

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 706 - HIGHWAYS

#### Transport - Roads

#### **593TH - Hiram's Highway improvement phase 3: improvement between Nam Wai and Ho Chung and upgrading local access roads**

Members are invited to recommend to Finance Committee the upgrading of **593TH** to Category A at an estimated cost of \$277.6 million in money-of-the-day prices.

### PROBLEM

The existing section of Hiram's Highway between Nam Wai and Ho Chung is substandard. It also has insufficient capacity to cope with future traffic demands.

### PROPOSAL

2. The Director of Highways, with the support of the Secretary for Transport, proposes to upgrade **593TH** to Category A at an estimated cost of \$277.6 million in money-of-the-day (MOD) prices for the implementation of the phase 3 improvement of Hiram's Highway.

### PROJECT SCOPE AND NATURE

3. The proposed scope of this project comprises -

- (a) construction of a new single two-lane carriageway approximately 700 metres long on embankments and bridge structures between Nam Wai and Nam Pin Wai;
- (b) formation of a road reserve for two future traffic lanes adjacent to the new carriageway mentioned in 3(a) above;
- (c) construction of a roundabout at the junction of Hiram's Highway and Nam Pin Wai Road;
- (d) local improvement to the existing section of Hiram's Highway between Nam Wai and Nam Pin Wai including provision of footpaths, two parking places with a total of about 70 parking spaces and a 7.3-metre wide local access road to Mok Tse Che and adjacent areas;
- (e) construction of two pedestrian subways; and
- (f) associated geotechnical, environmental mitigation, street lighting, drainage and landscaping works.

## JUSTIFICATION

4. The existing section of Hiram's Highway between Nam Wai and Ho Chung is a substandard single two-lane carriageway with steep gradients and a sharp bend near the middle of the section. In the past five years, a comparatively high rate<sup>1</sup> of traffic accidents have occurred at this road section. The Commissioner for Transport (C for T) considers that this section of Hiram's Highway needs improvement to reduce the incidence of traffic accidents.

5. To address the traffic safety problem, we propose to provide a new section of standard single two-lane carriageway from Nam Wai to Nam Pin Wai together with a roundabout. We will improve the safety standards of the existing substandard section of Hiram's Highway by closing the downhill carriageway of

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<sup>1</sup> Every year an average of 20 accidents with injuries have occurred at this road section. A quarter of these accidents were serious.

the sharp bend fronting Nam Wai and providing footpaths. This section will then serve as a local service road in the area. In addition, we will provide two pedestrian subways under the new carriageway to separate pedestrians and vehicles.

6. Apart from the traffic safety issue, morning peak hour traffic on the Hiram's Highway is extremely heavy. The volume/capacity (V/C) ratio<sup>2</sup> at the end of 1997 for Kowloon bound traffic on the existing section of Hiram's Highway between Nam Wai and Ho Chung during the morning peak hours was 1.1. Coupled with future developments in Areas 2, 3 and 4 near Sai Kung Town, C for T estimates that by 2001 the traffic situation will further deteriorate and the V/C ratio will reach 1.2.

7. In anticipation of the future increase in traffic demand, we plan to upgrade the section of Hiram's Highway from Clear Water Bay Road to Ho Chung from single two-lane to dual two-lane carriageways under a separate Public Works Programme item **6703TH** - Dualling of Hiram's Highway between Clear Water Bay Road & Marina Cove and improvement to local access to Ho Chung. To facilitate this plan, we intend to form the road reserve for the section from Nam Wai to Nam Pin Wai, in conjunction with the construction of the new carriageway under **593TH**.

8. C for T has also identified a strong demand<sup>3</sup> for car-parking facilities from villagers of the Heung Chung and Wo Mei areas. To alleviate this shortfall, we plan to provide two parking places under **593TH** with a total of about 70 parking spaces to meet the demand.

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<sup>2</sup> The capacity here refers to the design capacity of the road. A V/C ratio equal to or less than 1.0 means that the road has sufficient capacity to cope with the volume of vehicular traffic under consideration. A V/C ratio above 1.0 indicates the onset of mild congestion; above 1.2 indicates more serious congestion with traffic speeds progressively deteriorating with further increase in traffic.

<sup>3</sup> The Hong Kong Planning Standards and Guidelines recommends a maximum of one car parking space for each standard New Territories Exempted House. However, there are currently no car parking spaces provided in the Wo Mei and Heung Chung areas which have approximately 60 and 20 existing village houses respectively.

9. As a result of the proposed improvement works and the eventual increase in traffic flow, the residents along the new carriageway will be exposed to noise levels higher than the upper limits stipulated in the Hong Kong Planning Standards and Guidelines. We will provide noise barriers along relevant parts of the new road section to mitigate traffic noise.

## FINANCIAL IMPLICATIONS

10. We estimate the capital cost of the project to be \$277.6 million in MOD prices (see paragraph 11 below), made up as follows -

		<b>\$ million</b>	
(a)	Bridge structure, subways and earth retaining structures	76.5	
(b)	Roadworks, drainage, and slope works	59.7	
(c)	Noise barriers	23.9	
(d)	Landscape and associated works	10.0	
(e)	Consultants' fees for	33.5	
	(i) construction stage	4.4	
	(ii) site staff costs	29.1	
(f)	Contingencies	17.0	
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	Sub-total	220.6	(at December 1997 prices)
(g)	Inflation allowance	57.0	
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	Total	277.6	(in MOD prices)
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/A breakdown. ....

A breakdown of estimates for consultants' fees is at the Enclosure.

11. Subject to approval, we will phase the expenditure as follows -

Year	\$ million (Dec 1997)	Price adjustment factor	\$ million (MOD)
1999 - 2000	68.1	1.14878	78.2
2000 - 01	82.7	1.24642	103.1
2001 - 02	53.3	1.35237	72.1
2002 - 03	16.5	1.46732	24.2
	220.6		277.6

12. We derive the MOD estimate on the basis of the Government's forecasts of trend labour and construction prices over the period 1999 to 2003. We will tender the works under a standard re-measurement contract because the extent of foundation works for the bridge structures, subways, earth retaining structures and the quantities of earthworks for slope formation will depend on the actual site conditions. The contract also includes adjustments to the tender price due to inflation because the contract period will last more than 21 months.

13. We estimate the additional annually recurrent expenditure arising from the proposed works to be \$2,344,000.

## **PUBLIC CONSULTATION**

14. We consulted the Traffic and Transport Committee of the Sai Kung District Board (SKDB) on 3 November 1994 and obtained members' support to the proposed works. We further consulted the Environmental Improvement Committee of SKDB on 20 February 1997. The Committee supported the

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proposal in principle but expressed concern about possible noise nuisances created by the proposed works. We have carefully considered the Committee's views and have addressed their concerns by the measures proposed in paragraph 17 below.

15. We gazetted the proposed works under the Roads (Works, Use and Compensation) Ordinance on 23 May 1997 and received nine objections. Details of the objections are as follows -

- (a) Seven objectors were opposed to the land resumption for the project. Six of them asked the Government to amend the road alignment to avoid resuming their land. We have amended the land resumption boundaries to cover the minimum amount of land required for the project and have avoided resuming some of the affected lots. As a result, these six objectors have withdrawn their objections. The other objector asked the Government to resume the whole rather than part of his lot. The objector considered the compensation of \$6.7 million offered by Government unacceptable and has chosen not to withdraw his objection. We considered that there were no justifications to resume more land than required as the necessary modifications to the project to satisfy the requirements of this objector would have led to significant adverse impacts and additional costs. Therefore, we did not recommend any modifications to the project to meet this objector's demands;
- (b) One objector requested the provision of an additional subway connecting two villages, more car parking spaces and the retention of bus routes on the existing Hiram's Highway after the opening of the new Hiram's Highway. C for T considers that the requests are justifiable on transport grounds. We have included two car parking places and the requested subway under the project. The Kowloon Motor Bus (KMB) Company and the New Territories (NT) Public Light Bus (Scheduled Services) have also confirmed that they will

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retain three and five routes<sup>4</sup> at this section of Hiram's Highway respectively. The objector has subsequently withdrawn his objection; and

- (c) One objector objected to the clearance of his clan grave within the resumption boundary. After checking the details of the proposed works, we have now avoided clearing the grave. The objector has withdrawn his objection.

16. Having considered the revised scheme with appropriate works modifications and the unwithdrawn objection, the Chief Executive in Council authorized the project on 30 June 1998.

## ENVIRONMENTAL IMPLICATIONS

17. We completed an Environmental Impact Assessment (EIA) Study in March 1997 to assess the environmental impacts arising from the project. The Advisory Council on the Environment endorsed the findings of the EIA Study at its meeting on 21 April 1997. The Study concluded that noise barriers, replanting and transplantation of trees are necessary to mitigate traffic noise impact and to make up for the loss of trees respectively. We will implement the following environmental mitigation measures and include their costs in the project -

- (a) noise mitigation measures including
  - (i) 3-metre high plain noise barriers;
  - (ii) 3-metre high and 0.9-metre inclined cantilever inverted-L noise barriers;
  - (iii) 3-metre high and 1.3-metre inclined cantilever inverted-L noise barriers to be constructed along most of this section of the proposed Hiram's Highway; and

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<sup>4</sup> KMB Company will retain route numbers 92, 96R and 292P. The NT Public Light Bus (Scheduled Services) will also retain route numbers 1, 1A, 1S, 12 and 10.

- (b) compensatory replanting for the loss of trees including replanting secondary woodland trees and the transplanting of about 108 affected trees.

18. For short-term construction impact, we will control noise, dust and site runoff nuisances to comply with established guidelines and standards through the implementation of environmental pollution control measures and an environmental monitoring and audit programme in relevant contracts.

### **LAND ACQUISITION**

19. For the proposed road improvement works, we shall resume a total area of approximately 35 238 square metres of private land and we will clear approximately 35 000 square metres of government land and 50 persons in 15 families will be affected. The Director of Housing will arrange rehousing for the affected families in accordance with the current policy. We will charge the estimated cost of \$195 million for land acquisition and clearance against Head 701 - Land Acquisition Subhead 1100 CA - 'Compensation and *ex-gratia* allowances in respect of projects in the Public Works Programme'.

### **BACKGROUND INFORMATION**

20. The improvement of Hiram's Highway between Clear Water Bay Road and Ho Chung comprises four phases as follows -

- (a) Phase 1 - provision of a climbing lane between Clear Water Bay Road and Nam Wai;
- (b) Phase 2 - flyover and improvement works at the junction with Clear Water Bay Road;
- (c) Phase 3 - improvement works between Nam Wai and Ho Chung and upgrading of local access roads; and
- (d) Phase 4 - dualling of Hiram's Highway from Clear Water Bay Road to Marina Cove and improvement of the local access roads to Ho Chung.

21. We commenced construction of the phase 1 improvement works in February 1990 under **394TH** and completed the works in March 1994 at a cost of \$65.2 million.

22. We commenced construction of the phase 2 improvement works in January 1997 under **592TH** at an estimated cost of \$184.5 million in MOD prices. The construction is progressing satisfactorily and we expect to complete the works in early 2000.

23. We upgraded the phase 3 improvement works to Category B in April 1995 as **593TH**. In February 1996 we engaged consultants to undertake the investigation and detailed design work for the project and charged the estimated cost of \$4.6 million to the Subhead **6100TX** - "Highway works, studies and investigations for items in Category D of the Public Works Programme". We have substantially completed the detailed design and working drawings for the proposed roadworks. We plan to start the roadworks as soon as practicable after funding approval, in any case not later than March 1999. The works will take some 29 months to finish. We aim to complete construction works by August 2001 at the latest.

24. We plan to implement the phase 4 improvement works under **703TH** at an estimated cost of \$210.9 million at December 1997 prices. This project is currently under planning with construction scheduled to start in 2001 for completion in 2003.

25. To minimise traffic disruption during construction, we will carry out the proposed works under **593TH** in stages. We will maintain the same number of operating lanes as at present with adequate width for traffic to pass the construction site at all times during the construction period.

**593TH - Hiram's Highway improvement phase 3 :  
Improvement between Nam Wai and Ho Chung and  
upgrading local access roads**

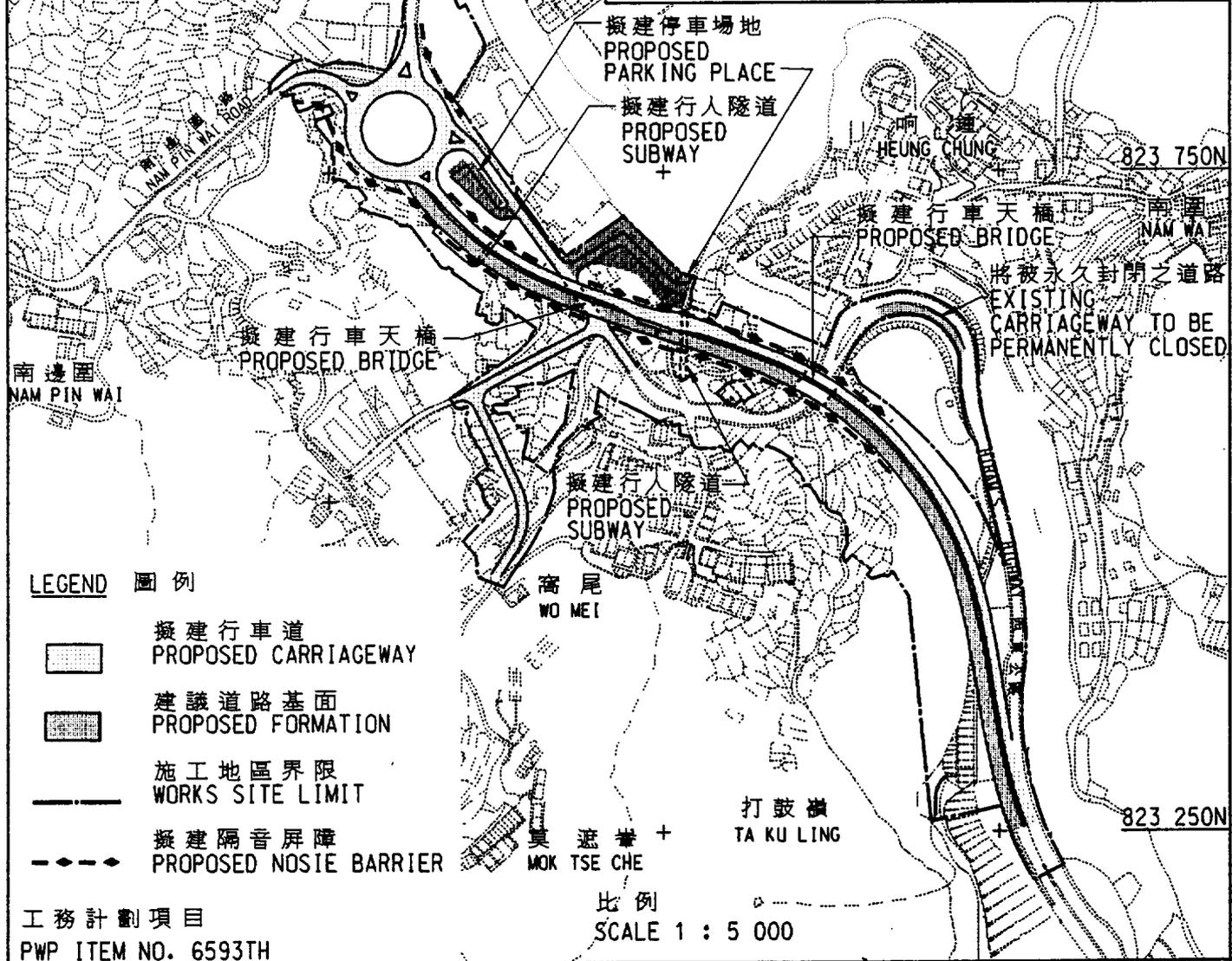
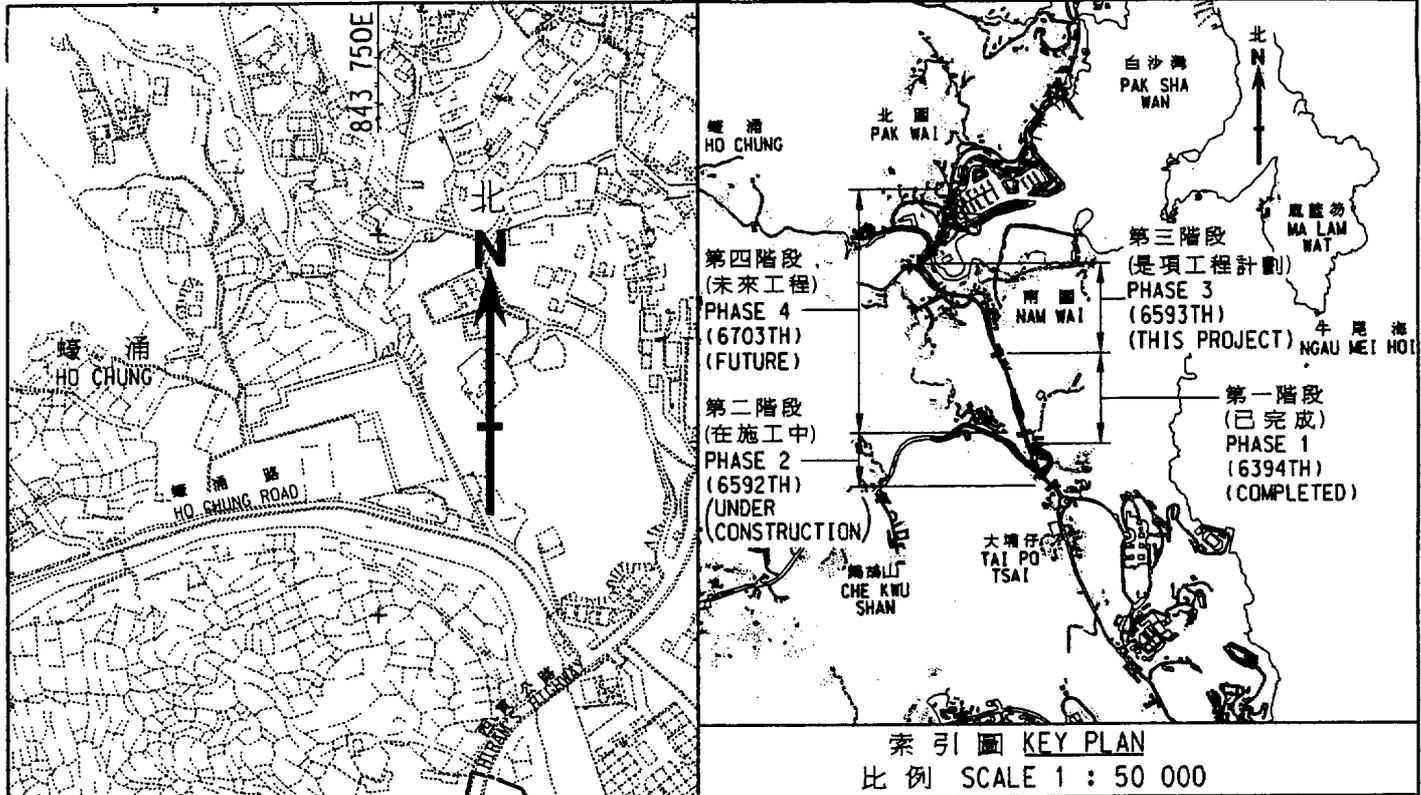
**Breakdown of estimates for consultants' fees (at December 1997 prices)**

Consultants' staff costs			Estimated man- months	Average MPS* salary point	Multiplier factor	Estimated fee (\$ million)
(a)	Project administration	Professional	13.0	40	3.0	2.3
	at construction stage	Technical	34.8	16	3.0	2.1
(b)	Site supervision by resident site staff employed by the consultants	Professional	42.0	40	2.1	5.2
		Technical	573.0	16	2.1	23.9
Total consultants' fees costs						33.5

\*MPS = Master Pay Scale

**Notes**

1. A multiplier factor of 3 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. (At 1.4.97, MPS pt. 40 = \$59,210 p.m. and MPS pt. 16 = \$19,860 p.m.) A multiplier factor of 2.1 is applied in the case of site staff supplied by the consultants.
2. The figures given above are based on estimates prepared by the Director of Highways. We will only know the actual man months and actual fees when we have selected the consultants through the usual competitive lump sum fee bid system.



title 圖則名稱 西貢公路改善工程第三階段： 南圍與蠔涌之間的道路改善工程及區 內通路改善工程 HIRAM'S HIGHWAY IMPROVEMENT PHASE 3 — IMPROVEMENT BETWEEN NAM WAI & HO CHUNG & UPGRADING LOCAL ACCESS ROADS	drawn by S. Y. FUNG	date 9. 98	drawing no. 圖號 NH21636	scale 比例 如圖示 AS SHOWN
	approved K. Y. LEUNG	date 9. 98		
office 路政署(新界區) HIGHWAYS / N. T. REGION		HIGHWAYS 路香 DEPARTMENT 政港 HONG KONG 署		