

# **立法會**

## ***Legislative Council***

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### **Panel on Transport Meeting on 21 July 2017**

### **Background brief on replacement of traffic control and surveillance system in Tsing Ma Control Area**

#### **Purpose**

This paper provides background information on the replacement of the traffic control and surveillance system ("TCSS") in Tsing Ma Control Area ("TMCA"). It also summarizes the major discussions by Legislative Council ("LegCo") Members on financial proposals on the replacement of TCSSs in TMCA and other tunnels in the past.

#### **Background**

##### Tsing Ma Control Area

2. TMCA, opened for public use in May 1997, covers a key section of the highway route to North-West Lantau, Ma Wan and the Hong Kong International Airport at Chek Lap Kok. It comprises a 21-kilometre expressway network including Tsing Kwai Highway, Cheung Tsing Tunnel, Cheung Tsing Highway, Northwest Tsing Yi Interchange, Ting Kau Bridge, Tsing Yi North Coastal Road, Lantau Link, Ma Wan Road and North Lantau Highway (up to Sunny Bay Interchange). The Government enacted the Tsing Ma Control Area Ordinance (Cap. 498) to provide for the control and regulation of vehicular and pedestrian traffic within TMCA and related matters. As with other Government tunnels and control areas, the Administration has selected through open tender an operator to undertake the management, operation and maintenance of the tunnel and control area.<sup>1</sup>

3. At present, the Lantau Link provides the only vehicular access to Lantau, Chek Lap Kok and Ma Wan. According to the Administration in May 2016, Lantau Link is used by 84 000 vehicles daily on average. For the

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<sup>1</sup> The current operator is the TIML MOM Limited.

convenience of motorists, one-way toll collection has been implemented. Under this arrangement, vehicles travelling on Lantau Link are charged twice the single journey toll at Lantau Link Main Toll Plaza or Ma Wan Toll Plaza.<sup>2</sup>

#### Traffic control and surveillance systems

4. Since early 1980's, all road tunnels and TMCA have been equipped with comprehensive traffic control and surveillance facilities including closed circuit television ("CCTV") cameras, automatic incident detectors, lane control signals ("LCS"), variable speed limit signs ("VSLS") and variable message signs, etc. for efficient and effective traffic and incident management. TCSSs have been expanded in recent years to include the Shenzhen Western Corridor, the Tsing Sha Control Area, Tuen Mun Road and Tolo Highway. New TCSSs are now being or will be implemented as part of the highway projects including the widening of Fanling Highway, Central-Wan Chai Bypass, Hong Kong-Zhuhai-Macao Bridge related projects, Tuen Mun-Chek Lap Kok Link, Liantang/Heung Yuen Wai Boundary Control Point and associated works and Tseung Kwan O-Lam Tin Tunnel.

#### **Major discussions by Members**

5. The major discussions by LegCo Members on funding proposals in relation to the replacement of TCSSs in TMCA and other tunnels in the past are summarized in the ensuing paragraphs.

#### Replacement of the lane control signals and variable speed limit signs of traffic control and surveillance system in Tsing Ma Control Area

6. In May 2012, members of the Panel on Transport ("the Panel") were informed of the Administration's proposal to replace LCS and VSLS of TCSS in TMCA at an estimated cost of \$56.750 million.

7. Members noted that LCS and VSLS were two key components of TCSS in TMCA. LCS provided real-time indication of lane status (e.g. whether the lane was in operation or closed) of the road and control traffic

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<sup>2</sup> In view that upon commissioning of the Hong Kong-Zhuhai-Macao Bridge ("HZMB"), vehicles travelling to Lantau via the Lantau Link can use HZMB to travel outside Hong Kong, and can re-enter Hong Kong through other boundary control points without passing through the Lantau Link, the Administration considers that the underlying logic for one-way toll collection at the Lantau Link no longer works. As such, the Transport Department plans to implement two-way toll collection for the use of the Lantau Link (including entering and leaving Ma Wan) on 20 August 2017.

for guiding motorists to use the suitable lanes. VSLS regulated the speed of vehicles by indicating the speed limit applicable to a road section, which would be varied according to changes in traffic conditions. Effective functioning of LCS and VSLS was critical to the safety and management of expressways, control areas and tunnels. Being installed in TMCA since its commissioning in 1997, LCS and VSLS which had been in service for more than 14 years were then approaching the end of their economic serviceable life. The old fibre optic type LCS and VSLS were replaced with new Light Emitting Diode ("LED") type LCS and VSLS, which have wider viewing angle and are much brighter. LED displays are also more environmentally friendly as they consume much less electricity, have a longer service life and are more reliable. The relevant funding proposal was considered and approved at the meeting of the Finance Committee on 13 July 2012. According to the work programme of the Administration, the replacement project was to start in July 2012 and be completed in 38 months.

#### Replacement of other traffic control and surveillance systems

8. In May 2008, members of the Panel noted the Administration's proposal for replacement of TCSS in the Shing Mun Tunnels ("SMT"), which had been in use for 17 years, at an estimated cost of \$140 million. The relevant funding proposal was approved by FC in June 2008. According to the work programme, the project, which started in the fourth quarter of 2008, would take about 54 months to complete.

9. In April 2016, the proposals for replacing TCSSs in the Kai Tak Tunnel ("KTT") and the Eastern Harbour Crossing ("EHC") at estimated costs of \$112.04 million and \$145.65 million respectively were supported by members of the Panel. Subsequently, FC approved the funding in June 2016. The target completion date for replacement of TCSS in KTT would be November 2020, and that in EHC would be February 2021.

10. When considering the above proposals, members generally noted and agreed that as the existing TCSSs which were in service for a long time was ageing and hence the risk of malfunctioning would increase, they should be replaced to ensure the reliability, effectiveness and efficiency of the traffic control and surveillance of the tunnels. In addition, the components of the old systems had usually become obsolete, making the maintenance of the systems difficult and not economical.

11. During discussion on the funding proposal on replacement of TCSS in SMT at the FC meeting, members asked about details of the function of the automatic incident detection system in automatically identifying the location of

traffic incidents, and noted how the colour CCTV system would help improve traffic monitoring efficiency. In response to a member's enquiry, the Administration advised members that the CCTV footage would only be provided to government departments on justifiable grounds.

12. Noting the long implementation time required for replacing TCSSs in KTT and EHC, members of the Panel urged the Administration to expedite the works progress so as to minimize the impact of the installation work on normal tunnel operations. In reply, the Administration said that the proposed programmes of the replacement projects involved a series of works inside the tunnel tubes and roads in the tunnel area, such as site investigation, temporary traffic arrangement, system installation work, etc. Further, these works could only be carried out during non-peak hours. As such, the proposed implementation schedules were already very tight.

### **Latest development**

13. The Administration plans to seek members' support for the funding application for taking forward the replacement of TCSS in TMCA at the meeting of the Panel to be held on 21 July 2017.

### **Relevant papers**

14. A list of relevant papers is in the **Appendix**.

Council Business Division 4  
Legislative Council Secretariat  
18 July 2017

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in Tsing Ma Control Area**

**List of relevant papers**

<b>Date of meeting</b>	<b>Meeting</b>	<b>Minutes/Paper</b>	<b>LC Paper No.</b>
--	Panel on Transport	Administration's paper on replacement of the traffic control and surveillance system in the Shing Mun Tunnels	CB(1)1556/07-08(03)  <a href="http://www.legco.gov.hk/yr07-08/english/panels/tp/papers/tpcb1-1556-3-e.pdf">http://www.legco.gov.hk/yr07-08/english/panels/tp/papers/tpcb1-1556-3-e.pdf</a>
13.6.2008	Finance Committee	Administration's paper on replacement of the traffic control and surveillance system in the Shing Mun Tunnels	FCR(2008-09)30  <a href="http://www.legco.gov.hk/yr07-08/english/fc/fc/papers/f08-30e.pdf">http://www.legco.gov.hk/yr07-08/english/fc/fc/papers/f08-30e.pdf</a>
		Minutes of meeting	FC31/08-09  <a href="http://www.legco.gov.hk/yr07-08/english/fc/fc/minutes/fc080613.pdf">http://www.legco.gov.hk/yr07-08/english/fc/fc/minutes/fc080613.pdf</a>
--	Panel on Transport	Administration's paper on replacement of field traffic equipment (lane control signals and variable speed limit signs) of traffic control and surveillance system in the Tsing Ma Control Area	CB(1)1935/11-12(01)  <a href="http://www.legco.gov.hk/yr11-12/english/panels/tp/papers/tpcb1-1935-1-e.pdf">http://www.legco.gov.hk/yr11-12/english/panels/tp/papers/tpcb1-1935-1-e.pdf</a>
13.7.2012	Finance Committee	Administration's paper on replacement of the lane control signals and variable speed limit signs of the traffic control and surveillance system in the Tsing Ma Control Area	FCR(2012-13)45  <a href="http://www.legco.gov.hk/yr11-12/english/fc/fc/papers/f12-45e.pdf">http://www.legco.gov.hk/yr11-12/english/fc/fc/papers/f12-45e.pdf</a>

Date of meeting	Meeting	Minutes/Paper	LC Paper No.
		Minutes of meeting	FC193/11-12  <a href="http://www.legco.gov.hk/yr11-12/english/fc/fc/minutes/fc20120713.pdf">http://www.legco.gov.hk/yr11-12/english/fc/fc/minutes/fc20120713.pdf</a>
15.4.2016	Panel on Transport	Administration's paper on replacement of fire alarm system and manual toll collection system in the Aberdeen Tunnel, and traffic and control surveillance systems in the Eastern Harbour Crossing and the Kai Tak Tunnel	CB(4)831/15-16(07)  <a href="http://www.legco.gov.hk/yr15-16/english/panels/tp/papers/tp20160415cb4-831-7-e.pdf">http://www.legco.gov.hk/yr15-16/english/panels/tp/papers/tp20160415cb4-831-7-e.pdf</a>
		Minutes of meeting	CB(4)1321/15-16  <a href="http://www.legco.gov.hk/yr15-16/english/panels/tp/minutes/tp20160415.pdf">http://www.legco.gov.hk/yr15-16/english/panels/tp/minutes/tp20160415.pdf</a>
3.6.2016	Finance Committee	Administration's paper on replacement of fire alarm system in the Aberdeen Tunnel; replacement of manual toll collection system in the Aberdeen Tunnel; replacement of traffic control and surveillance system in the Eastern Harbour Crossing; replacement of traffic control and surveillance system in the Kai Tak Tunnel; and replacement of Tunnel Lighting System in the Kai Tak Tunnel	FCR(2016-17)32  <a href="http://www.legco.gov.hk/yr15-16/english/fc/fc/papers/f16-32e.pdf">http://www.legco.gov.hk/yr15-16/english/fc/fc/papers/f16-32e.pdf</a>

Date of meeting	Meeting	Minutes/Paper	LC Paper No.
		Minutes of meeting	FC314/15-16  <a href="http://www.legco.gov.hk/yr15-16/english/fc/fc/minutes/fc20160603.pdf">http://www.legco.gov.hk/yr15-16/english/fc/fc/minutes/fc20160603.pdf</a>

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