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Panel on Transport
Special meeting on 26 October 2011

Updated background brief on
Hong Kong-Zhuhai-Macao Bridge

Purpose

This paper provides background information on the Hong Kong-Zhuhai-Macao Bridge (HZMB) and summarizes the major concerns expressed by Legislative Council (LegCo) Members about the HZMB project in past discussions.

Hong Kong-Zhuhai-Macao Bridge

2. The HZMB Main Bridge will be a 29.6 km dual three-lane carriageway in the form of a bridge-cum-tunnel structure comprising an immersed tunnel of about 6.7 km. It will run within Mainland waters from the artificial islands off Gongbei of Zhuhai and A Pérola of the Macao Special Administrative Region (Macao SAR) to the eastern artificial island west of the Hong Kong Special Administrative Region (HKSAR) boundary. The HZMB is among the 10 major infrastructure projects highlighted in the 2007-2008 Policy Address.

Background

3. In January 2003, the National Development and Reform Commission and the HKSAR Government jointly commissioned the Institute of Comprehensive Transportation to conduct a study entitled "Transport Linkage between Hong Kong and Pearl River West". The study confirmed the strategic significance of and urgent need for the construction of a land transport link between HKSAR and the Pearl River West.

4. The governments of Guangdong, HKSAR and Macao SAR have since 2003 formed an HZMB Advance Work Coordination Group (AWCG) to commence the preparatory work of HZMB. The HKSAR Government also engaged consultants to carry out investigation and preliminary design (I&PD) of HZMB Hong Kong Section and North Lantau Highway Connection for linkage to the local road network.

5. In February 2004, AWCG commissioned the China Highway Planning and Design Institute (HPDI) to conduct a feasibility study for HZMB, covering a wide range of topics including navigation clearance, hydrology, environment, traffic, economic benefits and financial viability. Numerous expert panel meetings had been held to solicit views from experts from the Mainland, Hong Kong and Macao. The various topical studies under the feasibility study were substantially completed in 2005.

6. Various alignment options had been put forward by HPDI for evaluation. In April 2005, the National Development and Reform Commission organized an Expert Panel Meeting on HZMB Alignment in Zhuhai. The Expert Panel unanimously recommended the Northern bridge-cum-tunnel alignment option with landings at San Shek Wan of HKSAR, Gongbei of Zhuhai, and A Pérola of Macao SAR.

7. Geographically, HZMB has to land in the western part of Hong Kong. The Administration recommended North West Lantau as the landing point, in view of its lesser environmental impact and closer proximity to Hong Kong International Airport and the Disneyland, which could directly bring cross boundary traffic to these destinations through a shorter connecting infrastructure.

8. In December 2003, the Finance Committee (FC) approved funding of \$58.9 million in money-of-the-day (MOD) prices for investigation and preliminary design of the HZMB Hong Kong Section and North Lantau Highway Connection (now called Hong Kong Link Road).

9. In June 2005, FC approved the Administration's funding application to fund the HKSAR Government's share for the conceptual design and advance technical studies for HZMB at an estimated cost of \$26.8 million in MOD prices.

10. In January 2008, FC approved funding of \$88.6 million (in MOD prices) for engagement of consultants to undertake site investigation and preliminary design of the Tuen Mun-Chek Lap Kok Link and Tuen Mun Western Bypass.

11. At the 8th AWCG Meeting on 28 February 2008, the three governments reached a consensus on the financing arrangement for the HZMB project. In particular, it was agreed that the three governments would be responsible for the construction, operation and maintenance of their own boundary crossing facilities (BCF) in their respective territories (三地三檢).

12. In June 2008, FC approved the Administration's funding proposal to engage consultants to undertake I&PD for HZMB Hong Kong BCFs at an estimated cost of \$86.9 million in MOD prices, and another funding proposal to fund HKSAR's share for some preconstruction works for HZMB at an estimated cost of \$46.6 million in MOD prices.

13. In February 2009, FC approved funding of \$233.5 million in MOD prices for funding HKSAR's share of the cost for the preliminary design and site investigation works for the HZMB Main Bridge.

14. In May 2009, FC approved the Administration's proposal to seek funding support for the detailed design and construction of the HZMB Main Bridge at an estimated cost of \$9,046.5 million in MOD prices.

15. In May 2009, FC approved funding of \$621.9 million (in MOD prices) for engagement of consultants to undertake detailed design and site investigation of the Hong Kong Boundary Crossing Facilities;

16. Following the State Council's formal approval of the Feasibility Study Report of the HZMB project in October 2009, the construction of the Main Bridge commenced on 15 December 2009 and was planned to be completed by 2016.

17. For the local related infrastructure projects, the detailed design of the Hong Kong BCF superstructures and infrastructures commenced in December 2010. The Administration planned to tie in the completion and commissioning of the relevant highway infrastructure projects with the commissioning of the HZMB Main Bridge by 2016.

Discussions held by the Panel on Transport on the HZMB project

18. The Administration briefed the Panel on Transport (the Panel) on the progress of the HZMB project on 29 September and 24 October 2003. On 25 June 2004, the Administration briefed the Panel on the commissioning of

HPDI by AWCg to conduct the feasibility study for HZMB and the setting up of a Project Office in Guangzhou to monitor the conduct of the feasibility study. On 27 May 2005, the Administration briefed the Panel on the latest developments of HZMB and consulted members on the proposed conceptual design and advance technical studies for HZMB.

19. On 25 April 2008, the Administration briefed the Panel on the progress of the planning work for HZMB, the Hong Kong BCF and the link road in Hong Kong, and consulted members on the funding proposals for the preconstruction works for HZMB and the I&PD study for Hong Kong BCF. On 16 May 2008, the Administration further briefed the Panel on the traffic projection and economic benefits of HZMB, the split of government subsidy for HZMB as well as a cost breakdown of the preconstruction works for the project. On 19 December 2008, the Panel was consulted on the funding application to be made to PWSC and FC for the funding support for the preliminary design and site investigation for the HZMB Main Bridge.

20. On 24 April 2009, the Panel was consulted on funding applications to seek funding support for the detailed design and construction of HZMB Main Bridge, and for the detailed design and site investigation for Hong Kong BCF. On 30 March 2010, the Panel discussed a staffing proposal relating to the implementation of HZMB and related highway infrastructure projects.

Major concerns expressed by LegCo Members on the HZMB project

21. During previous discussions of the Panel and at relevant meetings of the Public Works Subcommittee and FC, LegCo Members had expressed the following concerns -

- (a) Financing arrangement and economic benefits
 - some Members were concerned about the proposal made in the feasibility study report for HZMB of inviting private investment to undertake the Main Bridge under a "Build-Operate-Transfer" (BOT) franchise for a period of 50 years, in view of the inherent problems associated with the BOT tunnels where tunnel operators aimed at profit maximization only;
 - some Members had doubts whether the HZMB project was in the best interest of Hong Kong or would end up benefiting the neighbouring region, as the commissioning of HZMB would

provide greater convenience for Hong Kong residents to travel to Macao and the Mainland for consumption activities there. They were not convinced that the estimated direct benefits brought to Hong Kong by HZMB, as compared to those to neighbouring regions, would justify a differential cost contribution of 50.2%, 35.1% and 14.7% by Hong Kong, the Mainland and Macao respectively;

- whether the same ratio would be used in determining the three governments' respective share of ownership of HZMB, thereby giving the HKSAR Government the largest share of ownership after the expiry of the BOT concession period;
 - given the low traffic forecast of only up to 14 000 vehicles per day in 2016, some Members considered that the project was unlikely to attract private operators unless they were assured of certain guaranteed profits or government subsidy to hedge against possible losses. Moreover, the Administration had not given a clear indication whether further financial commitment would be required to cover possible losses in the future operation of HZMB; and
 - some Members considered that the project should be taken forward as a public works project funded by the three governments instead of involving private investment through a BOT approach;
- (b) Control of the three governments over the future toll level adjustment mechanism;
- (c) Cross-boundary vehicle quota system
- some Members called on the HKSAR Government to formulate measures in collaboration with the Mainland and the Macao authorities to boost the traffic flow of HZMB, such as by relaxing the issue of cross-boundary vehicle licences or issuing one-day or two-day passes to enable more Hong Kong motorists to use HZMB;
- (d) Implementation timetable for the HZMB project
- some Members considered that the logistics and freight forwarding industries had been longing for the expeditious

implementation of the project, without which Hong Kong would be marginalized as goods from the Western Pearl River Delta could not be transported via Hong Kong's logistics network;

- (e) Choice of alignment and location for the landing point of HZMB in Hong Kong;
- (f) Traffic impact of HZMB on the existing local road network and implementation plan for connecting transport infrastructure for HZMB;
- (g) Locations of Hong Kong BCF and the mode of "separate locations of BCF" to serve HZMB;
- (h) Environmental concerns –
 - some Members were concerned about the cumulative environment impacts of HZMB on Hong Kong, e.g. the impacts on the habitat of the Chinese White Dolphin and the marine culture as well as the need to adopt a unified standard with the Mainland in conducting environmental impact assessment; and
 - some Members considered that the Administration should ensure effective and thorough consultation with all relevant stakeholders, in particular the environmental concern groups and community groups, in taking forward the HZMB project; and
- (i) Measures to safeguard the employment opportunities for local construction workers in the HZMB project.

22. Members' concern about the proposal of inviting private investment to undertake the HZMB Main Bridge under a BOT franchise and the inherent problems associated with BOT tunnels was addressed when the governments of Guangdong, Hong Kong and Macao reached a consensus in August 2008 to take up the responsibility for the construction of the HZMB Main Bridge. According to the Administration, by switching to this model of government financing to cover the construction cost, the three governments will have better control over the toll level and lower tolls can be secured. The Central People's Government will also make contribution to the construction cost of the Main Bridge. Together with the contribution of Guangdong, the Mainland will be

contributing a total of RMB 7 billion, whilst Hong Kong and Macao will contribute RMB 6.75 billion and RMB 1.98 billion respectively. The total contribution of the three sides will be RMB 15.73 billion, which is about 42% of the total construction cost of the Main Bridge. The remaining funding required will be financed by loans.

Relevant motion/questions moved/raised at Council meetings

23. The Council passed a motion at its meeting on 7 February 2007 on "Expediently implementing the construction of cross-boundary transport infrastructures between Hong Kong and the Mainland". The wording of the motion is in **Appendix I**.

24. At the Council meeting on 19 May 2010, Hon LAU Kong-wah raised a question on HZMB. At the Council meetings on 8 June and 22 June 2011, Hon LAM Tai-fai and Hon Audrey EU raised questions on the judicial review of HZMB and on the impacts on projects due to that judgment in respect of the environmental impact assessment (EIA) reports of HZMB respectively.

Recent developments

25. On 18 April 2011, a judgment was handed down by the High Court quashing the Director of Environmental Protection's approval of the EIA reports relating to HZMB and the environmental permits for the relevant projects. On 27 September 2011, the Court of Appeal handed down its judgment allowing the appeal of the Director of Environmental Protection (DEP) and confirming the validity of the environmental permits previously issued by DEP.

26. The Administration intends to update the Panel on the latest developments and consult Panel members on the funding applications for taking forward the works in respect of the Hong Kong BCF and Hong Kong Link Road, as well as the Tuen Mun-Chek Lap Kok Link, at the special meeting on 26 October 2011.

Relevant papers

27. A list of relevant papers is in **Appendix II**.

Council Business Division 1
Legislative Council Secretariat
21 October 2011

(Translation)

**Motion on
"Expeditiously implementing the construction of cross-boundary
transport infrastructures between Hong Kong and the Mainland"
moved by Hon CHEUNG Hok-ming
at the Legislative Council meeting
of Wednesday, 7 February 2007**

Motion as amended by Hon Albert HO Chun-yan

"That, as the Government has announced its Action Agenda to tie in with the National Eleventh Five-Year Plan and fully affirmed the importance of cross-boundary cooperation between Hong Kong and the Mainland, this Council urges the Government to expedite the construction of various cross-boundary transport infrastructures between Hong Kong and the Mainland, such as the Guangzhou-Shenzhen-Hong Kong Express Rail Link, Liantang Eastern Corridor and Hong Kong-Zhuhai-Macao Bridge, and to resume the ferry services between Shatin and Eastern Guangdong, etc; at the same time, the Government should expeditiously review and expedite the construction of ancillary facilities for cross-boundary transport infrastructures within Hong Kong's territory, including:

- (a) Route 10 (Northern Section), the Tuen Mun Western Bypass, Tuen Mun-Chek Lap Kok Link, Tuen Mun Eastern Bypass and the easterly link road connecting Deep Bay Link with Route 3, and taking proactive measures to optimize the use of Route 3; and
- (b) expeditiously completing the extension of Tuen Mun Road and widening part of its expressway section to four-lane carriageway;

to comprehensively enhance the integration with the Mainland's transport infrastructures, so as to promote sustainable and steady development of Hong Kong's economy."

Hong Kong-Zhuhai-Macao Bridge

List of relevant papers

Date of meeting	Committee	Minutes/Paper	LC Paper No.
29.9.2003	Panel on Transport (TP)	Administration's paper on Hong Kong-Zhuhai-Macao Bridge	LC Paper No. CB(1)2346/02-03(01) LC Paper No. CB(1)2492/02-03(01) LC Paper No. CB(1)128/03-04(01)
		Minutes of the meeting	LC Paper No. CB(1)174/03-04
24.10.2003	TP	Administration's paper on Hong Kong-Zhuhai-Macao Bridge	LC Paper No. CB(1)192/03-04(01)
		Minutes of the meeting	LC Paper No. CB(1)404/03-04
25.6.2004	TP	Administration's paper on Hong Kong-Zhuhai-Macao Bridge and the Northwest New Territories Traffic and Infrastructure Review	LC Paper No. CB(1)2180/03-04(02)
		Minutes of the meeting	LC Paper No. CB(1)2501/03-04

Date of meeting	Committee	Minutes/Paper	LC Paper No.
27.5.2005	TP	Administration's paper on Hong Kong–Zhuhai– Macao Bridge and North Lantau Highway Connection	LC Paper No. CB(1)1605/04-05(03) LC Paper No. CB(1)1742/04-05(01)
		Administration's paper on Hong Kong–Zhuhai– Macao Bridge	LC Paper No. CB(1)1992/04-05(01)
		Minutes of the meeting	LC Paper No. CB(1)1853/04-05
7.2.2007	Council	Official record of proceedings of motion debate on "Expeditiously implementing the construction of cross-boundary transport infrastructures between Hong Kong and the Mainland"	
25.4.2008	TP	Paper on Hong Kong-Zhuhai-Macao Bridge prepared by the Legislative Council Secretariat (Background brief)	LC Paper No. CB(1)1348/07-08
		Administration's paper on Hong Kong - Zhuhai - Macao Bridge, Hong Kong Boundary Crossing	LC Paper No. CB(1)1317/07-08(04)

Date of meeting	Committee	Minutes/Paper	LC Paper No.
		Facilities and the Link Road in Hong Kong	
		Minutes of the meeting	LC Paper No. CB(1)1975/07-08
16.5.2008	TP	Administration's paper on update on Hong Kong-Zhuhai-Macao Bridge	LC Paper No. CB(1)1520/07-08(01)
		Administration's paper on Hong Kong-Zhuhai-Macao Bridge (Follow-up paper)	LC Paper No. CB(1)1605/07-08(01)
		Minutes of the meeting	LC Paper No. CB(1)2205/07-08
5.8.2008	Press release	11th Plenary of the Hong Kong/Guangdong Co-operation Joint Conference today	
20.10.2008	Press release	Expression of Interest invited for Hong Kong-Zhuhai-Macao Bridge project	
27.11.2008	Press release	Bridge feasibility report to be submitted to Central Government	
19.12.2008	TP	Administration's paper on Hong Kong- Zhuhai -Macao Bridge Main Bridge	LC Paper No. CB(1)406/08-09(03)

Date of meeting	Committee	Minutes/Paper	LC Paper No.
		Administration's paper on Hong Kong-Zhuhai-Macao Bridge (HZMB) Assessment of Economic Benefits and Cost Allocation for HZMB Main Bridge among the three Governments	LC Paper No. CB(1)434/08-09(01)
		Paper on Hong Kong-Zhuhai-Macao Bridge prepared by the Legislative Council Secretariat (Updated background brief)	LC Paper No. CB(1)407/08-09
		Administration's paper on Hong Kong - Zhuhai - Macao Bridge (HZMB) connectivity of the HZMB with the road network at the Western Pearl River Delta and the potential development there-at (Follow-up paper)	LC Paper No. CB(1)591/08-09(01)
		Minutes of the meeting	LC Paper No. CB(1)831/08-09
24.4.2009	TP	Administration's paper on Hong Kong- Zhuhai -Macao Bridge: Main Bridge and Hong Kong	LC Paper No. CB(1)1337/08-09(03)

Date of meeting	Committee	Minutes/Paper	LC Paper No.
		Boundary Crossing Facilities	
		Administration's paper on Hong Kong - Zhuhai - Macao Bridge (Follow-up paper)	LC Paper No. CB(1)1493/08-09(01)
		Minutes of the meeting	LC Paper No. CB(1)2541/08-09
9.3.2010	TP	Administration's paper on latest progress of Hong Kong-Zhuhai-Macao Bridge Main Bridge	LC Paper No. CB(1)1354/09-10(01)
30.3.2010	TP	Administration's paper on proposed retention of two supernumerary posts and extension of redeployment of one permanent post in the Hong Kong-Zhuhai-Macao Bridge Hong Kong Project Management Office of Highways Department	LC Paper No. CB(1)1451/09-10(08)
		Minutes of the meeting	LC Paper No. CB(1)1996/09-10
20.5.2011	House Committee	Administration's paper on Latest progress of the work of the Hong Kong Special Administrative Region in Complementing the National 12th	LC Paper No. CB(2)1792/10-11(01)

Date of meeting	Committee	Minutes/Paper	LC Paper No.
		Five-Year Plan	
		Paper on the National Twelfth Five-Year Plan prepared by the Legislative Council Secretariat (Background brief)	LC Paper No. CB(2)1792/10-11(02)
		Verbatim Transcript of the meeting	LC Paper No. CB(2)2065/10-11
18.10.2011	TP	Transport-related Policy Initiatives of the Transport and Housing Bureau	LC Paper No. CB(1)54/11-12(01)

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