

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 in the Aberdeen Tunnel”

Members are invited to approve a new commitment of \$83.0 million to replace the existing tunnel lighting system in the Aberdeen Tunnel.

PROBLEM

We need to plan ahead for the replacement of the existing tunnel lighting system in the Aberdeen Tunnel (ABT) before it reaches the end of its economic serviceable life to maintain safe, efficient and reliable tunnel operation.

PROPOSAL

2. The Commissioner for Transport, with the support of the Secretary for Transport and Housing, proposes to replace the existing tunnel lighting system in ABT at an estimated cost of \$83.0 million.

JUSTIFICATION

3. The lighting system is critical to the safe operation of a road tunnel. The existing tunnel lighting system was put to use when ABT was commissioned in 1982. The Electrical and Mechanical Services Trading Fund (EMSTF) advises that we should start to replace the lighting system now. Otherwise, as the system draws closer to the end of its serviceable life, it may become difficult to maintain it in good working condition due to the lack of spare parts in the market.

4. Timely replacement of the existing lighting system is essential to ensuring safe, reliable and efficient operation of the tunnel. Any failure in the lighting system will lead to a suspension of the operation of ABT and will result in serious traffic congestion on the alternative routes linking Aberdeen to other parts of Hong Kong Island. It will very likely have a knock-on effect on other major road networks on the Island.

5. To enhance the stability, reliability and efficiency of the tunnel lighting system and for the enhanced safety of tunnel users, a new system using higher quality and energy efficient light tubes will be procured. The new system will meet relevant international standards and comply with the latest design requirements for lighting systems stipulated by the Transport Department (TD) and Highways Department.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

6. We estimate that the capital cost of the project will be \$83.0 million, with the breakdown as follows –

		\$ million
(a)	Replacement of	58.4
	(i) lighting fittings inside tunnel tubes	44.6
	(ii) power supply and control equipment inside tunnel	3.2
	(iii) tunnel lighting console in control room	1.9
	(iv) cables	8.7
(b)	Removal and reinstatement of tunnel wall panels	7.5
(c)	EMSTF project management charges	10.5
(d)	Contingency (10% of (a) and (b))	6.6
	Total	83.0

7. Regarding paragraphs 6(a) and (b) above, the total estimated cost of \$65.9 million will cover the supply, installation, testing and commissioning of all lighting fittings, control equipment and tunnel lighting console for the new tunnel lighting system, 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 \$10.5 million is for meeting the charges of EMSTF for 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 of the new system; and monitoring the operation of the system and defect rectification works.

9. We intend to phase the expenditure as follows –

Year	\$ million
2011–12	0.5
2012–13	11.0
2013–14	50.0
2014–15	21.5
Total	83.0

Recurrent Expenditure

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

Impact on Fees and Charges

11. As a general policy, the operating cost of Government tolled tunnels will be recovered through the toll charges. Since the depreciation cost of the proposal is part of the operating costs of ABT, it will be taken into account in setting the toll charges in future. However, we expect the impact on the ABT's tolls to be immaterial.

IMPLEMENTATION PLAN

12. We plan to start the replacement project in December 2011 and complete it in about 40 months. The first 13 months are for preparatory work including system engineering study and preliminary site survey, detailed design and tendering. The remaining 27 months are for equipment manufacture, system installation, testing and commissioning. A work programme is set out at the Enclosure.

Encl.

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 issued an information paper on the proposal to the Legislative Council Panel on Transport on 1 November 2011. Members did not raise any comment on the proposal.

BACKGROUND

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

Transport and Housing Bureau
November 2011

**Work Programme for
Replacement of Tunnel Lighting System
in the Aberdeen Tunnel**

	Work Item	Duration (months)	2011	2012		2013		2014		2015	
			7 – 12	1-6	7-12	1-6	7-12	1-6	7-12	1-6	7-12
1	System engineering study and preliminary site survey	4		■							
2	Detailed design and preparation of tender document	4		■							
3	Tendering and evaluation	5			■						
4	Equipment manufacture, installation, testing and commissioning	27				■					
Total		40									
