

**For Discussion
28 November 2003**

Legislative Council Panel on Transport

**Improvement to Castle Peak Road
Between Ka Loon Tsuen and Siu Lam**

PURPOSE

This paper seeks Members' views on our proposal to upgrade **731TH** – Improvement to Castle Peak Road (CPR) between Ka Loon Tsuen and Siu Lam to Category A to carry out the proposed improvement works.

PROJECT SCOPE

2. The scope of **731TH** includes –
- (a) widening of a 1.1 kilometre (km) section of CPR between Ka Loon Tsuen and Tai Lam Kok from a single three-lane carriageway to a dual two-lane carriageway with a three-metre (m) wide footpath on both sides;
 - (b) construction of a 1.0 km section of new CPR between Tai Lam Kok and Siu Lam including a 800m-long dual two-lane viaduct;
 - (c) reclamation of 0.8 hectares of land including construction of a 1.1 km long seawall;
 - (d) provision of a roundabout at Tai Lam Kok;
 - (e) reconstruction of the 1.2 km long CPR between Tai Lam Kok and Siu Lam; and
 - (f) associated works on junction modification, slope stabilisation, landscaping, street lighting and drainage.

———— A site plan with typical road sections of CPR is at the **Enclosure**.

JUSTIFICATIONS

3. The existing CPR between Area 2 in Tsuen Wan and So Kwun Tan in Tuen Mun is a rural road connecting Tsuen Wan to Tuen Mun, serving mainly the residential developments along the road. As CPR runs parallel to Tuen Mun Road (TMR), it also supplements TMR to serve east-west traffic movements in the northwest New Territories (NWNT).

4. We plan to upgrade the section of CPR between Area 2 and So Kwun Tan to dual two-lane carriageway standards in three phases to cope with the increasing traffic demand arising from the planned residential developments in the NWNT. The CPR can also act as a relief route for TMR in case of emergency. We have completed the improvements works to the section of CPR from Siu Lam to So Kwun Tan¹ in November 2000 and commenced the widening of the road section between Area 2 and Ka Loon Tsuen² in August 2001 for completion in early 2006. This project is the final phase of the CPR improvements.

5. The majority section of CPR between Ka Loon Tsuen and Siu Lam is a single three-lane carriageway with two lanes designated for the westbound traffic. Upon completion of the improvement of the other sections of CPR to dual two-lane carriageway standards, this section of CPR will become a bottleneck. We need to widen it to dual two-lane carriageway standards so as to be consistent with the configurations of other improved sections of CPR and to remove the bottleneck. The projected traffic volume to capacity (v/c) ratio³ of CPR during morning peak hours in 2003, 2007, 2011 and 2016, with and without the proposed widening, are as follows –

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1. We upgraded **541TH** “Improvement to Castle Peak Road from Siu Lam to So Kwun Tan” to Category A at an estimated cost of \$379.2 million in MOD prices in July 1996.
 2. We upgraded **365TH** “Castle Peak Road improvement between Area 2 and Sham Tseng, Tsuen Wan” and **553TH** “Castle Peak Road improvement between Sham Tseng and Ka Loon Tsuen, Tsuen Wan” to Category A at an estimated cost of \$2,528.3 million and \$1,232.3 million in MOD prices respectively in March 2001.
 3. 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 of the CPR at Tai Lam Kok	Year			
	2003	2007	2011	2016
Without the proposed improvement works	0.78	1.22	1.66	1.72
With the proposed improvement works	-	0.41	0.56	0.57

6. The existing CPR between Ka Loon Tsuen and Tai Lam Kok runs closely parallel to the TMR and crosses the TMR through an underpass structure at Tai Lam Kok. We have to reclaim 0.8 hectares of land to widen the seaward side of this section of CPR. As the underpass structure poses a major constraint for widening the CPR between Tai Lam Kok and Siu Lam along the existing route, we will construct a dual two-lane viaduct to the south of the TMR to avoid disruption to the operation of the heavily trafficked TMR. The existing CPR will then be relegated as a local distributor. We will connect the viaduct to the existing CPR by the provision of a new roundabout at Tai Lam Kok and re-provision of the existing one at Siu Lam.

FINANCIAL IMPLICATIONS

7. We estimate the cost of this project to be \$688.0 million in money-of-the-day (MOD) prices made up as follows –

	\$ million
(a) Road and drains	83.8
(b) Viaduct	332.1
(c) Reclamation and seawall	136.2
(d) Slope works and retaining wall	21.1
(e) Landscaping works	12.1
(f) Consultants' fees	62.4

		\$ million
(i)	construction supervision and contract administration	5.3
(ii)	resident site staff costs	54.0
(iii)	environmental monitoring and audit (EM&A) programme ⁴	3.0
(iv)	Electrical and Mechanical Services Trading Fund (EMSTF) charges ⁵	0.1
(g)	Contingencies	57.9
	Sub-total	705.6
		(in September 2003 prices)
(h)	Provision for price adjustment	(17.6)
	Total:	688.0
		(in MOD prices)

8. Item 7(b) includes viaduct and the associated foundation works. Item 7(c) includes seawall construction, reclamation and the associated formation works.

9. We estimate the annual recurrent expenditure arising from this project to be \$3.8 million. It is expected to generate 460 jobs comprising 95 professional/technical staff and 365 labourers, totaling 11 100 man-months.

4. We will engage consultants to implement an EM&A programme at an estimated cost of \$3.0 million to ensure timely and effective implementation of the recommended mitigation measures for the project.

5. Since the establishment on 1 August 1996 under the Trading Funds Ordinance, the EMSTF charges government departments for design and technical consultancy services for electrical and mechanical (E&M) installations provided by the Electrical and Mechanical Services Department (EMSD). The services rendered for this project include checking contractor's submission on all E&M installations and providing technical advice to the Government on all E&M works and their impacts on the project from maintenance and general operation points of view.

ENVIRONMENTAL IMPLICATIONS

10. The project is a designated project under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and an environmental permit is required for the construction and operation of the project. The key environmental concerns are traffic noise, tree felling and water quality. A statutory EIA has been conducted in 2001 and the EIA report concluded that the environmental impact of the project can be controlled to within the criteria under the EIA Ordinance and the Technical Memorandum on EIA Process. The Director of Environmental Protection (DEP) approved the EIA report in December 2001.

11. When conducting the EIA in 2001, this section of CPR would run parallel to a section of the proposed Route 10. In the light of public concerns, we revised the original scheme and gazetted a new scheme for the Route 10 (Southern Section) in June 2002 when this part of the road was removed. As a result of such changes, we conducted an Environmental Review (ER) to take account of the revised road layout and the latest traffic flow data and planning parameters.

12. In respect of noise mitigation measures, the ER showed that the overall noise level at the noise sensitive receivers (NSRs) near TMR is dominated by traffic noise generated from existing roads. The 780 m long 3.5 m high noise barriers, originally proposed to be provided on the viaduct, would only reduce the traffic noise at the NSRs⁶ varying from 64.9dB(A) to 70.1dB(A) respectively down to 64.6dB(A) to 69.9dB(A). Such noise level reductions are considered to be acoustically ineffective.

13. The ER also showed that provision of the 130 m long 5.5 m high proposed noise barriers could only reduce the traffic noise, again arising from the existing road, at 14 dwellings near Siu Lam roundabout varying from 70.6dB(A) to 78.6dB(A) by 1 to 2.5dB(A). The cost for provision of these noise barriers amounts to about \$0.9 million per dwelling which is prohibitively high when compared to those provided at other locations. We therefore consider that the provision of these noise barriers may not be practicable.

14. We have explored other possible alternative measures to mitigate the traffic noise. Instead of the proposed noise barriers, we will provide low noise road surfacing on the new viaduct and such provision will be able to reduce traffic noise by 2 to 3 dB(A). Not providing these noise barriers will save a capital cost of about \$21 million.

6. The NSRs are Siu Lam Hospital and Siu Lam Psychiatric Centre.

15. The proposed road improvement works may involve 444 trees to be felled. All trees to be felled are not important trees⁷. We will incorporate planting proposals as part of the project, including estimated quantities of 600 trees, 7 000 shrubs and 22 000 m² of grassed area.

16. For short term impacts during construction, we will control noise, dust and site run-off nuisance to comply with established criteria through the implementation of appropriate mitigation measures in the works contract. In addition, we will request the contractor to use closed-grab dredger with silt curtain in carrying out dredging works to minimise the impact on the water quality. We will also implement an EM&A programme to ensure timely and effective implementation of the recommended mitigation measures.

PUBLIC CONSULTATION

17. We consulted the Traffic and Transport Committee (T&TC) and the Environmental and Health Affairs Committee of Tsuen Wan District Council (TWDC) on 4 July and 12 July 2001 respectively. We also consulted the T&TC of the Tuen Mun District Council (TMDC) on 13 July 2001. Members of the Committees supported the project.

18. We gazetted the road schemes under the Roads (Works, Use and Compensation) Ordinance on 28 June 2002 and received one objection. In response to the concerns raised by the objector, we proposed two modifications and the objector agreed to withdraw his objection subject to the proposed modifications. The Chief Executive-in-Council authorised the project with modification on 20 May 2003 and the notice of authorisation was gazetted on 6 June 2003.

LAND ACQUISITION

19. The proposed works do not require acquisition of private land.

7. Important Trees include trees on the Register of Old and Valuable Trees, and any other trees which meet one or more of the following criteria :-

- (a) trees of over 100 years old;
- (b) trees of cultural, historical or memorable significance;
- (c) trees of precious or rare species,
- (d) trees of outstanding form; or
- (e) trees with trunk diameter exceeding one metre (measured at one metre above ground).

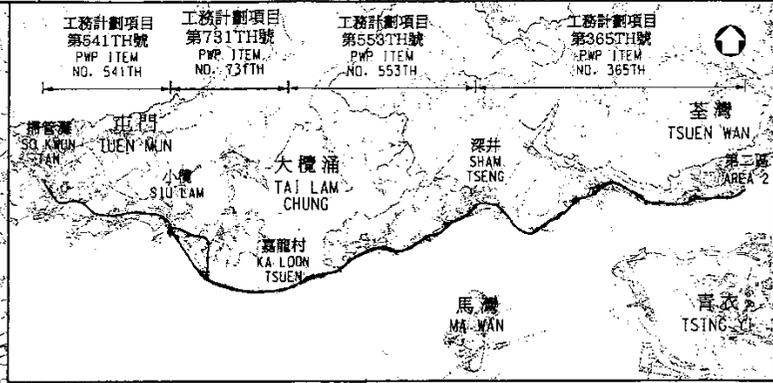
THE WAY FORWARD

20. We intend to submit the funding proposal to the Public Works Subcommittee and the Finance Committee of the Legislative Council in December 2003 and January 2004 respectively. Subject to funding approval, we plan to start the design and construction in March 2004 for completion in May 2007.

ADVICE SOUGHT

21. Members are invited to comment on this project before we seek PWSC's funding approval.

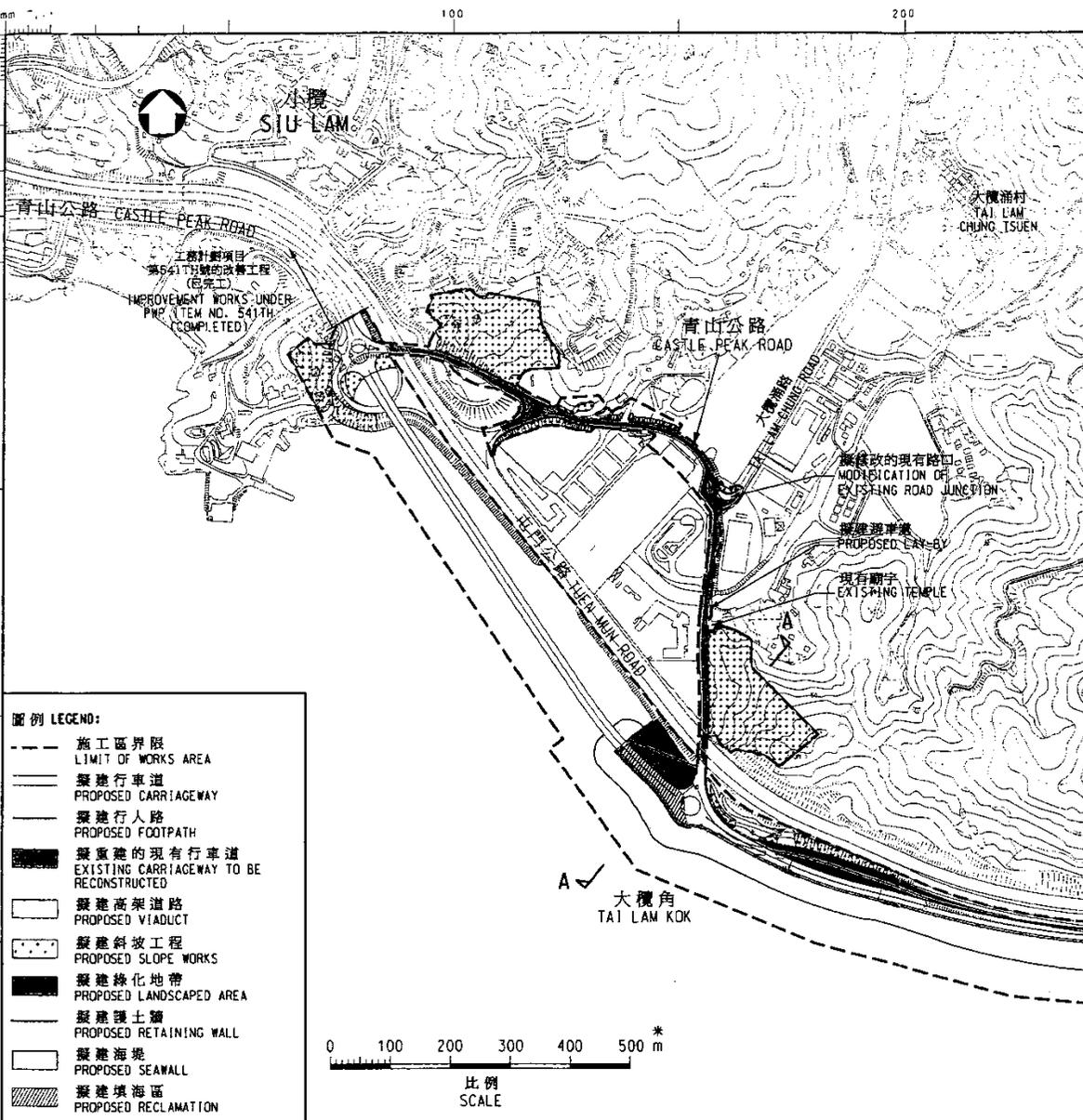
Environment, Transport and Works Bureau
November 2003



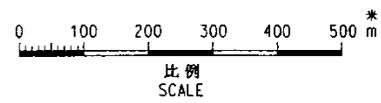
索引圖
KEY PLAN
比例 SCALE 1 : 75 000



工務計劃項目第553TH號
的改善工程 (進行中)
IMPROVEMENT WORKS UNDER
PWP ITEM NO. 553TH
(IN PROGRESS)



- 圖例 LEGEND:
- 施工區界限
LIMIT OF WORKS AREA
 - 擬建行車道
PROPOSED CARRIAGEWAY
 - 擬建行人路
PROPOSED FOOTPATH
 - 擬重建的現有行車道
EXISTING CARRIAGEWAY TO BE RECONSTRUCTED
 - 擬建高架道路
PROPOSED VIADUCT
 - ▨ 擬建斜坡工程
PROPOSED SLOPE WORKS
 - 擬建綠化地帶
PROPOSED LANDSCAPED AREA
 - 擬建護土牆
PROPOSED RETAINING WALL
 - 擬建海堤
PROPOSED SEAWALL
 - ▨ 擬建填海區
PROPOSED RECLAMATION



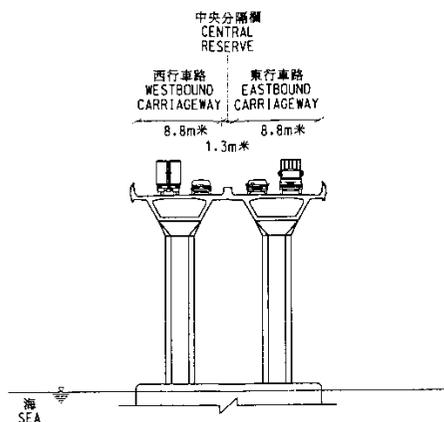
圖則名稱 drawing title
工務計劃項目第731TH號
嘉龍村至小樓之間的青山公路改善工程 - 工地平面圖
PWP ITEM No. 731TH
IMPROVEMENT TO CASTLE PEAK ROAD BETWEEN KA LOON TSUEN AND SIU LAM - SITE PLAN

設計 designed C.T. YEUNG 16/10/03	繪圖 drawn Y.L. SHIU 17/10/03
覆核 checked C.T. YEUNG 11/11/03	批准 approved C.W. CHAN 11/11/03

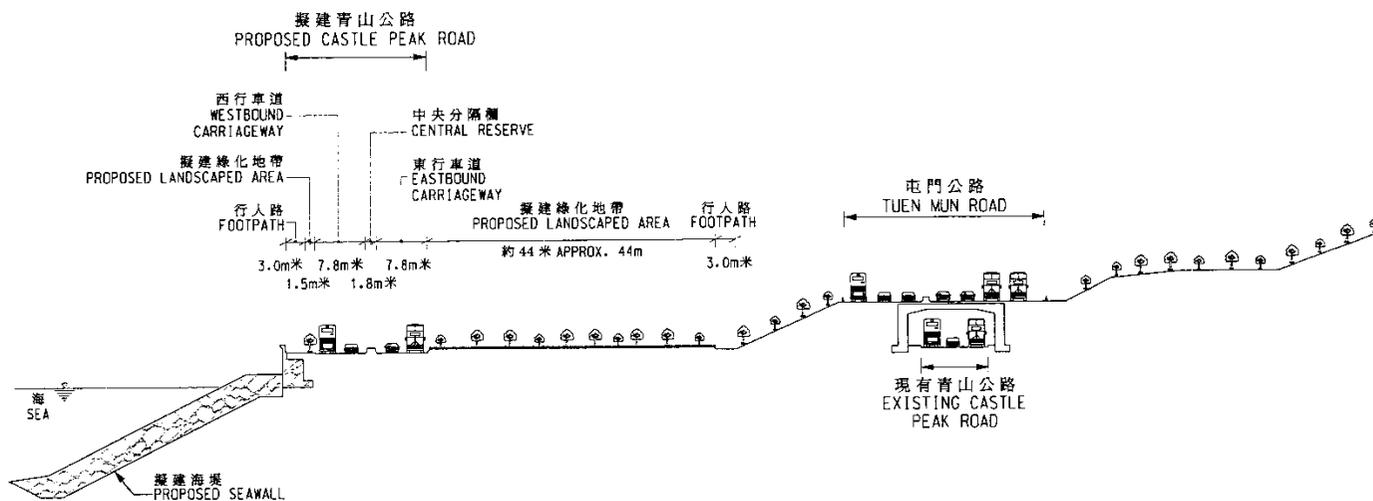
圖則編號 drawing no.
HMW6731TH-SK0037
比例 scale
1 : 7500
OR
AS SHOWN 顯示



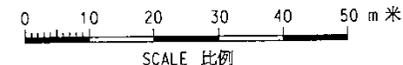
主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE



高架道路的典型截面 TYPICAL SECTION OF VIADUCT
比例 SCALE 1 : 500



截面 SECTION A - A
比例 SCALE 1 : 750



圖則名稱 drawing title

工務計劃項目第731TH號
嘉龍村至小欖之間的青山公路改善工程-截面圖
PWP ITEM NO. 731TH
IMPROVEMENT TO CASTLE PEAK ROAD BETWEEN KA LOON TSUEN AND SIU LAM - SECTIONS

設計 designed C.T.YEUNG 26/11/03	SIGNED	繪圖 drawn Y.L.SHTU 26/11/03	SIGNED	圖則編號 drawing no. HMW6731TH-SK0043	比例 scale 圖示 AS SHOWN
覆核 checked C.T.YEUNG 28/11/03	SIGNED	批准 approved C.W.CHAN 04/12/03	SIGNED	© 版權所有 COPYRIGHT RESERVED	
主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE				HIGHWAYS 路 DEPARTMENT 政 HONG KONG 警 香港	