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(English translation
of the letter issued on 17 December 2015 (PWSC63/15-16(01))

17 December 2015

Secretary General
Legislative Council Secretariat
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong
(Attn.: Ms Sharon Chung)

By Email and Fax
(Email: chung@legco.gov.hk)
(Fax No.: 2978 7569)

Dear Ms Chung,

**Public Works Subcommittee under
the Finance Committee of the Legislative Council
Meeting on 12 December 2015
845TH - Hong Kong-Zhuhai-Macao Bridge
Hong Kong Boundary Crossing Facilities -
Reclamation and Superstructures**

Supplementary Information

At the meeting of the Legislative Council Public Works Subcommittee under the Finance Committee held on 12 December 2015, some members requested the Government to provide supplementary information about the captioned project. Our reply is as follows.

**Impact on the Hong Kong Boundary Crossing Facilities (HKBCF) Project
if the Increase in Approved Project Estimate (APE) is Not Approved**

2. If we fail to obtain the approval for increase in APE in the near future, we would have to excise some facilities which are not absolutely essential for

commissioning from some on-going and soon-to-be awarded contracts. But we must point out that, excising these facilities will affect the effective clearance operation, the provision of transport services, and the maintenance and management (which are relevant to road safety) of the HKBCF. This will cause inconvenience to the public and does not comply with the high standard of transport infrastructures in Hong Kong. The excision will fall due from December 2015. Details are at **Annex 1** (i.e. Annex F of paper no. PWSC51/15-16(01)). Among the facilities to be excised, the first one is the landscape works (including greening works) at the southern portion of the HKBCF. The due date of which is December 2015. Taking into account the current situation, we will not be able to obtain the approval for the increase in APE before the due date. Hence, we will soon have to excise this part of works from the contract. In other words, there will be no landscape works and greening works in the southern portion of the HKBCF when the HKBCF is commissioned in end 2017. Not only the intended objective of making use of the greening plants in the HKBCF area to compensate part of the carbon emission will not be achieved, but also the visual appearance of the HKBCF will be affected.

3. **Annex 2** shows the details of the respective cost estimate of the facilities to be excised as requested by some members. The total cost of facilities to be excised is about \$1,340 million (in money-of-the-day (MOD) prices). Re-tendering for construction of these facilities will involve additional tendering procedures and waste money. As the construction of these facilities will have to be carried out after the commissioning of the HKBCF, it will cause negative impact on HKBCF's operation and increase the construction difficulties, resulting in additional cost. Therefore, excising these facilities from the existing contracts and re-tendering them will very likely increase the overall construction cost and such increase has not been included in this application for increase in APE. Preliminary estimate reveals that if these facilities to be excised are to be re-tendered for construction, the cost will increase by about \$600 million. Moreover, we will have to obtain the approval for the increase in APE before we can commence the re-tendering. The completion dates of these excised facilities will, therefore, be delayed from end 2017 or early 2018 as originally scheduled to one to two years after the approval of increase in APE.

Statistics of Industrial Accidents Causing Fatalities or Injuries

4. In the four years since the commencement of works on the HKBCF project from November 2011 to November 2015, there were 30 cases of accidents, in which three cases are fatal accidents as described below.

5. On 25 October 2012, an industrial accident concerning steel sheet piling works happened at the construction site of the HKBCF artificial island, causing 1 death and 14 injured. The associated works were immediately

suspended after the accident. Subsequently, the contractors established a safety improvement proposal on steel sheet piling works according to the risk assessment, with a view to ensuring safety in working sequence and equipment, including the design, structural components, installation, lifting and the hoisting system of working platforms. The contractor also provided the workers with the needed safety instructions and training. An audit system was also implemented to ensure the proper implementation of the aforementioned measures. The Labour Department (LD) was satisfied that the relevant measures could adequately eliminate the risks arising from steel sheet piling works, and it revoked on 17 January 2013 the suspension notices that were issued to the main contractor and his sub-contractors.

6. On 23 July 2014, a contractor's worker who was working at a vessel docked at the HKBCF artificial island works site lost his balance and was drowned, causing a fatal accident. After this accident, LD inspected the working environment near the seafront at the relevant construction site and issued suspension notices to the relevant contractors, suspending them of any works involving workers working near the seafront. Subsequently, the contractors established a safety improvement proposal on works near the seafront according to the risk assessment so as to ensure the safety in working sequence. The contractors also provided the workers with the needed safety instructions and trainings. LD was satisfied with the safety improvement proposal on working near the seafront, and it revoked on 17 October 2014 the suspension notices that were issued to the main contractor and his sub-contractors.

7. On 12 December 2014, at the construction site for the HKBCF artificial island, a contractor's excavator operator fell with the excavator into the sea, causing a fatal accident. The relevant works were immediately suspended after the accident. Subsequently, the contractors, at the direction of the Marine Department (MD), established and implemented a safety improvement proposal on cranes operation on vessels to ensure construction safety. The contractor also provided the workers with the needed safety instructions and training to the worker. An audit system was also implemented to ensure the proper implementation of the aforementioned measures.

8. According to the records of the Highways Department (HyD), in the four years since the commencement of works on the HKBCF project from November 2011 to November 2015, the breakdown of industrial injuries and fatalities by type is set out at the table below:

Type of Accident	No. of Cases	No. of Injuries	No. of Fatalities
Trapped in or between objects	4	4	0

Injured whilst lifting or carrying	1	1	0
Slip, trip or fall on same level	12	12	0
Fall of person from height	1	14	1
Striking against fixed or stationary object	3	3	0
Striking against or struck by moving object	3	3	0
Stepping on object	1	1	0
Drowning	2	0	2
Others	3	3	0
Total:	30	41	3

9. Occupational safety in construction sites is of prime importance to HyD. Apart from the statutory requirements, HyD stipulates in the works contracts the associated occupational safety requirements which are described in paragraphs 12 to 15 below. HyD will continue to closely monitor the construction safety at HKBCF construction site, and continue to review with the contractors the effectiveness of the relevant safety measures.

Working Hours of Construction Workers under the Employment Contracts

10. Section 6 of the Occupational Safety and Health Ordinance and Section 6A of the Factories and Industrial Undertakings Ordinance require the employer to ensure, so far as is reasonably practicable, the health and safety at work of all employees. As regards the rest break arrangements of workers, the Guide on Rest Breaks issued by LD stipulates the importance for the employers/contractors to work out rest break arrangements for their employees. The relevant guidelines recommend that for construction workers carrying out manual handling work, the employers/contractors should arrange short rest breaks for the workers in both the morning and afternoon sessions.

11. According to the submissions from the contractors, except constant night-shift workers, the working hours for the workers are from 8 a.m. to 6 p.m. as stated in the employment contracts. Workers of the HKBCF project are entitled to have about one hour lunch break and rest breaks in the morning and afternoon sessions. When the Very Hot Weather Warning is in force, the contractors will arrange additional short rest breaks in the morning and afternoon sessions to reduce the risk of heat stroke of the workers. In addition, if workers are required to handle vibrating machines, the contractors will arrange the workers to take appropriate rest after continuous working for a period of time. These provisions on rest facilities and arrangements of rest for workers are listed in the construction safety plans submitted by the contractors. HyD and the consulting engineers will check, during site inspections, the rest areas and drinking water facilities, and interview workers regarding the rest conditions.

Average and Highest Hours of Overtime Work by Workers

12. A group of labour liaison officers employed by the consulting engineers of the HyD will review the records of working hours of workers submitted by the contractors. According to the records, in the past three years (ie. 2012-13, 2013-14 and 2014-15 financial years), the average hours of overtime work by the workers of the HKBCF (including imported labours) was approximately 29 hours per month. The highest hours of overtime work by some workers of specific trades to suit specific work sequence was 6 hours a day. But this happened only once and lasted for one day only. During overtime work, the contractors will provide, according to the relevant regulations, the workers with adequate rest time and appropriate rest areas. In addition, HyD, the consulting engineers and the labour liaison officers will also frequently remind the contractors to strictly follow the Employment Ordinance and make reference to the Guide on Rest Breaks.

Measures to Reduce Industrial Accidents and Long Working Hours of Construction Workers

13. According to the requirements under the relevant legislation, the contractors have the responsibility to establish the standards and procedures of occupational safety and health, and to provide workers with adequate and appropriate information, instructions, training and supervision. HyD has attached great importance to occupational safety at construction sites and has specified in its public works contracts relevant requirements on the occupational safety, including the requirement of the contractors to establish construction safety plan, implement safety management system, carry out regular safety inspection and safety audit, etc. In accordance with the contract requirements, the contractors shall also appoint safety officer(s) to assist in the establishment of occupational safety policy, and implementation of relevant ordinances and safety and health requirements in the contracts to ensure the compliance of the site condition with the safety and health standards.

14. Foremen, safety officers / safety supervisors of the contractors shall carry out daily site inspection to ensure the effective implementation of safety measures at the front line. Before entering the construction site, the contractors shall ensure that all workers have been provided with sufficient safety training and appropriate personal protection equipment such as safety helmets, safety shoes, reflective vests, life jackets and safety harnesses, etc. Moreover, the contractors are responsible for setting up with their sub-contractors at least one safety committee for each contract so as to identify, recommend and continuously review measures to improve the safety and health of the workers. The consulting engineers of HyD have also arranged resident site staff specifically responsible for construction site safety to oversee the safety management system and various safety measures, and to supervise the contractors to strictly implement the relevant measures to ensure construction

safety. Furthermore, frequent site inspections are carried out by the consulting engineers and the safety personnel of the contractors. Contracts are required to promptly implement safety improvement measures when safety issue is observed.

15. In accordance with the Factories and Industrial Undertakings (Safety Management) Regulation, each contractor shall appoint a registered safety auditor to conduct safety audit on the construction site at least once in every six months. HyD has required the contractors of the HKBCF project (similar arrangements have been implemented under the Hong Kong Link Road and Tuen Mun-Chek Lap Kok Link projects) to employ safety auditors recognized by Occupational Safety and Health Council to conduct regular safety audit on their safety management system and safety measures. LD also supervises the relevant safety audits to ensure that they meet the purpose of enhancing the occupational safety and health awareness.

16. Moreover, HyD assesses quarterly the performance of the contractors on various aspects including construction site safety and compiles performance reports for submission to the Development Bureau (DevB). If contractors violate any requirement under the relevant legislations, it will be recorded in the respective safety performance reports. Furthermore, past accident rates and safety performance of the tenderers are taken into account in tender assessments of public works contracts. DevB will also make investigations into the contractors involved in serious industrial accidents and consider executing appropriate regulating measures such as suspending the contractors from tendering public works contracts.

17. According to the Construction Site Safety Handbook issued by DevB, resident site staff of the consulting engineers of HyD shall review the methods and risk assessments submitted by the contractors, and arrange appropriate personnel to supervise the construction works so as to ensure adequate supervision before and during construction. Resident site staff of HyD shall also set up a construction site safety and environmental management committee with every contractor under each contract to establish and implement construction site safety management policy and to monitor the safety performance of the contractors. Representatives of HyD, LD and MD will also send representatives to participate in the meetings and the pre-meeting site inspections.

18. Apart from the above measures, both regular and surprise site inspections are carried out by HyD to review the implementation of the safety management systems and safety measures. Recommendations are also offered to the contractors. These include reminding the contractors to comply with the Employment Ordinance, make reference to the Guide on Rest Breaks issued by LD, and to provide adequate shelters and resting areas for workers.

19. LD has stepped up inspection and enforcement in respect of mega works projects (including the HKBCF Project – reclamation and superstructures), and has established a dedicated team to monitor the occupational safety and health performance of the contractors undertaking mega works projects. Apart from conducting the usual surprise site inspections, LD also continues to launch special enforcement operations targeting high-risk processes (such as work-at-height, lifting operations, electrical work, marine construction works, etc.) of these works projects. LD will undertake immediate enforcement action without prior warning upon discovery of breaches of work safety regulations.

20. As regards work safety of sea-based construction works, LD and MD have been organising joint enforcement operations and have established a referral mechanism to follow up and forestall unsafe working conditions in a timely manner. Besides, pursuant to the relevant occupational safety and health legislation, LD urges employers/contractors to assess whether workers engaged in construction works adjacent to or over water are prone to fall with a risk of drowning, to provide secure fencing and rescue equipment at workplaces with such risks, and to ensure workers facing such risks wear lifejackets. LD organises, from time to time, seminars on work-at-height and work-over-water safety for the major infrastructure projects, including the HKBCF Project.

Yours sincerely,

(Jessica LEE)

for Secretary for Transport and Housing

C.C.

Secretary for Financial Services and the Treasury
(Attn: Miss Karen SHING)

(Fax: 2147 5240)

Director of Highways (Attn: Mr Albert LEE)

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Commissioner for Labour (Attn: Mr. WU Wai Hung)

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Impact on the HKBCF Project if approval for the increase in approved project estimate (APE) is not obtained

If we cannot obtain approval for the increase in APE in the near future, we will have to excise some facilities from some of the on-going and soon-to-be awarded works contracts which are necessary but not absolutely essential for operation at the time of commissioning. Details are listed in the table below:

Item	Due Date	Contract No.	Facilities to be Excised	Anticipated Completion Date of Facilities	Impact on the Effective Clearance Operation, Maintenance and Management of HKBCF, and the Public
1	December 2015	HY/2013/04	Landscape works at the southern portion of the HKBCF	Early 2018	Landscape works in the southern portion of the HKBCF will be missing, thus affecting the overall appearance of the HKBCF.
2	January 2016	HY/2013/03	Public Carpark for domestic vehicles	End 2017	The public will not be able to drive directly to the HKBCF and switch to cross-boundary shuttle buses to Zhuhai or Macao. HKBCF will not be able to provide comprehensive transport facilities at the time of commissioning and cause inconvenience to the public. Those who live in remote areas, or need to drive to the HKBCF due to emergency circumstances will be most affected.
3			Taxi Queuing Area		At present, taxi queuing areas are available at the Hong Kong International Airport and other major boundary crossing facilities (e.g. Lo Ma Chau Spur Line Control Point, Shenzhen Bay Port, etc.) to facilitate the orderly taxi queuing and pick-up of Hong Kong residents and visitors), thereby shortening the waiting time of passengers. If taxi queuing area is not available at the HKBCF, taxis will have to queue up at taxi stands to pick up passengers. As there is only limited space at the taxi stands, the taxi queue may occupy part of the carriageways leading to the taxi stands and cause congestions nearby, thereby affecting the traffic flow in the vicinity of the HKBCF.
4			Communication and security electronic systems, etc. of Outbound and Inbound Private Car Annexures		Same as item 7
5			Additional Private Car and Goods Vehicle Kiosks to cater for the increased traffic demand after commissioning		The HKBCF will not be able to cater for the anticipated traffic demand at the early stage of HKBCF commissioning. At peaks of passenger flow during public holidays or the annual peak season for freight, the missing of these kiosks may cause serious traffic congestion at the HKBCF.
6	February 2016	HY/2013/03	Communication and security electronic systems of E&M Maintenance Building and Highways Depot	Early 2018	Same as item 12
7	May 2016	HY/2014/05 (Not yet awarded)	Outbound and Inbound Private Car Annexures	Early 2018	There will be no separate clearance services for cross boundary passengers and drivers for private cars at the HKBCF. If any one of the parties has problems during clearance, e.g. Customs and Excise Department (C&ED) officers discover problematic items on the vehicles, all the passengers and drivers will have to be detained together for inquiry to clarify the ownership of the problematic items.
8			Detective Dog Base		We will have to make temporary arrangements for setting up a detective dog base as per the request from the C&ED.
9			Dangerous Goods Store		The C&ED has to deliver the detected dangerous goods to the dangerous goods store outside the HKBCF. This will affect the effectiveness of the normal clearance operation. In addition, increasing the number of deliveries of dangerous goods to the dangerous goods store outside the HKBCF will also pose higher risk to the public.
10	June 2016	HY/2013/03	Irrigation system for the Vehicle Clearance Plazas and Public Transport Interchanges	Early 2018	The implementation of landscape works will be affected if there is no irrigation system.
11	July 2016	HY/2014/05 (Not yet awarded)	4 Public Toilets in the Vehicle Clearance Plazas	End 2017	The drivers and passengers of goods vehicles and private cars will not be able to use the facilities during clearance and this will cause inconvenience.
12			E&M Maintenance Building and Highways Depot	Early 2018	This will affect the maintenance and management of the roads and facilities at the HKBCF and delay the required maintenance works, affecting the quality of the roads and facilities. In case of power failure, the maintenance party may not be able to respond rapidly as requested.
13			Landscape works of the Remaining Ancillary Buildings		Some of the landscape works at the HKBCF will be missing, thus affecting the overall appearance of the HKBCF.
14	August 2016	HY/2013/06	Automatic Vehicle Clearance Support System (AVCSS) of the additional kiosks and Outbound and Inbound Private Car Annexures	End 2017	Same as items 5 and 7
15	January 2017	HY/2013/03	Landscape works for the Vehicle Clearance Plazas and Public Transport Interchanges	Early 2018	Some of the landscape works at the HKBCF will be missing, thus affecting the overall appearance of the HKBCF.

The total estimated cost of facilities which might possibly be excised is about \$1,340 million. Re-tendering for construction of these facilities will involve additional tendering work and waste money. As the construction of these facilities will have to be carried out after the commissioning of the HKBCF, it will cause negative impact on HKBCF's operation and increase the construction difficulties, thereby leading to increase in construction cost. Therefore, excising these facilities from the existing contracts and re-tendering them will very likely increase the overall construction cost and such increase has not been included in this application for increase in APE. Preliminary estimate reveals that if these facilities to be excised are to be re-tendered for construction, the cost will increase by about \$600 million. Moreover, we will have to obtain the approval for the increase in APE before we can commence the re-tendering. The completion dates of these excised facilities will, therefore, be delayed from end 2017 or early 2018 as originally scheduled to one to two years after the approval of increase in APE.

Respective Cost Estimate of the Facilities to be Excised if the Increase in Approved Project Estimate (APE) is not Approved (in Money-of-the-Day (MOD) Prices)

Serial No.	Categories of Facilities to be Excised	Details	Latest Estimate# (\$ million)	Contract No. Involved	Item*
A	Landscape works (including greening works)	Landscape works at the southern portion of the HKBCF (including greening works)	314	HY/2013/04	1
		Irrigation system for the Vehicle Clearance Plazas and Public Transport Interchanges		HY/2013/03	10
		Landscape works of the Remaining Ancillary Buildings (including greening works)		HY/2014/05 (Not yet awarded)	13
		Landscape works for the Vehicle Clearance Plazas and Public Transport Interchanges (including greening works)		HY/2013/03	15
B	Transport Facilities for Passengers and Toilets	Public Carpark for domestic vehicles	161	HY/2013/03	2
		Taxi Queuing Area			3
		4 Public Toilets on the Vehicle Clearance Plazas		HY/2014/05 (Not yet awarded)	11
C	Outbound and Inbound Private Car Annexures	Communication and security electronic systems, etc. for Outbound and Inbound Private Car Annexures	213	HY/2013/03	4
		Outbound and Inbound Private Car Annexures		HY/2014/05 (Not yet awarded)	7
		Automatic Vehicle Clearance Support System (AVCSS) of Outbound and Inbound Private Car Annexures		HY/2013/06	14 (part)
D	Additional Private Car and Goods Vehicle Kiosks	Additional Private Car and Goods Vehicle Kiosks to cater for increased traffic demand after commissioning	415	HY/2013/03	5
		AVCSS of the additional kiosks		HY/2013/06	14 (part)
E	Facilities for maintenance and customs	Communication and security electronic systems of E&M Maintenance Building and Highways Depot which are relevant to road safety	236	HY/2013/03	6
		Detective Dog Base		HY/2014/05 (Not yet awarded)	8
		Dangerous Goods Store			9
		E&M Maintenance Building and Highways Depot			12
Total			1,339	-	-

The total cost of facilities to be excised is about \$1,340 million (in MOD prices). Re-tendering for construction of these facilities will involve additional tendering work and waste money. As the construction of these facilities will have to be carried out after the commissioning of the HKBCF, it will cause negative impact on HKBCF's operation and increase the construction difficulties, resulting in additional cost. Therefore, excising these facilities from the existing contracts and re-tendering them will very likely increase the overall construction cost and such increase has not been included in this application for increase in APE. Preliminary estimate reveals that if these facilities to be excised are to be re-tendered for construction, the cost will increase by about \$600 million. Moreover, we will have to obtain the approval for the increase in APE before we can commence the re-tendering. The completion dates of these excised facilities will, therefore, be delayed from end 2017 or early 2018 as originally scheduled to one to two years after the approval of increase in APE.

Notes:

- #: As the contract price of individual facility listed in the table and the estimate of one of the not-yet-awarded contracts are commercial sensitive information, we cannot provide the cost estimate of individual facility.
- *: The item no. indicated in **Annex F** of the supplementary information submitted by the Transport and Housing Bureau on 11 December 2015.