

立法會
Legislative Council

LC Paper No. CB(4)270/14-15(07)

Ref. : CB4/PL/TP

Panel on Transport
Meeting on 23 December 2014

Background brief on Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities

Purpose

This paper provides background information on the Hong Kong-Zhuhai-Macao Bridge ("HZMB") Hong Kong Boundary Crossing Facilities ("HKBCF") and summarizes the major concerns expressed by Legislative Council ("LegCo") Members on the subject during past discussions.

Background

2. HZMB is a cross-boundary cross-sea road infrastructure project providing direct land transport connection between the two shores of the Pearl River Delta, linking Hong Kong in the east and Macao and Zhuhai in the west. Structurally, HZMB and related infrastructure works comprise two parts: (i) the HZMB Main Bridge; and (ii) the respective link roads and boundary crossing facilities of the three areas including the Hong Kong Link Road ("HKLR"), Tuen Mun-Chek Lap Kok Link ("TM-CLKL"), Tuen Mun Western Bypass ("TMWB") and HKBCF.

3. The HZMB Main Bridge will require construction of HKBCF and HKLR. Together with TM-CLKL and TMWB, the HZMB project will enable the formation of an important road network linking up Hong Kong, Zhuhai, Macao and Shenzhen, thereby further enhancing the transportation and aviation hub status of Hong Kong. With its proximity to the Hong Kong International Airport, HKBCF will also serve as an important multi-modal transportation hub.

4. At the meeting of the HZMB Task Force¹ on 7 January 2007, it was agreed that the three governments should set up their own boundary crossing facilities within their respective territories. On this basis, the Highways Department ("HyD") commissioned a site selection study in May 2007 which finally recommended the location of HKBCF to be reclaimed at the waters off the north-east of the Airport Island. In July 2008, HyD commenced the investigation and preliminary design study.

5. The HKBCF project involves construction of various infrastructures/roads and buildings, which includes mainly the construction of about 4.1 km of seawalls for the HKBCF island, reclamation of about 130 ha for the HKBCF island; (including the use of the non-dredge reclamation method and stone columns (to accelerate settlement)); and reclamation of about 6 ha at the east coast of the Airport Island for roads connecting to the Airport. A plan showing the locations of HKBCF and other HZMB related local infrastructural projects is in **Appendix I**.

6. With the funding approval of \$30.4339 billion from the Finance Committee ("FC") in November 2011, the reclamation works for forming an artificial island to provide land for the development of HKBCF commenced in the same month. HyD had started inviting tenders for the construction of the superstructures of HKBCF by phases from September 2013 to early 2014. The completion of the HKBCF project, together with the HKLR project and the southern connection of the TM-CLKL project², will need to tie in with the planned commissioning of the Main Bridge in 2016.

7. In response to some reports by the media regarding the project cost of HZMB HKBCF, the Transport and Housing Bureau indicated in a press release issued on 6 November 2014 that according to the current preliminary estimate, the approved project estimate ("APE") of \$30.4339 billion has to be increased by about \$5 billion. The matter has aroused concerns of the LegCo Members.

Major concerns expressed by Members during recent discussions

8. The major concerns expressed by LegCo Members during recent discussions on HZMB and its related local infrastructural projects are summarized in the ensuing paragraphs.

¹ The Task Force was formed by the National Development and Reform Commission ("NDRC") in 2007 to implement the project. The Task Force was led by the NDRC, with representatives from the Ministry of Transport, the Hong Kong and Macao Affairs Office of the State Council, and the governments of Hong Kong Special Administrative Region, Guangdong and Macao Special Administrative Region as members. The Administration reported to the Panel on Transport in March 2010 regarding the management framework after works commencement of HZMB Main Bridge. (Refer to details in LC Paper No. CB(1)1354/09-10(01).)

² The southern section of TM-CLKL is a road section of approximately 3.5 km long linking HKBCF and the road network of North Lantau.

Development of bridgehead economy at HKBCF

9. Some Members have been requesting the Administration to develop "bridgehead economy" at HKBCF. According to the 2014 Policy Address, the Chief Executive stated that to dovetail with the completion of HKBCF of HZMB, the Government had carried out a preliminary review of the supporting infrastructure to explore the feasibility of developing major shopping, dining, entertainment and hotel facilities at HKBCF.

10. In response to a question raised at the Council meeting of 30 April 2014, the Secretary for Development advised that in the third quarter of 2013, the Development Bureau, in collaboration with the Planning Department and Civil Engineering and Development Department, conducted a general review on the proposed topside commercial development on the HKBCF island of HZMB. The review preliminarily confirmed that there would not be any insurmountable technical problems in aspects of transportation, infrastructure and environmental impact, etc for this proposed commercial development. The Administration was seeking funding approval from the FC to engage consultants to conduct a planning, engineering and architectural study on the overall development concept of the proposed commercial development on the HKBCF island of HZMB.

Project cost

11. In light of several major infrastructural projects facing significant cost overrun, some Members expressed concern on the Administration's ability to control the expenditures of public works projects. Some Members were concerned about whether the cost overrun of the HKBCF project would have any impact on the toll of HZMB in future.

12. In response to two questions raised at the Council meeting of 3 December 2014, the Administration advised that the APE of the HKBCF project had to be increased mainly because the tender prices/estimated tender prices for the works contracts awarded/to be awarded were higher than the estimate when the Government sought approval from LegCo in 2011 due to the surge in wage levels of construction workers, prices of construction materials and machinery, etc., in recent years.

13. The Administration added that HyD had implemented a series of measures to strictly control the project expenditures. When devising the design of HKBCF, HyD had optimised and adopted as far as possible cost-effective design and materials for stringent cost control. On tendering and procurement, HyD had examined in detail the appropriate arrangement and packaging of works. As such, the superstructure works of HKBCF had been divided into a number of civil, building as well as electrical and mechanical contracts and the scope of the contracts had been reduced as far

as possible to increase the number of contractors capable of undertaking the works, thus resulting in more competitive tender prices.

14. The Administration further advised that the Hong Kong Special Administrative Region Government is responsible for the expenditure of the HKBCF project and the accounts were separated from the HZMB Main Bridge project the construction of which is co-financed by the three governments. Therefore, the increase in the approved project cost for the HKBCF project would not affect the toll of HZMB in future.

Quality control of works

15. At the Panel meeting held on 26 October 2011, members noted that the float-time for HZMB and its related highway infrastructure projects has been compressed by the legal proceedings of a judicial review ("JR")³ case from early 2010 to September 2011. In order to ensure smooth handling and timely completion, HyD has made adjustment in the construction method to accelerate the works concerned through increased labour resources, arrangement of overtime work and increased plant resources for completion on time by end 2016. Members expressed concern that the quality of works might be affected with the compressed works programme.

16. At the Council meeting held on 29 October 2014, the Administration advised that the relevant bureaux and works departments had put in place comprehensive guidelines and stringent requirements on the procurement, delivery and quality control of infrastructure projects. To guarantee the quality of works in large infrastructure projects, the relevant works departments would strictly enforce these guidelines and requirements in respect of the selection of consultants and contractors, appointment of site supervisory staff, material testings, supervision of works, regulatory control and performance appraisal of consultants and contractors, and acceptance procedures.

Construction manpower

17. In view of the increasing demand for construction manpower arising from the implementation of a large number of infrastructure projects, some Members expressed concern on whether the manpower supply of various

³ On 22 January 2010, a Tung Chung resident filed an application for leave for JR against the decisions of the Director of Environmental Protection ("DEP") as regards the approval of the Environmental Impact Assessment ("EIA") Reports and the granting of Environmental Permits relating to the HKBCF and HKLR projects. The High Court handed down its judgment on 18 April 2011. The court judgment quashed the Environmental Permits of the HZMB local projects and therefore the associated works could not commence. DEP then appealed against the court's judgment. The Court of Appeal handed down its judgment on 27 September 2011, allowing DEP's appeal and therefore the EIA reports and Environmental Permits of the HKBCF and HKLR projects are maintained valid.

trades of the construction industry in the coming five years can meet the manpower demand of the public works projects under planning. Some Members suggested the Administration to review the policy on importation of construction workers afresh, so as to ensure sufficient supply of construction workers to meet the manpower demand and to reduce construction costs.

18. In response to questions raised at the Council meetings of 29 October, 5 November and 3 December 2014, the Administration advised that the Government and the Construction Industry Council ("CIC") were committed to enhancing training for construction workers and publicity so as to attract more new entrants to the industry. The Labour Department ("LD") had collaborated with relevant policy bureaux and departments in rolling out a new arrangement in mid-April 2014 to expedite the preparatory work for processing applications submitted by contractors of public sector works for importing workers in the 26 shortage trades identified by CIC under the Supplementary Labour Scheme. The Government would liaise closely with the industry to review the effectiveness of the arrangement in a timely manner for meeting the existing tight manpower demand in the industry, and introduce appropriate measures as required.

Construction safety

19. Due to several industrial accidents occurred at the construction sites of the HZMB related local infrastructural projects, some Members expressed worries that the contractors might neglect industrial safety in a bid to catch up with works progress to meet the target of completing HZMB in 2016.

20. In response to a question raised at the Council meeting of 12 November 2014, the Administration reported that since the commencement of work on the HZMB local projects in Hong Kong from 2011 up to the first half of 2014, there had been two fatalities and 44 injuries. According to the Administration, contractors engaged in high-risk processes on construction sites should, in accordance with the requirements of the occupational safety and health legislation, provide and maintain safe plant and system of work. LD would, through inspections and enforcement, scrutinise whether the contractors have complied with these occupational safety requirements, and from time to time launch special enforcement operations, targeting higher-risk processes.

Environmental and ecological impacts

21. At the FC meeting on 18 November 2011, members expressed concern about how the Administration would monitor contractors' compliance with the required environmental standard while implementing the HZMB related local infrastructural projects.

22. The Administration advised that the construction contract documents and Environmental Permits had imposed stringent conditions requiring the contractors to employ environmental teams to monitor water quality, air, noise, waste management, ecology, as well as landscape and visual impact on the environment. HyD would engage environmental consultants to audit the environmental monitoring work carried out by the environmental teams and check the effectiveness of the mitigation measures. An office would also be set up to oversee the cumulative environmental impact arising from the HZMB local projects and other concurrent projects in the adjoining area, including the HZMB Main Bridge project in the Mainland waters, to ensure compliance with the environmental laws in Hong Kong.

Cross-boundary transport arrangements

23. On Members' concern about the cross-boundary transport arrangements of HZMB, the Administration advised that to prepare for the commissioning of HZMB in 2016, the three governments had set up the Co-ordination Group on Cross-boundary Matters to press ahead with the relevant policy studies and discuss the relevant cross-boundary transport arrangements. The scope of the policy studies covered regulation and quota system of cross-boundary vehicles, toll level for cross-boundary vehicles, traffic management, operation and maintenance, rescue and emergency plan, enforcement coordination, customs clearance facilitation, etc. The Administration would, having regard to the functions and characteristics of HZMB, formulate a comprehensive plan that would complement the local road system to bring the economic benefits of the bridge into full play.

Relevant motion/questions moved/raised at Council meetings

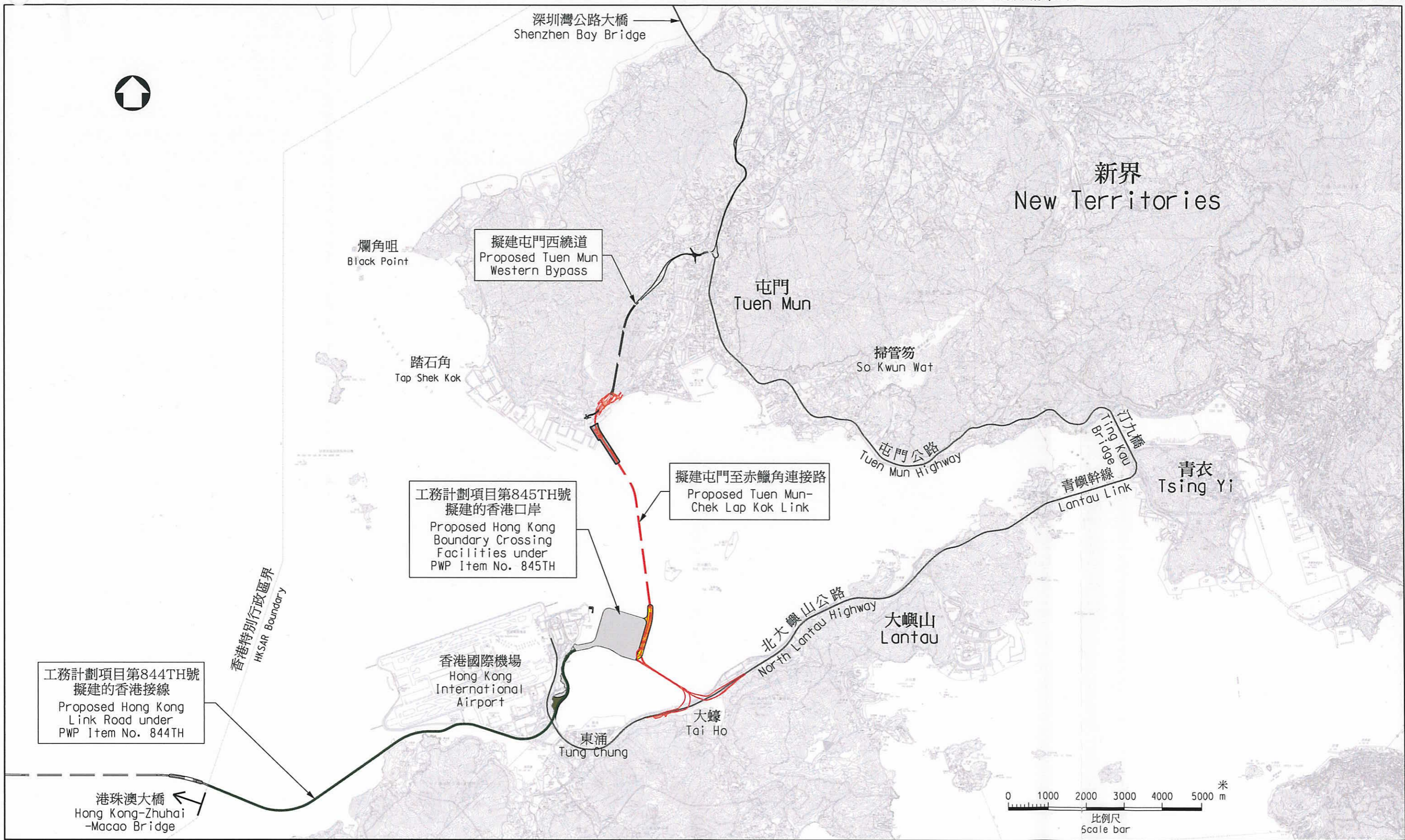
24. The Council passed a motion at its meeting on 7 February 2007 urging the Government to expedite implementing the construction of cross-boundary transport infrastructures between Hong Kong and the Mainland, including HZMB.

25. During the Fifth Legislative Council, a total of 12 questions relating to HZMB and its related local infrastructure projects were raised at the Council meetings of 20 November and 11 December 2013, 30 April, 29 October, 5 November, 12 November, 26 November, 3 December and 10 December 2014. The hyperlinks to the questions and the Administration's responses, together with other relevant papers, are in **Appendix II**.

Latest development

26. The Administration plans to seek support for its funding application for increase in the APE of the HKBCF project at the Panel meeting to be held on 23 December 2014.

Council Business Division 4
Legislative Council Secretariat
18 December 2014



**Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities**

List of relevant papers

Date of meeting	Panel/ Committee	Minutes/Paper	LC Paper No.
26.10.2011	Panel on Transport ("TP")	Administration's paper on latest progress of Hong Kong-Zhuhai-Macao Bridge infrastructure projects in Hong Kong	CB(1)126/11-12(01) http://www.legco.gov.hk/yr11-12/english/panels/tp/papers/tp1026cb1-126-1-e.pdf
		Updated background brief on Hong Kong-Zhuhai-Macao Bridge prepared by the Legislative Council Secretariat	CB(1)133/11-12 http://www.legco.gov.hk/yr11-12/english/panels/tp/papers/tp1026cb1-133-e.pdf
		Administration's follow-up paper	CB(1)249/11-12(01) http://www.legco.gov.hk/yr11-12/english/panels/tp/papers/tp1026cb1-249-1-e.pdf
		Minutes of meeting	CB(1)475/11-12 http://www.legco.gov.hk/yr11-12/english/panels/tp/minutes/tp20111026.pdf
8.11.2011	Public Works Subcommittee	Administration's paper on 845TH Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities – Reclamation and Superstructures	PWSC(2011-12)30 http://www.legco.gov.hk/yr11-12/english/fc/pwsc/papers/p11-30e.pdf

Date of meeting	Panel/ Committee	Minutes/Paper	LC Paper No.
		Minutes of meeting	PWSC16/11-12 http://www.legco.gov.hk/yr11-12/english/fc/pwsc/minutes/pwsc20111108.pdf
18.11.2011	Finance Committee ("FC")	Recommendations of the PWSC on Public Works Programme and Capital Subvention Project	FCR(2011-12)48 http://www.legco.gov.hk/yr11-12/english/fc/fc/papers/f11-48e.pdf
		Minutes of meeting	FC74/11-12 http://www.legco.gov.hk/yr11-12/english/fc/fc/minutes/fc20111118.pdf
15.11.2013	TP	Administration's paper on proposed retention of three supernumerary posts and extension of one permanent post in the Hong Kong-Zhuhai-Macao Bridge Hong Kong Project Management Office of Highways Department	CB(1)268/13-14(01) http://www.legco.gov.hk/yr13-14/english/panels/tp/papers/tp1115cb1-268-1-e.pdf
		Background brief on Hong Kong-Zhuhai-Macao Bridge prepared by the Legislative Council Secretariat	CB(1)268/13-14(02) http://www.legco.gov.hk/yr13-14/english/panels/tp/papers/tp1115cb1-268-2-e.pdf

Date of meeting	Panel/ Committee	Minutes/Paper	LC Paper No.
		Administration's supplementary information paper	CB(1)435/13-14(01) http://www.legco.gov.hk/yr13-14/english/panels/tp/papers/tp1115cb1-435-1-e.pdf
		Minutes of the meeting	CB(1)669/13-14 http://www.legco.gov.hk/yr13-14/english/panels/tp/minutes/tp20131115.pdf
20.11.2013	Council meeting	Hon Steven HO Chun-yin raised a question on local fisheries resources	http://www.info.gov.hk/gia/general/201311/20/P201311200317.htm
4.12.2013	Establishment Subcommittee	Administration's paper on Head 60 Highways Department Subhead 000 Operational expenses	EC(2013-14)9 http://www.legco.gov.hk/yr13-14/english/fc/esc/papers/e13-09e.pdf
		Minutes of the meeting	ESC24/13-14 http://www.legco.gov.hk/yr13-14/english/fc/esc/minutes/esc20131204.pdf
11.12.2013	Council meeting	Hon CHAN Han-pan raised a question on development of bridgehead economy on Lantau Island	http://www.info.gov.hk/gia/general/201312/11/P201312110311.htm
10.1.2014	FC	Administration's paper on recommendations of the Establishment Subcommittee	FCR(2013-14)47 http://www.legco.gov.hk/yr13-14/english/fc/fc/papers/f13-47e.pdf

Date of meeting	Panel/ Committee	Minutes/Paper	LC Paper No.
		Minutes of the meeting	FC59/13-14 http://www.legco.gov.hk/yr13-14/english/fc/fc/minutes/fc20140110.pdf
30.4.2014	Council meeting	Hon Jeffrey LAM Kin-fung raised a question on development of Lantau Island	http://www.info.gov.hk/gia/general/201404/30/P201404300436.htm
29.10.2014	Council meeting	Hon Dr Hon KWOK Ka-ki raised a question on major infrastructure projects	http://www.info.gov.hk/gia/general/201410/29/P201410290463.htm
5.11.2014	Council meeting	Hon WU Chi-wai raised a question on demand of public works projects for construction manpower	http://www.info.gov.hk/gia/general/201411/05/P201411050734.htm
12.11.2014	Council meeting	Hon TANG Ka-piu raised a question on Hong Kong-Zhuhai-Macao Bridge local projects	http://www.info.gov.hk/gia/general/201411/12/P201411120641.htm
26.11.2014	Council meeting	Hon Kenneth LEUNG raised a question on construction costs of the Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities Project	http://www.info.gov.hk/gia/general/201411/26/P201411260341.htm
3.12.2014	Council meeting	Hon James TIEN raised a question on cost overrun of Hong Kong-Zhuhai-Macao Bridge Hong Kong	http://www.info.gov.hk/gia/general/201412/03/P201412030457.htm

Date of meeting	Panel/ Committee	Minutes/Paper	LC Paper No.
		Boundary Crossing Facilities project	
3.12.2014	Council meeting	Dr Hon LAM Tai-fai raised a question on cost overruns and delay of major infrastructure projects	http://www.info.gov.hk/gia/general/201412/03/P201412030932.htm
10.12.2014	Council meeting	Hon Frederick FUNG raised a question on operational arrangements of Hong Kong-Zhuhai-Macao Bridge	http://www.info.gov.hk/gia/general/201412/10/P201412100430.htm
10.12.2014	Council meeting	Dr Hon KWOK Ka-ki raised a question on monitoring expenditure of public works projects	http://www.info.gov.hk/gia/general/201412/10/P201412100494.htm

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