

**For discussion
on 22 February 2013**

Legislative Council Panel on Transport

**823TH – Tseung Kwan O – Lam Tin Tunnel
Detailed Design and Site Investigation Works**

PURPOSE

This paper seeks Members' views on the funding proposal to carry out detailed design and associated site investigation works of the Tseung Kwan O – Lam Tin Tunnel (TKO-LT Tunnel)¹.

BACKGROUND

2. In January 2009, the Finance Committee of the Legislative Council (LegCo) approved upgrading part of **823TH** to Category A as **827TH** "Tseung Kwan O – Lam Tin Tunnel – investigation and preliminary design"² for engaging consultants to undertake the preliminary design of the project and for the associated site investigation works. Subsequently, we engaged consultants in March 2009 and the concerned works has been substantially completed. Therefore, we now have to proceed with the next phase to carry out the detailed design and associated site investigation works for the TKO-LT Tunnel.

PROJECT SCOPE

3. The scope of **823TH** comprises –
- (a) construction of a dual two-lane highway, approximately 4.2 kilometres (km) long (of which about 2.6 km is in the form of tunnel) connecting Po Shun Road of Tseung Kwan O (TKO) in the east with Eastern Harbour Crossing (EHC) and Cha Kwo Ling Road of Kwun Tong in the west;
 - (b) construction of slip roads, depressed roads³, viaducts, TKO Interchange, ventilation building for the tunnel, tunnel portal

¹ To upgrade part of **823TH** to Category A as "Tseung Kwan O – Lam Tin Tunnel –detailed design and site investigation".

² The Finance Committee approved \$198.9 million (in money-of-the-day prices).

³ Depressed road design can minimise the traffic noise impacts.

facilities and reclamation of about 3 hectares of land to construct the depressed roads at TKO side;

- (c) construction of slip roads, branch tunnels, viaducts, Lam Tin Interchange, tunnel portal facilities, ventilation and administration buildings at Kwun Tong side; and
- (d) implementation of the associated building, civil, structural, marine, electrical and mechanical, traffic control and surveillance system, landscaping, as well as environmental protection and mitigation works.

———— A plan showing the location of the TKO-LT Tunnel is at **Enclosure 1**.

4. To enable early implementation of the project, we propose to carry out the detailed design and site investigation works of the TKO-LT Tunnel project first by upgrading part of **823TH** to Category A, comprising –

- (a) detailed design of the works described in paragraph 3 above;
- (b) associated site investigation works and supervision;
- (c) preparation of tender documents and assessment of tenders for the associated site investigation works; and
- (d) preparation of tender documents and assessment of tenders for the future construction works of TKO-LT Tunnel.

5. Subject to the support of the Panel and the Public Works Subcommittee, as well as the approval of the Finance Committee of the funding application, we plan to start the proposed detailed design and associated site investigation works of **823TH** in November 2013 for completion in around December 2016.

JUSTIFICATION

Resolving Traffic Problem

6. With the gradual completion of new residential housing developments, the population of TKO district is continuously increasing. This will aggravate the existing traffic load of TKO district. All these years, TKO residents and the local community have been expressing their expectation on the early implementation of the TKO-LT Tunnel by the Administration.

7. At present, the TKO Tunnel (location plan at **Enclosure 2**) is the main connection between TKO district and other areas of Hong Kong. Traffic congestions have already occurred during peak hours. Its volume/capacity (v/c) ratio⁴ is around 1.14. According to the traffic impact assessment of the “investigation and preliminary design study” of the TKO-LT Tunnel completed in 2012, it was envisaged that the congestion during peak hours at TKO Tunnel would worsen in 2021, with the v/c ratio and queue length (measured from toll plaza) of Kowloon-bound traffic during peak hours reaching 1.38 and 2.9 km respectively. It is estimated that the travelling time from TKO to Kowloon will increase by around 15 minutes because of traffic congestion. The above data indicates that the traffic volume of the existing TKO Tunnel will continue to increase and its capacity would not be able to cope with the estimated traffic volume in year 2021.

8. We therefore need to construct the TKO-LT Tunnel to meet the traffic demand resulting from the anticipated population increase. After the completion of the TKO-LT Tunnel, it is anticipated that the v/c ratio during peak hours at TKO Tunnel can be reduced from 1.38 to 0.86 in 2021. Under normal traffic conditions, the travelling time from TKO Town Centre to the toll plaza of EHC can be reduced from 12 minutes to 3 minutes.

9. Overall speaking, for the Kwun Tong district, the TKO-LT Tunnel will improve the existing traffic conditions within the district and also relieve the extra traffic load to be brought about by the future development of the district.

⁴ A volume/capacity (v/c) ratio is an indication of the traffic conditions of roads during peak hours. A v/c ratio equals to or less than 1.0 is considered acceptable. A v/c ratio between 1.0 and 1.2 indicates a manageable degree of congestion. A v/c ratio above 1.2 indicates more serious congestion. The anticipated v/c ratios at the TKO Tunnel during peak hours with and without the TKO-LT Tunnel are as follows:

Year	Anticipated v/c ratios at TKO Tunnel during peak hours	
	Without TKO-LT Tunnel	With TKO-LT Tunnel
2016	1.16	—
2021	1.38	0.86
2026	1.38	0.88

After completion of the project, part of the existing traffic between TKO and EHC can use the TKO-LT Tunnel without routing through TKO Road and Lei Yue Mun Road etc of the Kwun Tong district, thus significantly relieving the heavy traffic load at these roads during peak hours. In addition, with the spared capacity of TKO Road resulting from the commissioning of the TKO-LT Tunnel, TKO Road can cope with the future developments in Kwun Tong district, including the proposed housing development in the vicinity of Anderson Road.

Design for Greening and Integration with Environment

10. In addition to improving the traffic condition, we consider that the design and construction of the TKO-LT Tunnel should minimise the environmental impact on the areas along the alignment. We propose to construct the main carriageways of the Lam Tin Interchange at around 20 metres below the adjacent ground level and cover it with a landscape deck and light green-coloured noise enclosures. Moreover, a variety of measures will be implemented on the slip roads of the Interchange, such as being constructed in tunnel form, hidden between cut-slopes or provided with noise barriers/enclosures, so as to alleviate noise and visual impacts as well as light nuisance.

11. Besides, we propose to adopt a tunnelling scheme at Cha Kwo Ling Village to avoid any works at the ground level. This can maintain the integrity of the village community and does not involve any resumption or clearance of squatters/buildings. Furthermore, the proposed tunnel alignment will not affect the local landmarks including Cha Kwo Ling Tin Hau Temple and the former Four Hills Public School.

FINANCIAL IMPLICATIONS

12. We estimate the cost of the proposed detailed design and associated site investigation works to be \$196.0 million in money-of-the-day (MOD) prices, made up as follows –

	\$ million
(a) Consultants' fees for	93.8
(i) detailed design and supervision of site investigation works	88.6
(ii) preparation of tender documents and assessment of tenders	5.0

		\$ million	
	(iii) management of resident site staff for site investigation works	0.2	
(b)	Remuneration of resident site staff for site investigation works	4.8	
(c)	Site investigation works	50.0	
(d)	Contingencies	14.9	
	Sub-total	163.5	(in September 2012 prices)
(e)	Provision for price adjustment	32.5	
	Total	196.0	(in MOD prices)

13. The proposed detailed design and associated site investigation works will not give rise to any recurrent consequences.

PUBLIC CONSULTATION

14. We commenced the “investigation and preliminary design study” in early 2009, and have subsequently carried out a public engagement (PE) exercise comprising three different stages, discussing topics that were of public concern and exploring different design options. Taking into account public views collected in the PE exercise, environmental factors and engineering considerations, we have developed the optimum preliminary design of the TKO-LT Tunnel.

15. We consulted the Sai Kung District Council and Kwun Tong District Council in January 2013. Both supported the **823TH** project and urged for its early implementation. We would maintain close dialogue on the progress of the project with the concerned parties during the detailed design stage.

ENVIRONMENTAL IMPLICATIONS

16. The proposed detailed design and associated site investigation works are not a designated project under the Environmental Impact Assessment (EIA) Ordinance and will not cause any long-term environmental impact. We have included in the project estimate the cost of implementing suitable mitigation measures to control short term environmental impact during the site investigation works.

17. The proposed site investigation works will only generate very little construction waste. We will require the consultants to comprehensively examine measures to minimize the generation of construction waste and to reuse/recycle construction waste as much as possible during the construction stage in future.

18. As regards **823TH** itself, the proposed TKO-LT Tunnel is a designated project under Schedule 2 of the EIA Ordinance. The Administration will need to apply for an environmental permit for the construction and operation of **823TH** at appropriate time. We have carried out an EIA study and have submitted the EIA report to the Director of Environmental Protection for approval under the EIA Ordinance. We will follow the statutory procedures, including the provision of the EIA report for inspection and comment by the public and the Advisory Council on the Environment, by mid 2013.

IMPLICATIONS ON TREES

19. The proposed detailed design and associated site investigation works will not directly involve any tree removal or planting proposals. We will require the consultants to take into consideration the need for tree preservation during the detailed design stage of the project. We will also incorporate tree planting proposals in the construction phase.

HERITAGE IMPLICATIONS

20. The proposed detailed design 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).

LAND ACQUISITION

21. The proposed detailed design and associated site investigation works do not require any land acquisition.

JOB OPPORTUNITIES

22. We estimate that the proposed detailed design and associated site investigation works will create about 73 jobs⁵, providing a total employment of 1 500 man-months.

WAY FORWARD

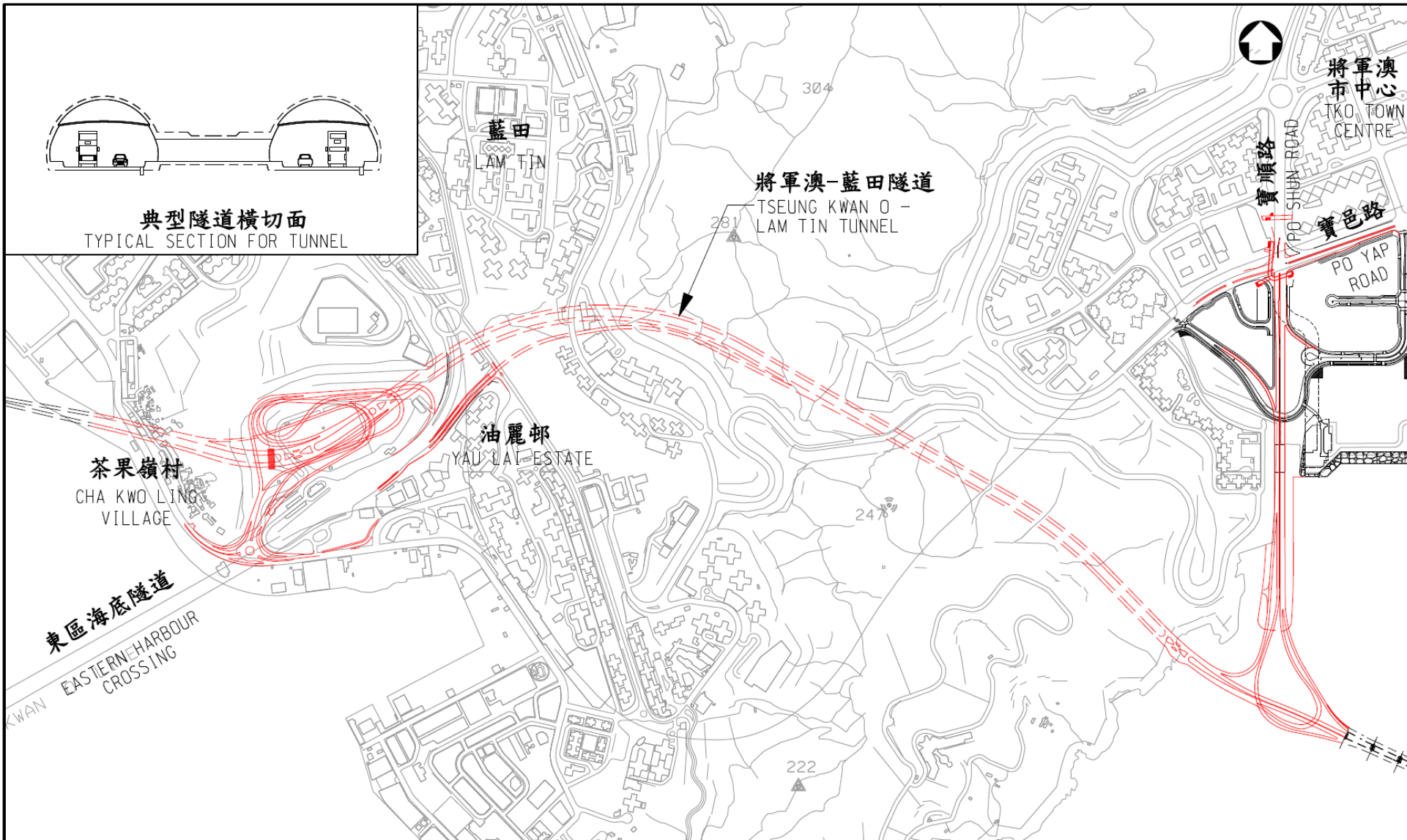
23. Subject to the support of the Panel, we plan to seek the support of the LegCo Public Works Subcommittee in March 2013 for upgrading part of **823TH** “Tseung Kwan O – Lam Tin Tunnel” as stated in paragraph 4 to Category A with a view to seeking funding approval from LegCo Finance Committee in May 2013.

ADVICE SOUGHT

24. Members are invited to comment on this paper and support our funding proposal.

Transport and Housing Bureau
February 2013

⁵ 29 for labourers and another 44 for professional/technical staff.



圖則名稱 drawing title

工務計劃第823TH號 - 將軍澳-藍田隧道 - 位置圖
PWP ITEM NO. 823TH -
TSEUNG KWAN O - LAM TIN TUNNEL - LOCATION PLAN

繪圖 drawn

Y W LO

簽署 initial

日期 date

17.1.13

項目編號 item no.

823TH

辦事處 office

新界東拓展處

NEW TERRITORIES EAST
DEVELOPMENT OFFICE

核對 checked

C H CHAN

簽署 initial

日期 date

17.1.13

比例 scale

1 : 13 000

核准 approved

日期 date

圖則編號 drawing no.

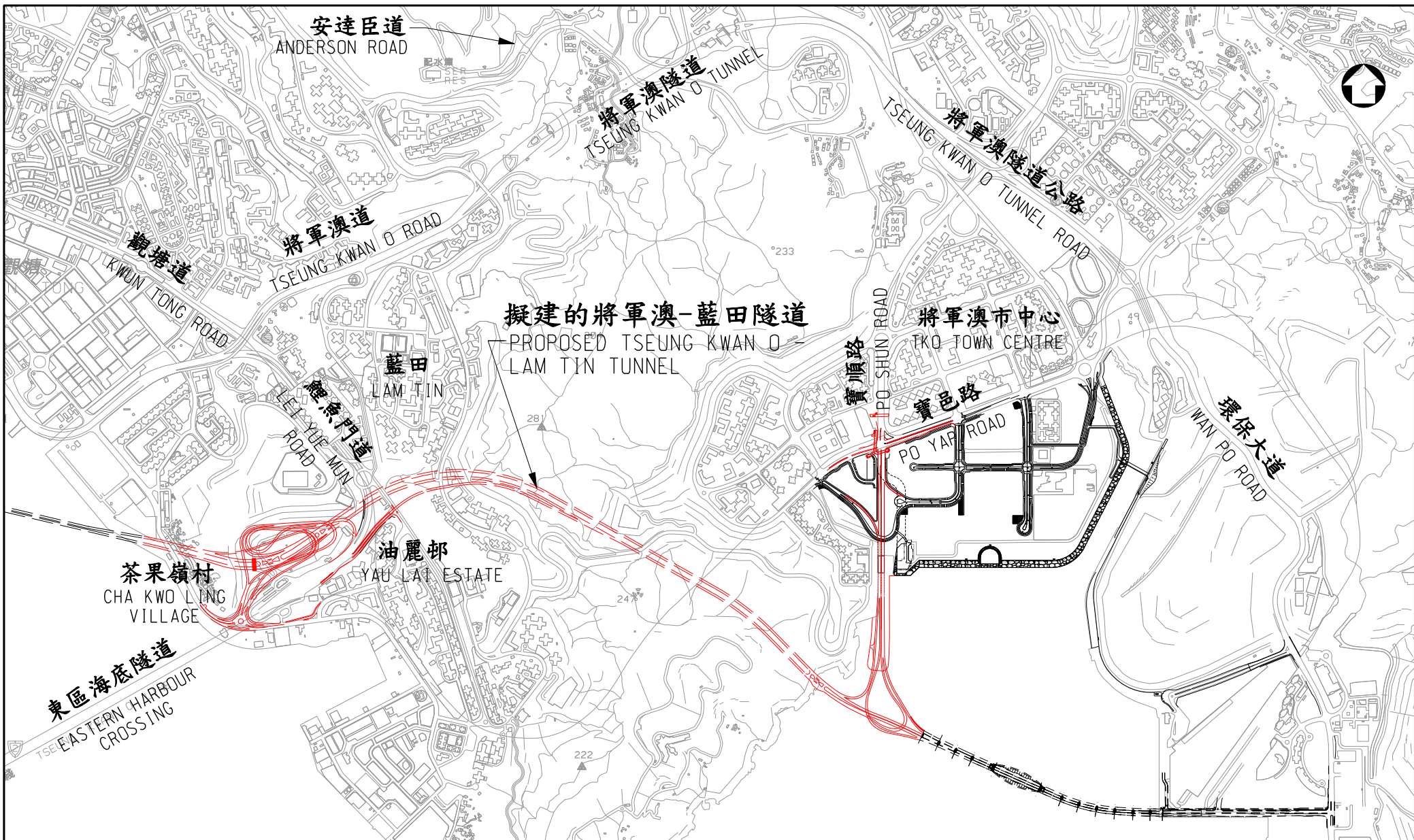
TKZ0770




土木工程拓展署
CIVIL ENGINEERING
AND DEVELOPMENT
DEPARTMENT

ENCLOSURE 1

附件一



圖則名稱 drawing title 工務計劃第823TH號 - 將軍澳及觀塘區內現有主要道路 PWP ITEM NO. 823TH - MAJOR ROADS IN TSEUNG KWAN O AND KWUN TONG	繪圖 drawn	簽署 initial	日期 date	項目編號 item no.	辦事處 office 新界東拓展處 NEW TERRITORIES EAST DEVELOPMENT OFFICE
	Y W LO		6.2.13	823TH	
	核對 checked	簽署 initial	日期 date	比例 scale	 土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
	K C HUI		6.2.13	1 : 21 000	
核准 approved	簽署 initial	日期 date	圖則編號 drawing no.		
				TKZ0771	