

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 706 – HIGHWAYS

#### Transport – Footbridges and pedestrian tunnels

#### 143TB – Improvement to pedestrian subway system at Kwai Fuk Road roundabout

Members are invited to recommend to Finance Committee the upgrading of **143TB** to Category A at an estimated cost of \$57.7 million in money-of-the-day prices for the improvement of a pedestrian subway system at Kwai Fuk Road roundabout, Kwai Chung.

### PROBLEM

The existing pedestrian subway system and at-grade crossings at the Kwai Fuk Road roundabout (the Roundabout) are inadequate to cope with the pedestrian flow.

### PROPOSAL

2. The Director of Highways, with the support of the Secretary for the Environment, Transport and Works, proposes to upgrade **143TB** to Category A at an estimated cost of \$57.7 million in money-of-the-day (MOD) prices for the improvement of the pedestrian subway system at the Roundabout.

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**PROJECT SCOPE AND NATURE**

3. The scope of **143TB** comprises –
- (a) construction of a 50 metre (m) long covered passageway barrel;
  - (b) construction of the northern leg, which is a subway barrel of 100 m long and 6.5 m wide with two stairway/lift exits at Kwai Fong Mass Transit Railway (MTR) Station and Kwai Tsing Theatre, and a stairway exit at the northern section of Kwai Fuk Road;
  - (c) construction of the eastern and southern legs of the subway, which are subway barrels of 40 m long, 4 m wide and 50 m long, 5 m wide respectively, with two stairway/lift exits;
  - (d) modification of the 30 m long and 4 m wide eastern portion of the existing western leg of the subway; and renovation of the 35 m long and 4 m wide western portion;
  - (e) demolition of the existing northern leg of the Subway;
  - (f) construction of an about 50 m long single one-lane road connecting the Roundabout to Hing Ning Road;
  - (g) realignment of approximately 110 m of Kwai Yan Road; and
  - (h) associated works including road and drainage, landscaping, water main diversion, provision of covers to footpath and the reprovision of an existing pump house.

— A layout plan and cross sections of the proposed works are at the **Enclosure**.

4. We have substantially completed the detailed design and tender drawings for the project using in-house resources. We plan to commence the construction works in March 2007 for completion in June 2009.

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## JUSTIFICATION

5. Kwai Chung is a district composed of mainly industrial and residential developments in its outskirts and has a mix of commercial, residential and education developments in its centre. A public transport interchange<sup>1</sup> (the Interchange) is located at the centre of Kwai Chung. The Roundabout is situated at the immediate southwest of the Interchange and serves as a major connection between the centre and the outer areas of Kwai Chung.

### Improvement of pedestrian subway system

6. The existing subway is the only grade-separated pedestrian crossing facility at the Roundabout with two legs connecting the northern section of Kwai Fuk Road to Container Port Road. Pedestrians from all other directions of the Roundabout have to gain access through the existing at-grade crossings, which span across two traffic lanes, to the Interchange.

7. With the opening of the Kwai Tsing Theatre in 1999, the usage of the subway and at-grade pedestrian crossings has gone up significantly. According to a survey conducted by the Transport Department in March 2006, both the existing subway and at-grade crossing facilities are heavily patronised. The two-way hourly pedestrian flows during peak hours are as follows –

Direction to/from the Roundabout	Pedestrian Flow per Hour
North	4 500
West	3 000
South	1 100
East	600

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<sup>1</sup> The public transport interchange comprises the bus /public light bus/taxi terminus underneath New Kwai Fong Garden and Kwai Fong MTR Station as well as the public light bus terminus alongside Hing Ning Road.

8. Currently, the Roundabout is being used by heavy long vehicles frequently, making up 23% of its traffic. The presence of heavy long vehicles has caused sightline obstruction to pedestrians. The swinging movement of vehicle bodies when negotiating the curve at the exit of the Roundabout and the relative high speed of these vehicles have caused great difficulty for pedestrians to cross the two traffic lanes at the existing at-grade crossings at Kwai Yi Road and Kwai Fuk Road. Since 1 January 2001, five accidents have taken place at that location causing five injuries.

9. To enhance pedestrian safety, we need to provide a grade-separated pedestrian crossing system in the form of a subway at the Roundabout. In this connection, we will construct a new northern leg with an extension to connect to the Interchange and then demolish the existing northern leg of the subway. We will also construct two extra legs to replace the existing at-grade crossings in the vicinity of the Roundabout and receive pedestrians from the east and south directions (i.e. the eastern and southern legs). We will modify the eastern portion of the existing western leg and refurbish the remaining western portion of the subway to match the prevailing standard for aesthetic purpose.

10. In connection with the subway improvement, we will install four lifts to facilitate access by peoples with disabilities. We also need to reprovide the pump house for the discharge of surface runoff to prevent flooding in the subway. We will install adequate lighting in the subway barrels and close off all the at-grade pedestrian crossings in the vicinity of the Roundabout upon the completion of the improvement works. We will landscape the locality with sculptures and a multitude of greenery to brighten up the environment.

### **Construction of a new road and local realignment of Kwai Yan Road**

11. At present, the vehicular traffic heading to the Interchange from the Roundabout has to make a detour of about 600 m via Kwai Yi Road, Kwai Foo Road and Kwai Yan Road or Hing Ning Road. Traffic queues are observed at the two signalised crossings at Kwai Yi Road and Kwai Yan Road and at the Kwai Yi Road approach to Kwai Foo Road. In addition, the on-street loading and unloading activities of public transport in front of Kwai Fong MTR Station, which tail back from the Interchange to Kwai Yi Road, have impeded the through traffic. Considerable delays have been caused to vehicular traffic along this 600 m long route.

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12. To improve traffic circulation along the route, we propose to construct a new road to directly connect the Roundabout with Hing Ning Road. We need to realign 110 m of Kwai Yan Road in order to provide adequate space for the construction of the new road.

13. We will implement appropriate temporary traffic management schemes, measures and construction sequence to mitigate the traffic impact to the existing road network during construction stages.

### FINANCIAL IMPLICATIONS

14. We estimate the cost of this project to be \$57.7 million in MOD prices (see paragraph 15 below), made up as follows –

	<b>\$ million</b>
(a) Subway	40.5
(i) civil works	33.2
(ii) electrical and mechanical (E&M) works	6.1
(iii) pump house reprovisioning	1.2
(b) Road and drainage, landscape and watermain diversion works	9.5

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(c) Electrical and Mechanical Services Trading Fund (EMSTF) charges <sup>2</sup>	1.1	
(d) Contingencies	5.2	
	56.3	(in September 2006 prices)
(e) Provision for price adjustment	1.4	
	57.7	(in MOD prices)

15. Subject to approval, we will phase the expenditure as follows –

<b>Year</b>	<b>\$ million (Sep 2006)</b>	<b>Price adjustment factor</b>	<b>\$ million (MOD)</b>
2007 – 2008	22.5	1.01250	22.8
2008 – 2009	25.4	1.02769	26.1
2009 – 2010	5.6	1.04310	5.8
2010 – 2011	2.8	1.05875	3.0
	56.3		57.7

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<sup>2</sup> Since the establishment on 1 August 1996 under the Trading Fund Ordinance, the EMSTF charges government departments for design and technical consultancy services for E&M installations provided by the Electrical and Mechanical Services Department. The services rendered for this project include carrying out the design on all E&M installations and providing technical advice to the Government on all E&M works and their impacts on the project from maintenance and general operation points of view.

16. We have derived the MOD estimate on the basis of the Government's latest forecast of trend rate of change in the prices of public sector building and construction output for the period 2007 to 2011. We will tender the proposed works under a lump sum contract with remeasurement items. We will allow for price adjustment in the contract as the construction period will exceed 21 months.

17. We estimate the annual recurrent expenditure of the project to be \$930,000.

## **PUBLIC CONSULTATION**

18. We consulted the Traffic and Transport Committee (T&TC) of the Kwai Tsing District Council on 26 April 2002. Members supported the project. We consulted the T&TC again by circulation of an information paper on 17 October 2005. Members supported the early implementation of the project.

19. We gazetted the proposed works under the Roads (Works, Use and Compensation) Ordinance (the Ordinance) on 24 February 2006 and received one objection. The objector opined that there was little demand for the proposed eastern and southern legs of the subway and suggested extending the subway from the Roundabout by about 300 m to the sitting-out area underneath the flyover of Tsuen Wan Road so that pedestrians could cross the two junctions of Kwai Fung Crescent and Container Port Road safely. We explained to the objector that the existing crossings at the junctions concerned were adequate and safe for pedestrian use from traffic point of view and there was no traffic need for the subway extension proposed by him. We also explained to the objector that the proposed eastern and southern legs would be integral parts of the subway. They could enhance pedestrian safety by replacing the existing at-grade crossings in the vicinity of the Roundabout. The objector was also concerned about the pedestrian flow during the renovation of the western leg of the subway. We assured the objector that we would carry out the proposed renovation works, involving the refurbishment of walls and floor tiles, in stages during off-peak hours to minimise the inconvenience to the public. Notwithstanding our explanations above, the objector did not withdraw his objection.

20. Having considered the unresolved objection, the Chief Executive-in-Council authorised the project under the Ordinance on 31 October 2006 and the notice of authorisation was gazetted on 17 November 2006.

21. We circulated an information paper on the project to the Legislative Council Panel on Transport on 24 November 2006. Members did not raise any objection to the project.

## **ENVIRONMENTAL IMPLICATIONS**

22. The project is not a designated project under the Environmental Impact Assessment Ordinance and will not cause long-term environmental impact. We will implement suitable mitigation measures to control short-term environmental impacts during the construction stage. These measures will include watering of the site, provision of wheel-washing facilities, covering of materials on trucks, use of silenced construction plant, and the provision of mobile noise barriers.

23. We have considered measures in the planning and design stages to reduce the generation of construction and demolition (C&D) materials where possible. We will renovate but not demolish the western portion of the existing western leg of the Subway. We will require the contractor to reuse suitable excavated materials and demolition materials as filling materials on site as far as possible, in order to minimise their disposal to public fill reception facilities<sup>3</sup>. We will encourage the contractor to maximise the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimise the generation of construction waste.

24. We will also require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to minimise, reduce, reuse and recycle C&D materials. We will require the contractor to ensure that the day-to-day operations on site comply with the approved WMP. We will control the disposal of public fill and C&D materials to designated public fill reception facilities and landfills through a trip-ticket system. We will require the contractor to separate public fill from C&D materials for disposal at appropriate facilities. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

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<sup>3</sup> Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of public fill in public fill reception facilities requires a license issued by the Director of Civil Engineering and Development.



25. We estimate that the project will generate about 24 900 tonnes of C&D materials. Of these, we will use about 15 100 tonnes (61%) on site, deliver about 8 600 tonnes (34%) to public fill reception facilities and dispose of about 1 200 tonnes (5%) at landfills. The total cost for accommodating these materials at public fill reception facilities and landfill sites is estimated to be \$382,200 for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne<sup>4</sup> at landfills).

26. The proposed works may involve the removal of 65 trees including one to be felled and 64 to be transplanted. All trees to be removed are not important trees<sup>5</sup>. We will incorporate planting proposals as part of the project, including estimated quantities of 99 trees, 43 000 shrubs and 55 square metres of grassed area.

## LAND ACQUISITION

27. The proposed works do not require any land acquisition.

## BACKGROUND INFORMATION

28. We upgraded **143TB** to Category B in October 2004.

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<sup>4</sup> This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m<sup>3</sup>), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

<sup>5</sup> “Important trees” refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

- (a) trees of 100 years old or above;
- (b) trees of cultural, historical or memorable significance e.g. Fung Shui trees, trees as landmark of monastery or heritage monument, and trees in memory of important persons or event;
- (c) trees of precious or rare species;
- (d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0 metre (measured at 1.3 metre above ground level), or with height/canopy spread equal or exceeding 25 metres.

29. We engaged consultants to carry out a construction traffic impact assessment study in June 2006. We charged \$152,000 for the study and \$520,000 for the site investigation works and the detailed design of the project under **Subhead 6100TX** "Highway works, studies and investigations for items in Category D of the Public Works Programme". The consultants completed the site investigation works and the study in June 2002 and November 2006 respectively.

30. We estimate that the proposed works will create about 45 jobs (six for professional/technical staff and 39 labourers) providing a total employment of 1 050 man-months.

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Environment, Transport and Works Bureau  
December 2006



