For discussion
on 15 June 2012

FCR(2012-13)45

ITEM FOR FINANCE COMMITTEE

CAPITAL WORKS RESERVE FUND
HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT
Transport Department
New Subhead "Replacement of the Lane Control Signals and Variable Speed Limit Signs of the Traffic Control and Surveillance System in the Tsing Ma Control Area"

Members are invited to approve a new commitment of $56,750,000 to replace the lane control signals and variable speed limit signs of the traffic control and surveillance system in the Tsing Ma Control Area.

PROBLEM

We need to replace the lane control signals (LCS) and variable speed limit signs (VSLS) of the traffic control and surveillance system (TCSS) in the Tsing Ma Control Area (TMCA)[Note] to ensure the safe operation of TMCA.

PROPOSAL

2. The Commissioner for Transport, with the support of the Secretary for Transport and Housing, proposes to replace the LCS and VSLS of TCSS in TMCA at an estimated cost of $56,750,000.

/**JUSTIFICATION** …..

[Note] TMCA comprises North Lantau Highway (the section between Lantau Toll Plaza and Yan O), Tsing Ma Bridge, Kap Shui Mun Bridge, Ting Kau Bridge, Cheung Tsing Highway and Tsing Kwai Highway.

JUSTIFICATION

3. The LCS and VSLS are two key components of TCSS in TMCA. LCS provides real-time indication of lane status (e.g. whether the lane is in operation or closed) of the road and control traffic for guiding motorists to use the suitable lanes. VSLS regulates the speed of vehicles by indicating the speed limit applicable to a road section, which will be varied according to changes in traffic conditions. Effective functioning of LCS and VSLS is critical to the safety and management of expressways, control areas and tunnels. The LCS and VSLS installed in TMCA have been in use since the control area was commissioned in 1997. They are approaching the end of their economic serviceable life. The existing LCS and VSLS are fibre optic type illuminating signs based on a technology of more than 14 years old. Owing to the ageing problem, the displays of these signals/signs have become dimmer.

4. According to the Electrical and Mechanical Services Trading Fund (EMSTF), the existing fibre optic type LCS and VSLS are being phased out. It has become increasingly difficult to maintain them in good working conditions due to the lack of certain spare parts in the market. They should be replaced before the end of their economic serviceable life to ensure the safe operation of TMCA and facilitate future maintenance of the equipment.

5. We plan to procure new light emitting diode (LED) type LCS and VSLS, which have a significantly wider viewing angle and are much brighter. The new signs will provide a clearer display of signals/information to motorists. Moreover, LED displays consume much less electricity (hence more environmentally friendly), have a longer serviceable life and are more reliable.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

6. We estimate the capital cost of the project to be $56,750,000, with breakdown as follows –

		$ '000
(a)	Replacement of	
	(i) 448 lane control signals	40,858
	(ii) 60 variable speed limit signs	4,182
(b)	EMSTF project management charges	7,206
(c)	Contingency [10% of item (a) above]	4,504
	Total	**56,750**

/7. …..

7. As regards paragraph 6(a)(i) and (ii) above, the estimated costs of $40,858,000 and $4,182,000 are for the replacement of 448 LCS and 60 VSLS respectively, including dismantling and disposal of the existing signs and the supply, installation, testing and commissioning of the new LED type signs with associated local controller, interface equipment, cables and accessories.

8. As regards paragraph 6(b) above, the estimated cost of $7,206,000 is for meeting the charges of EMSTF for managing the replacement project which includes carrying out system engineering study and detailed site survey; preparing the specifications, design and project programme; overseeing the tendering process; undertaking site inspection; supervising the installation works; arranging for testing and commissioning of the new signs; and monitoring the operation of the new signs and defect rectification work.

9. The estimated cash flow requirement is as follows –

Year	**$'000**
2012 –13	3,000
2013 –14	23,000
2014 –15	20,000
2015 –16	10,750
Total	**56,750**

Recurrent Expenditure

10. The proposed replacement will not incur any additional recurrent expenditure.

Impact on Fees and Charges

11. Under the current policy, the depreciation cost of the proposal will be taken into account in determining the toll charges and other charges of TMCA as appropriate. The estimated impact on the toll for using the Lantau Link in TMCA is immaterial.

/IMPLEMENTATION …..

IMPLEMENTATION PLAN

12. We plan to start work in July 2012 and complete the replacement in 38 months according to the following schedule –

	Activity	Target completion date
(a)	System engineering study and detailed site survey	November 2012
(b)	Detailed design and preparation of tender document	April 2013
(c)	Tendering, evaluation and award of contract	September 2013
(d)	Equipment manufacture, installation, testing and commissioning	August 2015

PUBLIC CONSULTATION

13. We issued an information paper on the proposal to the Legislative Council Panel on Transport on 21 May 2012. Members did not raise any comment on the proposal.

BACKGROUND

14. A TCSS is installed in control areas and tunnels for real time monitoring and management of traffic for ensuring safe and efficient operation of the control areas and tunnels. A TCSS comprises two major types of facilities: the traffic control facilities such as LCS and VSLS to guide the motorists through the control area and tunnel safely, and the traffic surveillance facilities to monitor the traffic condition and facilitate timely response to incidents. The performance of the facilities in all the control areas and Government tunnels is closely monitored and assessed by EMSTF and the Transport Department on a regular basis. Timely replacement of the facilities has to be made to ensure the safe and efficient operation of the control areas and tunnels.

Transport and Housing Bureau
June 2012