

ITEM FOR FINANCE COMMITTEE

CAPITAL WORKS RESERVE FUND HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT

Transport Department

New Subhead “Replacement of Tunnel Lighting System and Monitoring and Management Supervisory Systems in the Shing Mun Tunnels”

Members are invited to approve a new commitment of \$131,970,000 to replace the Tunnel Lighting System and Monitoring and Management Supervisory Systems in the Shing Mun Tunnels.

PROBLEM

We need to replace the Tunnel Lighting System (TLS) and Monitoring and Management Supervisory Systems (MMSS) in the Shing Mun Tunnels (SMT) to ensure the safe, reliable and efficient operation of SMT.

PROPOSAL

2. The Commissioner for Transport, with the support of the Secretary for Transport and Housing, proposes to replace the TLS and MMSS in SMT at an estimated cost of \$131,970,000.

JUSTIFICATION

3. The existing TLS and MMSS were put to use when SMT was commissioned in 1990. The TLS comprises mainly lighting fittings, power supply equipment and cables. The MMSS comprises the Environmental Monitoring and Control System, Plant Monitoring System and Management Supervisory System, which perform the functions of monitoring the lighting level and reporting failure of individual lighting units, etc. The TLS and MMSS together form an integral system for ensuring the safe operation of SMT.

4. According to the Electrical and Mechanical Services Trading Fund (EMSTF), the TLS and MMSS of SMT are approaching the end of their economic serviceable life^{Note}. Timely replacement of the existing systems is essential for ensuring safe, reliable and efficient operation of the tunnel. It has become increasingly difficult to maintain the systems in good working condition due to the lack of certain spare parts in the market. Any failure in the TLS or MMSS will lead to suspension of the operation of SMT and will result in traffic congestion on the alternative routes linking Tsuen Wan and Sha Tin, which will have a knock-on effect on other major road networks in the New Territories.

5. To enhance the stability, reliability and efficiency of the TLS and MMSS, and the safety of tunnel users, new equipment of higher quality (which includes a longer life expectancy and less glare) and energy efficiency will be procured. They will meet the relevant international standards and comply with the latest design requirements stipulated by the Transport Department (TD), Highways Department and Electrical and Mechanical Services Department.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

6. We estimate the capital cost of the project to be \$131,970,000, with the breakdown as follows –

	\$ '000
(a) Replacement of	94,700
(i) lighting fittings inside tunnel tubes	69,400
(ii) MMSS equipment	7,000
(iii) power supply equipment	5,000
(iv) tunnel lighting console in control room	2,300
(v) cables	11,000
(b) Removal and reinstatement of tunnel wall panels	10,000
(c) EMSTF project management charges	16,800
(d) Contingency [10% of items (a) and (b) above]	10,470
	Total
	131,970

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^{Note} The normal economic serviceable life of the TLS is around 25 years, while that of the MMSS is around 20 years.

7. Regarding paragraphs 6(a) and (b) above, the total estimated cost of \$104,700,000 will cover the supply, installation, testing and commissioning of all lighting fittings, control equipment and console for the new TLS and MMSS; the replacement of the electrical switchboard; the associated electrical works such as cabling and wiring as well as the removal and reinstatement of tunnel wall panels.

8. Regarding paragraph 6(c) above, the estimated cost of \$16,800,000 is for meeting the charges of EMSTF for managing the replacement project which includes carrying out the feasibility study; preparing the specifications, design and project programme; overseeing the tendering process; undertaking site inspection; supervising the installation; testing and commissioning the new systems; and monitoring the operation of the systems and defect rectification work.

9. The estimated cash flow requirement is as follows –

Year	\$ '000
2012-13	200
2013-14	800
2014-15	45,000
2015-16	55,000
2016-17	30,970
Total	131,970

Recurrent Expenditure

10. The above replacement proposal will not incur any additional recurrent expenditure.

Impact on Fees and Charges

11. Under the existing policy, the operating cost of Government tolled tunnels should be recovered through the toll charges. Since the depreciation cost of the proposal is part of the operating costs of SMT, it will be taken into account in setting the toll charges in future.

/IMPLEMENTATION

IMPLEMENTATION PLAN

12. We plan to start the replacement project in February 2013 according to the following schedule and complete it in about 44 months –

Activity	Target completion date
(a) System engineering study and preliminary site survey	May 2013
(b) Detailed design and preparation of tender document	September 2013
(c) Tendering and evaluation	February 2014
(d) Equipment manufacture and installation	July 2016
(e) Equipment testing and commissioning	September 2016

13. To minimise disruption to tunnel operation, works affecting tunnel traffic will only be carried out at night when individual tubes are closed for normal maintenance.

PUBLIC CONSULTATION

14. We consulted the Legislative Council Panel on Transport on 14 December 2012. Members supported the proposal.

BACKGROUND

15. SMT is a Government tolled tunnel. Its operation, management and maintenance are undertaken by a contractor. TD is responsible for the timely replacement of major systems in the tunnel in consultation with EMSTF.
