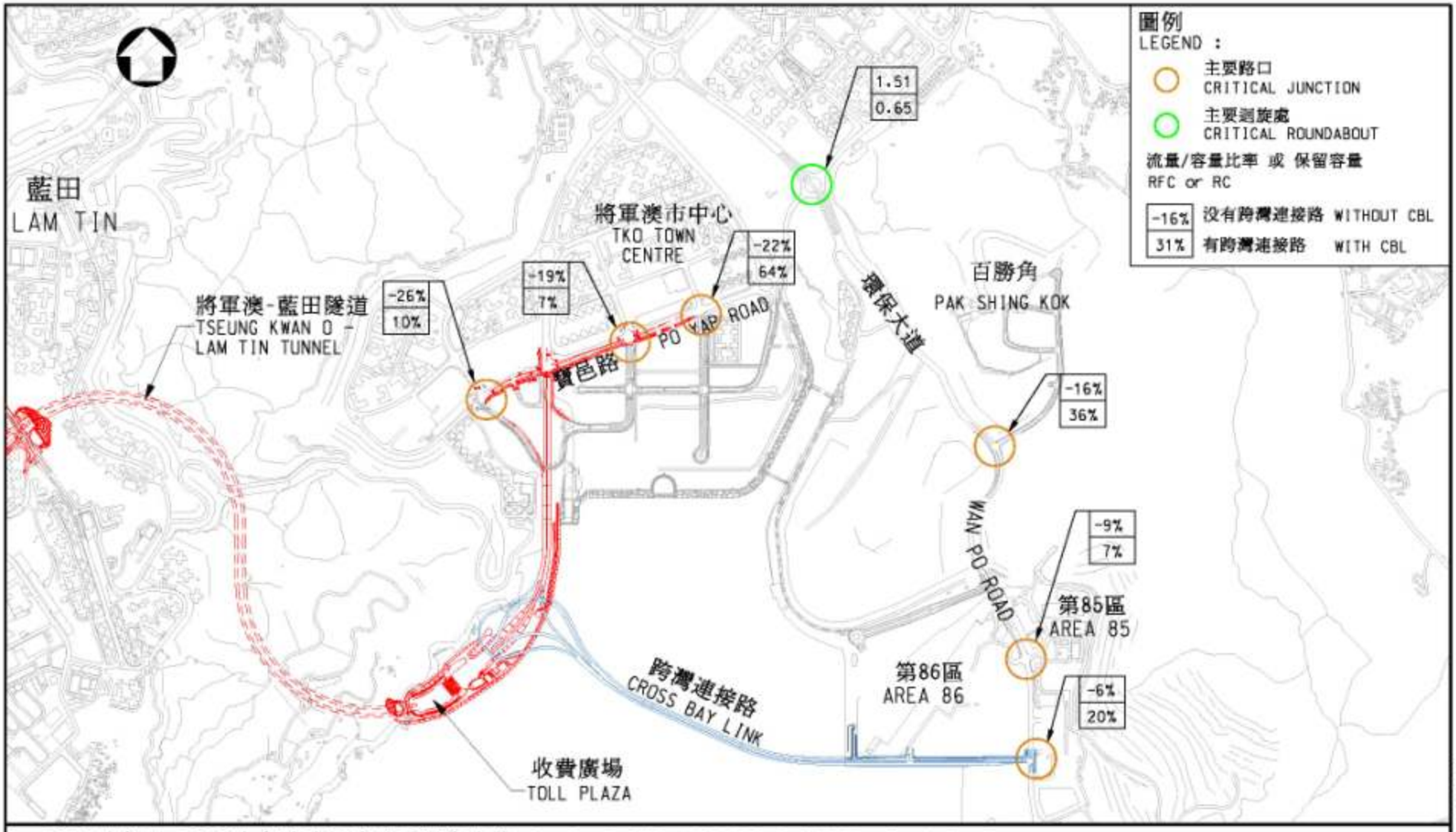
A4 297MM X 210MM

附件三 Enclosure 3



二〇〇八年至二〇〇九年度交通事務委員會文件 PANEL ON TRANSPORT 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	C S LAU	簽署 initial	日期 date 15.5.08
核對 checked	T S LI	簽署 initial	日期 date 15.5.08
核准 approved	W T YEUNG	簽署 initial	日期 date 15.5.08

項目編號 item no. 822TH

比例 scale 1 : 20 000

圖則編號 drawing no. TK2356

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CEDD 土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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A4 297MM X 210MM

附件四 Enclosure 4