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4 June 2015

Clerk to the Panel on Development  
Legislative Council Complex  
1 Legislative Council Road,  
Central, Hong Kong  
(Attn : Mr Daniel Sin)

Dear Mr Sin,

**Finance Committee**  
**Follow-up to Meeting on 29 May 2015**  
**FCR(2015-16)11 and FCR(2015-16)12**

At the meeting of the Finance Committee held on 29 May 2015, a Member requested the Administration to provide detailed information on the current contracts under the Liantang/Heung Yuen Wai Boundary Control Point (LT/HYW BCP), including percentage of completion, expenditure, number of claims and actual progress of the works. Furthermore, another Member expressed concern about the traffic impact of the LT/HYW BCP to the road network in Hong Kong, and requested the information on the associated Traffic Impact Assessment. In response, we provide below the requested information.

**1. Status of Works Contracts of LT/HYW BCP**

Under the LT/HYW BCP, the works are implemented under seven works contracts, of which six are implemented under **19GB**, and the remaining one under **13GB**. The current status of the seven works contracts is shown in

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**Table 1.****Table 1 – Status of the works contracts of LT/HYW BCP**

<b>Contract</b>		<b>Description of Works</b>	<b>Status</b>
<b>19GB</b>	Contract 2	Connecting Road (Southern Section)	Works in progress
	Contract 3	Fanling Highway Interchange	Works in progress
	Contract 4	Traffic control and surveillance system	Tender to be invited in second half of 2015
	Contract 5	Site formation works of BCP	Works in progress
	Contract 6	Connecting Road (Northern Section)	Contract to be awarded upon FC's approval of increase in Approved Project Estimate (APE)
	Contract 7	Cross-boundary bridges	Tender to be invited in second half of 2015
<b>13GB</b>		BCP buildings and associated facilities	Contract to be awarded upon FC's approval of funding application

The percentage completion, expenditure, number of claims and actual progress of the works as at end May 2015 of the three on-going works contracts under 19GB are listed in Table 2. Compared against the planned progress, the actual progress of the three works contracts is satisfactory. The value of the submitted claims are well within the contingency sum of the respective contracts.

**Table 2 – Percentage of completion, expenditure, number of claims and actual progress of the works as at end May 2015**

<b>Contract</b>	<b>Expenditure (\$ million)</b>	<b>Actual % works completed</b>	<b>No. of valid monetary claims</b>	<b>Progress of works</b>
Contract 2	1,559	15%	0	The northern and southern tunnel portals are under construction; the ventilation adit near Lau Shui Heung is under excavation.
Contract 3	449	29%	2	The foundations and the piers of the viaduct are

				under construction; bridge segments are being installed.
Contract 5	269	60%	1	Site formation of northern BCP site was completed in February 2015; that of southern BCP site will be completed by end 2015.

## 2. Traffic Impact Assessment

At the investigation and preliminary design stage as well as the detailed design stage, we had assessed the traffic impact of the LT/HYW BCP on the road network in Hong Kong. We adopted a two-tier forecasting approach in estimating the traffic flow in 2031.

### Traffic Modeling methodology

Territory-wide traffic model (TTM) was adopted in the “first-tier” forecast to predict the traffic flow on the major roads in Hong Kong, which would be used in the more in-depth “second-tier” forecast. The TTM is compatible with the Third Comprehensive Transport Study model developed by the Transport Department. This model divided Hong Kong into 405 zones, and made reference to the Planning Department’s Territorial Population and Employment Data Matrices. This model also took into account the planning for the future major highway and rail infrastructure.

The local traffic model (LTM) was adopted in the “second-tier” forecast. This model was developed from the 2008 Base District Traffic Models (2008 BDTMs)<sup>1</sup> for studying in detail the traffic situation at the major roads/junctions within the core area of influence of the proposed infrastructure, assessing the traffic impact caused by the proposed infrastructure, and proposing the improvement measures if necessary. In order to provide more in-depth traffic forecast, the LTM contained more details than the TTM, such as details of local roads/junctions.

<sup>1</sup> 2008 BDTMs were developed by the Transport Department for the purpose of carrying out traffic impact assessments due to public works, and are also commonly used by consultants to conduct traffic impact assessment for private development.

### Major findings in TTM

According to the results of TTM, the peak vehicular flow generated from the LT/HYW BCP will be around 1 500 pcu<sup>2</sup>/hour in 2031. We note that the traffic impact on the North District due to the proposed LT/HYW BCP will be more significant, and the impact on the road network will diminish with increasing distance away from the LT/HYW BCP. The percentage of vehicular traffic generated from the LT/HYW BCP over the capacity of some major roads in 2031 is shown in Table 3.

Table 3 – Conditions of vehicular traffic from the LT/HYW BCP using some major roads in 2031

Major roads	<u>Vehicular traffic from LT/HYW BCP</u>
	Road capacity
Fanling Highway	8.4%
Shing Mun Tunnel	3.4%
Eagle's Nest Tunnel	4.9%
Lion Rock Tunnel	1.4%
Tate's Cairn Tunnel	1.4%

### Major Findings in LTM

Based on the above findings in the TTM, we carried out the traffic analysis in the "second-tier" model (i.e LTM) on the North District. We had conducted capacity analysis for the major roads/junctions in the North District, to identify any significant impact on the existing road network and devise appropriate road improvement measures to minimize the corresponding traffic impact.

With the new Connecting Road, most of the vehicular traffic from the LT/HYW BCP will not use the existing local road network in the North District. On the other hand, some existing traffic along Sha Tau Kok Road will be diverted to use the Fanling Highway via the Connecting Road, so that the traffic condition along Sha Tau Kok Road can be improved.

According to the results of the traffic impact assessment, the section of the Fanling Highway between the Connecting Road and Hong Lok Yuen may


<sup>2</sup> Passenger car unit (pcu) is a unit for measuring traffic flow in equivalent number of private cars. For example, a pcu value of 1.0 is assigned to private cars and taxis. Heavy vehicles such as goods vehicles or buses which usually travel at a lower speed are assigned higher pcu values.

not be able to cope with the additional cross-boundary traffic generated from the LT/HYW BCP. Therefore, the Government has already commenced the works for widening the section of the Fanling Highway between Tai Hang and Wo Hop Shek Interchange from a dual 3-lane to a dual 4-lane carriageway. Upon completion of the widening works, the Fanling Highway will be able to cope with the additional cross-boundary traffic generated from the LT/HYW BCP. The road performance of the major roads in North District during the morning peak in 2031 is shown in **Table 4**.

**Table 4 – Road performance of major roads in North District during morning peak in 2031**

Major roads	Direction	v/c ratio <sup>3</sup>
Fanling Highway (between Connecting Road and Jockey Club Road)	Northbound	0.73
	Southbound	0.79
Fanling Highway (between Connecting Road and Hong Lok Yuen)	Northbound	0.96
	Southbound	1.04
Sha Tau Kok Road (between Jockey Club Road and Lok Yip Road)	Northbound	0.46
	Southbound	0.27
So Kwun Po Road (between Jockey Club Road and Fanling Highway)	Northbound	0.71
	Southbound	0.65
Ping Che Road	Northbound	0.84
	Southbound	0.82

Yours sincerely,



( Francis S H CHAU )  
for Secretary for Development

c.c. SFST (Attn.: Ms Jasmine Choi)

<sup>3</sup> V/C ratio is normally used to reflect traffic situation during peak hours. 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 below 1 is considered acceptable. A v/c ratio above 1.0 indicates the onset of mild congestion and a v/c ratio between 1.0 and 1.2 would indicate a manageable degree of congestion. Above 1.2 indicates more serious congestion with traffic speeds progressively deteriorating with further increase in traffic and such v/c ratios are considered unacceptable.