

ITEM FOR FINANCE COMMITTEE

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

Transport Department

New Subhead “Replacement of Tunnel Ventilation Supply Fan System in the Lion Rock Tunnel”

Members are invited to approve a new commitment of \$30 million to replace the tunnel ventilation supply fan system in the Lion Rock Tunnel.

PROBLEM

The existing tunnel ventilation supply fan system in the Lion Rock Tunnel (LRT) is approaching the end of its economic serviceable life after over 30 years of service.

PROPOSAL

2. The Commissioner of Transport, with the support of the Secretary for Transport and Housing, proposes to replace the existing tunnel ventilation supply fan system in the LRT at an estimated cost of \$30 million.

JUSTIFICATION

3. The existing tunnel ventilation supply fan system in the LRT was put to use when the tunnel was opened in 1967 (Southbound tube) and 1978 (Northbound tube). According to the Electrical and Mechanical Services Department (EMSD), it has become increasingly difficult to maintain the system in good condition. In addition, as these supply fans are mostly of an old design, most of their spare parts are not readily available in the market.

4. The LRT is strategically located and is the busiest tunnel connecting north Kowloon with Shatin in the New Territories. Any failure of the tunnel ventilation supply fan system will directly affect the air quality, visibility and smoke clearing efficiency of the tunnel, which will very likely result in serious traffic congestion on the road networks on both sides of the tunnel. It is necessary to replace the aforementioned tunnel ventilation supply fan system to ensure a stable and reliable air supply for safe and efficient tunnel operation.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

5. We estimate the capital cost of the proposed replacement project to be \$30 million, with the breakdown as follows –

		\$ million
(a)	Replacement of	24.80
	(i) 16 ventilation supply fans, associated ductwork and acoustic treatment equipment	20.40
	(ii) fan control system	1.60
	(iii) associated electrical installation	2.80
(b)	Electrical and Mechanical Services Trading Fund (EMSTF) project management charges	3.96
(c)	Contingency (5% of item (a))	1.24
	Total	<u>30.00</u>

6. Regarding paragraph 5(a) above, the estimated cost of \$24.80 million will cover the supply, installation, testing and commissioning of the whole tunnel ventilation supply fan system and the associated equipment.

7. Regarding paragraph 5(b) above, the estimated cost of \$3.96 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 system; as well as monitoring the operation of the system and defect rectification work during the defect liability period.

8. We intend to phase the expenditure as follows –

Year	\$ million
2009 –10	1.00
2010 –11	10.00
2011 –12	14.00
2012 –13	5.00
Total	30.00

Recurrent Expenditure

9. Since this is a replacement project, there will not be any additional recurrent expenditure.

Impact on fees and charges

10. Under the current policy, the toll charges of government toll tunnels are set to recover the operating cost as well as the return on the capital employed of government toll tunnels as a whole. Accordingly, the depreciation cost of the proposal will be taken into account in setting the toll charges of the LRT in future. Nevertheless, the estimated impact is immaterial as the estimated depreciation cost of the system will only be \$1.5 million per annum which represents 0.3% of the total expenditure of government toll tunnels as a whole.

IMPLEMENTATION PLAN

11. We plan to start the replacement project in the fourth quarter of 2009 for completion in around the third quarter of 2012. The first 15 months are for preparation work including detailed investigation, system design and tendering. The remaining 20 months are for equipment production, delivery, installation, testing and commissioning. A work programme is set out at the Enclosure.

Encl.

12. To minimise disruption to the tunnel operation, some of the works will be carried out in the closed tube at night when the tunnel is under one-tube-two-way operation for normal maintenance.

/PUBLIC

PUBLIC CONSULTATION

13. We issued an information paper on the present proposal to the Legislative Council Panel on Transport on 20 April 2009. Members had no comment on the proposal.

BACKGROUND

14. The operation and management of the LRT are undertaken by a management contractor. The Transport Department is responsible for the timely replacement of major systems in the tunnel in consultation with EMSD. About 31 million vehicles used LRT in 2008. The gross revenue for 2008-09 was in the region of \$248 million.

Transport and Housing Bureau
May 2009

**Work Programme for
Replacement of Tunnel Ventilation Supply Fan System
in the Lion Rock Tunnel**

	Work Items	Duration (months)	2009		2010		2011		2012	
			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	6			■					
3	Tendering	5				■				
4	Equipment manufacture, installation, testing and commissioning	20					■	■	■	■
