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21 June 2017

Ms Shirley Chan
Clerk to Panel on Economic Development
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong

Dear Ms Chan,

**Subcommittee on Legislative Amendments for Imposing Conditions on
Vessels Navigating in the Vicinity of the Hong Kong-Zhuhai-Macao Bridge**

Thank you for your letter of 15 June 2017. At the meeting of the Subcommittee, Members requested supplementary information on the anti-collision measures and monitoring systems of HZMB, details of navigation signs and the publicity programmes for vessel operators who may sail through the area. We were also asked to provide information on whether Mainland vessels entering Hong Kong waters would be required to install Automatic Identification System. The relevant information is provided at **Annex**.

Should you have any enquiries, please feel free to contact me at 3509 8162. Thank you.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Louisa Yan', written over a light blue circular stamp.

(Ms Louisa Yan)
for Secretary for Transport and Housing

**Proposed Navigational Conditions in the Vicinity of the
Hong Kong-Zhuhai-Macao Bridge**

Supplementary Information

**(a) Anti-collision measures and monitoring systems of the Hong
Kong-Zhuhai-Macao Bridge (HZMB)**

The bridge structures of the two link roads of HZMB, namely the Hong Kong Link Road (“HKLR”) and the Tuen Mun-Chek Lap Kok Link (“TM-CLKL”), are designed and built in accordance with international standards set out by the International Association for Bridge and Structural Engineering. At the design stage, factors including navigation patterns and sizes of vessels that might sail through the HKLR and TM-CLKL have been taken into account. The bridge structures are designed to withstand collision impact load to minimise damage to the structure. In navigation channels with the busiest marine traffic (i.e. navigation channels under the tallest arches of the two link roads), a row of protection fenders and dolphin structures have been built to minimise the impact of accidental collision. In addition, Structural Monitoring System will be put in place in the aforementioned navigation channels with sensors to monitor the condition of the bridge structures. When collision is detected, the sensors will pick up possible bridge structure movements and send alert signal to the control centre. Highways Department will explore the feasibility of installing video-recording systems within the aforementioned navigation channels of HKLR and TM-CLKL.

(b) Navigation signs

There are four different height restrictions along the HKLR and three along the TM-CLKL. Navigation aids such as colour-coded signs to distinguish the different height restrictions will be put up on the bridge piers. The colour coding seeks to enable vessel operators to observe the respective height restrictions more easily. For illustration purpose, we have highlighted the size and whereabouts of the signage at **Appendix**. In finalising the use of colours for the signs, we will take into account Members’ suggestion regarding the visual impact of different colour schemes, as well as the presentation of different signage to enhance clarity for vessel operators.

As it is anticipated that marine traffic would be busiest along the two one-way navigation channels with height restriction of 41 metres (i.e. the south-bound navigation channel, or Special Area No. 1 and the north-bound navigation channel, or Special Area No. 2, as illustrated at **Appendix**), Radar Transponder Beacon facility will be installed at the centre of the bridge span so that vessels sailing through the two channels can send and receive radar signals from this facility. With the aid of radar, vessels can ensure that they are navigating along the correct channel even when visibility is low or during night time.

(c) Publicity programmes for vessel operators

Before the legislative proposal comes into force on 1 December 2017, Marine Department (“MD”) will issue Marine Department Notice specifying details of navigation arrangements around the navigation channels of HZMB, including the navigation restrictions to be imposed and the navigation aids to be used to facilitate vessels sailing through the region. MD will identify frequent users (both local and Mainland vessel operators) of the navigation channels of HZMB and arrange seminars and briefings for them to familiarise them with the arrangements. MD will also distribute leaflets to enhance vessel operators’ understanding of the different navigation aids and signage.

(d) Automatic Identification System (“AIS”) on Mainland vessels entering Hong Kong waters

Mainland vessels of 100 gross tonnage and above and engaged in river trade are required by the Maritime Safety Administration of the People’s Republic of China to install AIS. These vessels can be identified when they navigate in Hong Kong waters.

Designs and Dimensions of Navigation Signs of HKLR

