

For information

Legislative Council Panel on Transport
Replacement of Tunnel Ventilation System
in the Cross Harbour Tunnel

PURPOSE

This paper informs Members of our proposal to replace the tunnel ventilation system in the Cross Harbour Tunnel (CHT).

BACKGROUND

2. The ventilation system is the core component for tunnel ventilation and smoke control during fire. We need to plan ahead for the replacement of the existing ventilation system and its associated control system in the CHT before they reach the end of their economic serviceable life.

PROPOSAL

3. We propose to replace the existing tunnel ventilation system in the CHT at an estimated cost of \$69.30 million.

JUSTIFICATION

4. The existing tunnel ventilation system was put to use when the CHT was opened in 1972. The Electrical and Mechanical Services Trading Fund (EMSTF) is responsible for monitoring the maintenance of the system. According to EMSTF, there is a need to start the replacement of the system now; otherwise it may be difficult to maintain the system in good condition due to the lack of spare parts in the market.

5. The CHT is strategically and centrally located and is the busiest road harbour crossing in Hong Kong. The timely replacement of the existing ventilation system is important for ensuring stable and reliable air ventilation/smoke control for safe, efficient and reliable tunnel operation. If the tunnel ventilation system breaks down, it will directly affect the air quality, visibility and fire safety of the tunnel. Any disruption in tunnel operation thus caused will almost certainly result in serious traffic congestion on the major road networks on both sides of the tunnel.

IMPLEMENTATION PROGRAMME

6. We plan to commence the replacement project in the fourth quarter of 2010 and complete it in about 44 months. A work programme is at the Annex. The first 14 months are for preparation work including detailed investigation, system design and tendering. The remaining 30 months are for equipment production, delivery, installation, testing and commissioning.

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

FINANCIAL IMPLICATIONS

8. We estimate the capital cost of the project to be \$69.30 million with breakdown as follows -

		\$ million
(a)	Replacement of	55.00
	(i) twenty (20) ventilation fans and associated ductwork	30.00
	(ii) acoustic treatment	12.00
	(iii) associated electrical installation	5.00
	(iv) pneumatic control system	5.00
	(v) fan control system	3.00
(b)	EMSTF project management charges	8.80
(c)	Contingency (10% of item (a))	5.50
	Total	69.30

9. Regarding paragraph 8(a) above, the estimated cost of \$55.00 million will cover the supply, installation, testing and commissioning of the whole ventilation system with all associated equipment.

10. Regarding paragraph 8(b) above, the estimated cost of \$8.80 million is for meeting the charges of the 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; and monitoring the operation of the system and defect rectification work.

11. We intend to phase the expenditure as follows -

Year	\$ million
2010-2011	0.50
2011-2012	0.80
2012-2013	30.00
2013-2014	33.00
2014-2015	5.00
Total	<u>69.30</u>

12. Since this is a replacement proposal, there will not be any additional recurrent expenditure.

WAY FORWARD

13. We will seek funding approval from the Finance Committee on 2 July 2010 for this replacement project.

ADVICE SOUGHT

14. Members are invited to note our proposal to replace the ventilation system in the CHT.

Transport and Housing Bureau
May 2010

Annex

**Work Programme for
Replacement of Ventilation System
in the Cross Harbour Tunnel**

	Work Items	Duration (months)	2010		2011		2012		2013		2014		2015
			1-6	7-12	1-6	7-12	1-6	7-12	1-6	7-12	1-6	7-12	1-6
1	System engineering study and preliminary site survey	4		■									
2	Detailed design and preparation of tender document	5			■								
3	Tendering	5				■							
4	Equipment manufacture, installation, testing and commissioning	30					■	■	■	■	■	■	■