

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 706 – HIGHWAYS

#### Transport – Roads

#### 796TH – Hong Kong–Zhuhai–Macao Bridge – conceptual design and advance technical studies

Members are invited to recommend to Finance Committee the upgrading of **796TH** to Category A at an estimated cost of \$26.8 million in money-of-the-day prices for the conceptual design and advance technical studies for the Hong Kong–Zhuhai–Macao Bridge.

### PROBLEM

We need to carry out jointly with the governments of Guangdong Province and the Macao Special Administrative Region (Macao SAR) the conceptual design and advance technical studies for the Hong Kong–Zhuhai–Macao Bridge (HZMB) to define the requirements and scope of the HZMB project.

### PROPOSAL

2. The Director of Highways (D of Hy), with the support of the Secretary for the Environment, Transport and Works, proposes to upgrade **796TH** to Category A at an estimated cost of \$26.8 million in money-of-the-day (MOD) prices to fund the Government of the Hong Kong Special Administrative Region (HKSAR)'s share for the conceptual design and advance technical studies for the HZMB.

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## PROJECT SCOPE AND NATURE

3. The scope of **796TH** comprises -
  - (a) conceptual design of the HZMB<sup>1</sup>, including the main bridge, boundary crossing facilities and connecting infrastructure; and
  - (b) advance technical studies for the HZMB.

A plan showing the proposed alignment of the HZMB, the landing points and the connecting infrastructure in Hong Kong is at the **Enclosure**.

4. The HZMB Advance Work Co-ordination Group<sup>2</sup> (AWCG) is considering ways to expedite the programme of the project, including the possible commencement of advance technical studies for the HZMB in July 2005 and the conceptual design of the HZMB in September 2005 for completion by June 2006.

## JUSTIFICATION

5. The HZMB is being pursued as a priority project, as set out as a new initiative in the 2003 Policy Agenda and an on-going initiative in the 2004 and 2005 Policy Agendas.

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<sup>1</sup> We upgraded **787TH** "Hong Kong-Zhuhai-Macao Bridge Hong Kong Section and North Lantau Highway Connection – investigation and preliminary design" (I&PD) to Category A at an estimated cost of \$58.9 million in MOD prices in December 2003. We engaged consultants to undertake the I&PD study which includes investigation and conceptual design for the Hong Kong Section of the HZMB, and investigation and preliminary design for the North Lantau Highway Connection (NLHC) in March 2004 for completion in June 2006. The conceptual design of the Hong Kong Section of the HZMB being undertaken in the I&PD study is necessary to facilitate the completion of all necessary statutory procedures of the HKSAR, such as authorisation of the works under the Roads (Works, Use and Compensation) Ordinance and Environmental Impact Assessment Ordinance, etc. On the other hand, the conceptual design under **796TH** "Hong Kong-Zhuhai-Macao Bridge - conceptual design and advance technical studies" will cover the whole bridge to ensure consistency and compatibility in the design of the HZMB as a whole. This holistic approach is required to facilitate better definition of the project scope, determination of the best way of packaging the project and demarcation of the funding responsibilities. The conceptual design for the whole bridge will take into account the findings of the I&PD study in Hong Kong under **787TH** to ensure a design acceptable to all parties.

<sup>2</sup> After the State Council had given approval for the governments of the HKSAR, Guangdong Province and the Macao SAR to proceed with the preparatory work for the HZMB in August 2003, the three governments established the AWCG to coordinate and take forward the advance work for the HZMB, including studies on subjects such as alignment, environmental impact and hydrology.

6. In January 2003, the National Development and Reform Commission (NDRC) and the Government of HKSAR jointly commissioned the Institute of Comprehensive Transportation (ICT) to conduct a study entitled “Transport Linkage between Hong Kong and Pearl River West”. Completed in July 2003, the study confirmed that the construction of a land transport link between the HKSAR and the Pearl River West would contribute to the development of tourism, logistics, finance and trade in the HKSAR, reinforce its status as an international shipping and aviation centre, and promote the economic integration between the HKSAR and the Pearl River West. The study confirmed an urgent need for such a link and recommended the early commencement of various studies to confirm its technical feasibility.

7. On 4 August 2003, the State Council gave approval for the governments of the HKSAR, Guangdong Province and the Macao SAR to proceed with the preparatory work for the HZMB.

8. The AWCG was then established by the three governments to coordinate and take forward the advance work for the project. In February 2004, the AWCG commissioned the China Highway Planning and Design Institute (HPDI) to conduct a feasibility study<sup>3</sup> for the HZMB. The various topical studies under the feasibility study have been substantially completed, and expert panel meetings held to solicit comments and suggestions from experts from the Mainland, Hong Kong and Macao. On alignments, the HPDI had developed a few options for the HZMB across the Pearl River Estuary, which were examined by experts from the Mainland, Hong Kong and Macao during an Expert Panel Meeting on the HZMB Alignment organised by the NDRC on 1 and 2 April 2005. The Expert Panel Meeting recommended the bridge-cum-tunnel alignment with landings at San Shek Wan of the HKSAR, Gongbei of Zhuhai and A Pérola of the Macao SAR. The Expert Panel Meeting also recommended that the HPDI should look into further refining the alignment.

9. The feasibility study report is being finalised for submission to the AWCG for endorsement and then to the Central Government for approval. It is anticipated that the Central Government will require a few months to examine the feasibility study report.

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<sup>3</sup> The feasibility study comprises more than twenty topical studies on a wide range of topics including hydrology, environment, landscape, marine, ship impact protection, traffic and wind speed assessment.

10. To define more clearly the requirements and scope of the HZMB project, we need to proceed with the conceptual design of the HZMB. This will facilitate the AWCG's assessment of how best the project should be funded<sup>4</sup> and how the relevant documents should be drawn up. There is also a need to carry out certain advance technical studies to supplement the topical studies of the feasibility study and to pave the way for subsequent work for the project. The cost of the conceptual design for the HZMB and advance technical studies, estimated to be RMB 45.0 million and RMB 27.8 million respectively, should be shared by the three sides on an equal basis as in line with the cost-sharing for the feasibility study carried out by the HPDI. We would discuss with the Guangdong and Macao SAR governments on this basis.

## FINANCIAL IMPLICATIONS

11. We estimate the HKSAR's share of capital cost of the project to be \$26.8 million in MOD prices (see paragraph 12 below), made up as follows –

	<b>\$ million</b>	
(a) Conceptual design	15.0	
(b) Advance technical studies (compilation of technical specifications, collection of wind and sea wave data, cross-boundary management, etc.)	9.3	
(c) Contingencies	2.4	
Sub-total	26.7	(in September 2004 prices)
(d) Provision for price adjustment	0.1	
Total:	26.8	(in MOD prices)

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<sup>4</sup> Various funding options such as the build-operate-transfer will be considered.

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

Year	\$ million (Sep 2004)	Price	\$ million (MOD)
		Adjustment Factor	
2005 – 2006	23.0	1.00450	23.1
2006 – 2007	3.7	1.00576	3.7
	26.7		26.8

13. We have derived the MOD estimate on the basis of the Government's latest forecast of trend rate of change in the prices of public sector building and construction output for the period 2005 to 2007. The three governments will employ consultants to undertake the conceptual design and advance technical studies for the HZMB on a lump-sum basis without provision for price adjustment.

14. The proposed conceptual design and advance technical studies have no recurrent financial implications.

## PUBLIC CONSULTATION

15. We circulated an information paper on the arrangement for taking forward the advance work for the HZMB to Members of the Legislative Council Panel on Transport (the Panel) on 6 August 2003. We briefed the Panel on the progress of the HZMB project on 29 September and 24 October 2003. On 25 June 2004, we briefed the Panel on the commissioning of HPDI by the AWCG to conduct the feasibility study for the HZMB. We also informed the Panel of the setting up of a Project Office in Guangzhou to monitor the conduct of the feasibility study for the HZMB. On 27 May 2005, we informed Members of the Panel of the latest developments of the HZMB and consulted them on the proposed **796TH**. Members of the Panel raised no objection to the proposed **796TH** but suggested that the Islands District Council should be consulted prior to the PWSC meeting. We are making arrangements to consult the Islands District Council on the alignment options before the PWSC meeting.

16. On 13 October 2003, we briefed the Advisory Council on the Environment (ACE) on the HZMB project, and the choice of location for the landing point and alignments of the HZMB. The ACE supported our proposal to conduct further studies on the proposed landing points and alignments. We consulted the ACE again on 18 April 2005 and the representatives of the World Wide Fund, Friends of the Earth, Green Power, the Conservancy Association, Green Lantau Association, the Living Islands Movements and Save Our Shorelines in April 2005 on the landing point of the HZMB and various alignments of North Lantau Highway Connection (NLHC). The ACE members and representatives of the green groups gave useful suggestions on the scope of the environmental impact assessment (EIA) study and suggested that close liaison be maintained with the other two governments to facilitate assessment of the cumulative environmental impacts.

#### **ENVIRONMENTAL IMPLICATIONS**

17. The proposed conceptual design and advance technical studies for the HZMB will not give rise to any adverse environmental impacts.

#### **LAND ACQUISITION**

18. The proposed conceptual design and advance technical studies for the HZMB do not require any land acquisition.

#### **BACKGROUND INFORMATION**

19. In January 2003, D of Hy included an item under **Subhead 6100TX** "Highway works, studies and investigations for items in Category D of the Public Works Programme" to fund HKSAR's share of the cost for the ICT to conduct a study entitled "Transport Linkage between Hong Kong and Pearl River West" at an estimated cost of \$800,000 in MOD prices. The ICT completed the study in July 2003.

20. In March 2004, we included an item under **Subhead 6100TX** at an estimated cost of \$11.0 million at MOD prices to fund HKSAR's share of the cost for the HPDI to conduct the feasibility study for the HZMB. In April 2005, we increased the APE of this item by \$900,000 to \$11.9 million in MOD prices to provide fund for HKSAR's share of the cost for the HPDI to carry out some additional topical studies for the feasibility study.

21. The proposed conceptual design and advance technical studies for the HZMB will not directly involve any tree removal or planting proposals.

22. The proposed conceptual design and advance technical studies for the HZMB will be carried out in the Mainland and they will not create any new jobs in the HKSAR.

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Environment, Transport and Works Bureau  
May 2005



圖名 drawing title  
 工務計劃項目第796TH號 - 港珠澳大橋  
 概念設計及進一步技術研究  
 PWP ITEM NO. 796TH - HONG KONG - ZHUHAI - MACAO BRIDGE  
 CONCEPTUAL DESIGN AND ADVANCE TECHNICAL STUDIES

設計 designed	SIGNED	繪圖 draw	SIGNED	圖則編號 drawing no.	比例 scale
K.K.LAI	24/05/05	K.S.CHAN	25/05/05	HZM796TH-SPO001	不按比例 N.T.S.
審核 checked	SIGNED	批准 approved	SIGNED	版權所有 COPYRIGHT RESERVED	
K.C.LAU	26/05/05	K.C.TAM	25/05/05	 HIGHWAYS DEPARTMENT 路政處 HONG KONG	
港珠澳大橋項目管理處 HONG KONG - ZHUHAI - MACAO BRIDGE HONG KONG PROJECT MANAGEMENT OFFICE					