

**For information**

**Legislative Council Panel on Transport**

**Replacement of Specialised Vehicles for the Tsing Ma Control Area,  
Lion Rock Tunnel, Aberdeen Tunnel and Kai Tak Tunnel**

**PURPOSE**

This paper informs Members of our proposal to replace 17 specialised vehicles for the Tsing Ma Control Area (TMCA), Lion Rock Tunnel (LRT), Aberdeen Tunnel (ABT) and Kai Tak Tunnel (KTT).

**BACKGROUND**

2. The specialised vehicles are required for incident management and various operational uses in strategic road links and tunnels. In respect of the TMCA, we began in mid-2007 a programme to replace specialised vehicles that have been in use for over ten years. The replacement of five specialised vehicles, including three special tractors, one double-end bus and one heavy recovery vehicle, commenced last year at an estimated cost of \$18.29 million with approval from the Finance Committee of this Council. The replacement of a further 17 specialised vehicles at the TMCA is proposed in the current exercise. All these vehicles have either reached or are approaching the end of their economic serviceable life. Moreover, as these are mostly Euro I vehicles, their early replacement is conducive to improving the environment.

**PROPOSAL**

3. We propose to replace the following 17 specialised vehicles at an estimated cost of **\$88.9 million -**

|      |  |
|------|--|
| TMCA | 4 Heavy recovery vehicles<br>5 Medium recovery vehicles<br>1 Double-end Bus<br>1 Special tractor<br>1 Trailer-mounted bowser<br>1 Tunnel washer vehicle<br>1 Bridge inspection vehicle |
| LRT  | 1 Jet washer   |
| ABT  | 1 Heavy recovery vehicle   |
| KTT  | 1 Heavy recovery vehicle   |

## JUSTIFICATION

4. At the annual vehicle inspection in 2007 by the Electrical and Mechanical Services Department (EMSD), the 17 specialised vehicles mentioned above purchased before 1999 were found to have reached or to be approaching the end of their serviceable life. Their replacement is called for to ensure efficient and effective functioning of the TMCA and the tunnels concerned. The functions of the 17 vehicles are as follows -

(a) Heavy and medium recovery vehicles

A heavy recovery vehicle is used for recovery operations for heavy and medium goods vehicles, double-deck buses and container vehicles. A medium recovery vehicle is used for recovery operations of medium and light goods vehicles. The four heavy recovery vehicles and five medium recovery vehicles in the TMCA were purchased in 1997, while the heavy recovery vehicles in the ABT and the KTT were purchased in 1999.

(b) Double-end bus

In TMCA, double-end buses are placed at the two entrances of the lower deck of Lantau Link on a stand-by mode. When there is an emergency incident inside the lower deck, the double-end buses would be used for evacuating road transport or railway passengers to a safe place. The double-end buses are required because the lower deck of the Lantau Link is a single-lane carriageway where vehicle u-turning and overtaking are not practical. The double-end bus now proposed for replacement was purchased in 1997.

(c) Special tractor

A special tractor is fitted with a hydraulic turntable enabling it to turn 180 degrees at a fixed spot. It is used for vehicle recovery inside the lower deck of the Lantau Link, which is a single-lane carriageway where vehicle u-turning and overtaking are not practical. It is also used for towing the trailer-mounted bowser for fire fighting operations on the Lantau Link and Ting Kau Bridge where fire mains are not available. The special tractor now proposed for replacement was purchased in 1997.

(d) Trailer-mounted bowser

A trailer-mounted bowser is a water tank with a fire hose mounted on a trailer used for fire fighting operations on the Lantau Link and Ting Kau Bridge where fire mains are not available. The trailer-mounted bowser now proposed for replacement was purchased in 1997.

(e) Tunnel washer vehicle

A tunnel washer vehicle is used for tunnel wall cleansing to maintain a clean environment and to ensure a good level of illumination inside a tunnel. The tunnel washer vehicle in TMCA now proposed for replacement was purchased in 1997.

(f) Bridge inspection vehicle

A bridge inspection vehicle is specifically designed to facilitate the inspection and maintenance of the two long span cable-supported bridges in the TMCA, namely Tsing Ma Bridge (TMB) and Kap Shui Mun Bridge (KSMB). Its boom configuration is able to overcome physical constraints such as suspenders and main cables of TMB and stay cables of KSMB in reaching out the sidings and underside of the above bridges. The bridge inspection vehicle now proposed for replacement was purchased in 1997.

(g) Jet washer

A jet washer is used for cleansing the road surface of the LRT. The jet washer now proposed for replacement was purchased in 1996.

5. While the management, operation and maintenance of the TMCA and the concerned tunnels have been contracted out, the Government is responsible for providing the necessary vehicles and equipment for the operators to ensure efficient and effective incident management, as well as a smooth traffic flow in the TMCA and the concerned tunnels. The Government, as the owner of the vehicles, would also ensure smooth and flexible changeover from one operator to another upon expiry or termination of a contract.

6. Except the double-end bus for which no Euro V standard model is available on the market and the trailer-mounted bowser which has no engine, all the other special vehicles to be procured would be of EuroV standard.

## **IMPLEMENTATION PROGRAMME**

7. We plan to commence the proposed replacement of the 17 vehicles in the second quarter of 2008. The project will take about 26 months to complete as the vehicles have to be tailor-made according to our specifications. The detailed replacement programme is at Annex.

## FINANCIAL IMPLICATIONS

8. We estimate the cost of the proposed replacement of specialised vehicles to be \$88.9 million, with breakdown as follows-

|  | Qty | Unit Cost<br>(\$ million) | Sub-total<br>(\$ million) | Total<br>(\$ million) |
|--|-----|---------------------------|---------------------------|-----------------------|
| (a) Replacement of   |     |                           |                           | 76.8                  |
| (i) Heavy recovery vehicle   | 6   | 4.8                       | 28.8                      |                       |
| (ii) Medium recovery vehicle   | 5   | 3.6                       | 18.0                      |                       |
| (iii) Double-end bus   | 1   | 6.0                       | 6.0                       |                       |
| (iv) Special tractor   | 1   | 2.4                       | 2.4                       |                       |
| (v) Trailer-mounted bowser   | 1   | 2.4                       | 2.4                       |                       |
| (vi) Tunnel washer   | 1   | 4.8                       | 4.8                       |                       |
| (vii) Bridge inspection vehicle  | 1   | 12.0                      | 12.0                      |                       |
| (viii) Jet washer 1  | 1   | 2.4                       | 2.4                       |                       |
| (b) Electrical and Mechanical Services Trading Fund (EMSTF) project management charges |     |                           |                           | 4.4                   |
| (c) Contingency (10% of (a))   |     |                           |                           | 7.7                   |
|  |     |                           | <b>Grand Total</b>        | <b>88.9</b>           |

9. Regarding paragraph 8(a) above, the estimated cost of \$76.8 million will cover the supply, assembly, testing and commissioning, as well as operation and maintenance training for the heavy recovery vehicles, medium recovery vehicles, double end bus, special tractor, trailer-mounted bowser, tunnel washer, bridge inspection vehicle and jet washer.

10. Regarding paragraph 8(b) above, the estimated cost of \$4.4 million is for meeting the charges to EMSTF for 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 defect rectification work.

11. We intend to phase the expenditure as follows –

| <b>Year</b>  | <b>\$ million</b> |
|--------------|-------------------|
| 2008-2009    | 4.4               |
| 2009-2010    | 33.8              |
| 2010-2011    | 50.7              |
| <b>Total</b> | <b>88.9</b>       |

12. As this is a replacement proposal, no additional recurrent cost will be incurred.

13. It is expected that the proposal will have no impact on the toll charges of the TMCA, LRT, and ABT.

### **THE WAY FORWARD**

14. We will seek funding approval from the Finance Committee on 13 June 2008 for the proposed replacement of the 17 specialised vehicles.

### **ADVICE SOUGHT**

15. Members are invited to note our proposal to replace the 17 specialised vehicles for use in the TMCA, LRT, ABT and KTT.

**Transport and Housing Bureau**  
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