

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 711 - HOUSING

Transport – Roads

645TH – Sai Sha Road widening between Kam Ying Road and future Trunk Road T7 junction

Members are invited to recommend to Finance Committee the upgrading of **645TH** to Category A at an estimated cost of \$110.5 million in money-of-the-day prices for widening the section of Sai Sha Road between its junction with the future Trunk Road T7 and Kam Ying Road.

PROBLEM

The section of Sai Sha Road between its junction with the future Trunk Road T7 and Kam Ying Road cannot cope with the projected traffic demand arising from residential developments in Ma On Shan.

PROPOSAL

2. The Director of Highways, with the support of the Secretary for Housing and the Secretary for Transport, proposes to upgrade **645TH** to Category A at an estimated cost of \$110.5 million in money-of-the-day (MOD) prices to widen the section of Sai Sha Road between its junction with the future Trunk Road T7 and Kam Ying Road and to construct two associated footbridges and two subways.

PROJECT SCOPE AND NATURE

3. The scope of works for **645TH** comprises -
- (a) the widening of 650 metres (m) of Sai Sha Road between its junction with the future Trunk Road T7 and Kam Ying Road from a single two-lane to a dual two-lane carriageway;
 - (b) the construction of a roundabout at the junction of Sai Sha Road and Sha On Street;
 - (c) the construction of a 100 m access road from Sai Sha Road to Whitehead with associated footpaths;
 - (d) the construction of two covered footbridges and two pedestrian/cyclist subways;
 - (e) the modification of the existing junction of Sai Sha Road and Kam Ying Road, including the addition of a ramp and a staircase to an existing pedestrian subway barrel across Sai Sha Road;
 - (f) the erection of some 890 m of noise barriers, including about 350 m of vertical barriers ranging from three to five metres high and about 540 m of cantilever barriers about 6 m high along Sai Sha Road; and
 - (g) the associated electrical and mechanical, geotechnical, landscaping, lighting and drainage works.

A layout plan of the project is at the Enclosure.

JUSTIFICATION

4. The existing section of Sai Sha Road between its junction with the future Trunk Road T7 and Kam Ying Road is a single two-lane carriageway. Following the recent completion of residential developments¹ along Sai Sha Road,

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¹ The residential developments include Monte Vista, Symphony Bay and the New Territories Exempted House developments in Sai O and Nai Chung areas.

traffic flow has increased along this section of Sai Sha Road which can be overloaded during peak hours. With more major private developments² in Sai Sha, Lok Wo Sha and Whitehead coming on stream in the next few years, traffic growth will continue and aggravate the congestion problem. Furthermore, the anticipated completion of Trunk Road T7 and Ma On Shan Rail in 2004 will attract more traffic to this section of Sai Sha Road and the traffic condition is likely to be under greater pressure. According to the traffic forecast, the peak hour volume to capacity (V/C) ratios³ for this section of Sai Sha Road, with or without the proposed widening, are as follows -

	2001	2004		2011	
	Without widening	Without widening	With widening	Without widening	With widening
Westbound carriageway	1.15	1.31	0.48	1.43	0.52
Eastbound carriageway	1.22	1.31	0.48	1.52	0.56

5. The above traffic figures indicate that this section of Sai Sha Road is already overloaded. In the absence of the proposed widening, this section of Sai Sha Road would be operating at high V/C ratios of about 1.31 to 1.52 within ten years. With the proposed widening, we will be able to bring down the V/C ratios to about 0.48 to 0.56. Together with the proposed widening, we will undertake other necessary improvement works including constructing footbridges and subways to segregate pedestrians from road traffic and constructing access road to serve Wu Kwai Sha New Village at northern Kam Ying Road.

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² The major developments include comprehensive recreational and residential development of about 6 000 flats in Shap Sze Heung in the Sai Sha area, residential development of about 1 400 flats in Lok Wo Sha, residential development of about 3 000 flats above the Ma On Shan Rail Wu Kai Sha Station and various residential/recreational land uses proposed by the Planning Department in Whitehead.

³ Volume/capacity (V/C) ratio is an indicator which reflects the performance of a road. A V/C ratio equal to or less than 1.0 means that a road has sufficient capacity to cope with the volume of vehicular traffic under consideration and the resultant traffic will flow smoothly. A V/C ratio above 1.0 indicates the onset of congestion; above 1.2 indicates more serious congestion with traffic speeds progressively deteriorating with further increase in traffic.

FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the project to be \$110.5 million in MOD prices (see paragraph 7 below), made up as follows -

	\$ million	
(a) Roadworks	23.9	
(b) Drainage	17.7	
(c) Two footbridges	29.5	
(d) Two subways	14.1	
(e) Noise barriers	15.3	
(f) Contingencies	9.7	
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Sub-total	110.2	(in September 2001 prices)
(g) Provision for price adjustment	0.3	
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Total:	110.5	(in MOD prices)
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7. Subject to approval, we will phase the expenditure as follows -

Year	\$ million (Sept 2001)	Price adjustment factor	\$ million (MOD)
2002 – 2003	37.4	0.99700	37.3
2003 – 2004	59.8	1.00398	60.0
2004 – 2005	8.8	1.01101	8.9
2005 – 2006	4.2	1.01808	4.3
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	110.2		110.5
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8. We have derived the MOD estimates on the basis of the Government's latest forecast of trend labour and construction prices for the period between 2002 and 2006. We will tender the proposed works under a standard remeasurement contract to cater for any variation in the foundation and road works due to actual site conditions. The contract will provide for price adjustments because the contract period will exceed 21 months.

9. The annual recurrent expenditure arising from this project is about \$1 million.

PUBLIC CONSULTATION

10. In November 1998, we consulted the Traffic and Transport Committee of the then Sha Tin Provisional District Board on the proposed works. We also advised the Committee on the tree felling and compensatory planting proposals for the road project. We had conducted a tree survey and identified no rare or special species. Members of the Committee raised no in-principle objection to the project.

11. We gazetted the road scheme under the Roads (Works, Use & Compensation) Ordinance on 20 October 2000. We received one objection from the village representative of Wu Kwai Sha New Village. The objector claimed that the road scheme would encroach onto some of the existing "Fung Shui" woodland adjacent to Lok Wo Sha, which was located at the "Fung Shui" meridian protecting the well-being of the village.

12. To minimize encroachment onto the "Fung Shui" woodland, we proposed to shift the alignment of the access road leading to Whitehead away from the woodland by about 16 m and to replace the original slopeworks by retaining walls. We further consulted the objector and the villagers on the proposed road realignment and it was found acceptable. The objector withdrew his objection unconditionally. The Chief Executive-in-Council authorized the road scheme with modification on 27 November 2001.

ENVIRONMENTAL IMPLICATIONS

13. The project is a designated project under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance. We carried out an EIA

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report for the project. The report concluded that the project could be controlled to within the criteria under the EIA Ordinance and the Technical Memorandum on the EIA process and recommended mitigation measures including the construction of noise barriers. The Advisory Council on the Environment endorsed the EIA report without conditions on 27 September 1999. The Director of Environmental Protection subsequently approved the EIA report under the EIA Ordinance on 19 October 1999.

14. Subsequent to the approval of the EIA report, we also completed Environmental Reviews in August 2001 on related changes⁴. The Reviews concluded that the findings of the EIA report are still valid.

15. We have taken due consideration of the need to minimize the generation of construction and demolition (C&D) materials when planning and designing the level and layout of the roadworks. We will require the contractor to reuse excavated material on site or on other construction sites as filling materials as far as possible to minimize the disposal of public fill to public filling areas. To further minimize the generation of C&D materials, we will require the contractor to use metal in all components of site signboards. We estimate that the project will generate approximately 41 350 cubic metres (m³) of the C&D materials. Of these, we will reuse about 7 600 m³ (18%) on site, 32 500 m³ (79%) as fill in public filling area⁵ and dispose 1 250 m³ (3%) at landfills. We estimate the notional cost of accommodating C&D waste at landfill sites to be \$156,250 for this project (based on a notional unit cost⁶ of \$125/m³).

16. We will implement the measures recommended in the EIA report including the installation of noise barriers along Sai Sha Road which will reduce

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⁴ Related changes include the modification of the slope works to retaining walls to avoid intrusion into the 'Fung Shui' woodland and the new small houses development at Wu Kwai Sha New Village near Sai Sha Road and the impact of the modification of the Ma On Shan Railway scheme from underground construction to elevated railway at the Sai Sha Road widening section.

⁵ A public filling area is a designated part of a development project that accepts public fill for reclamation purposes. Disposal of public fill in a public filling area requires a licence issued by the Director of Civil Engineering.

⁶ 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/m³), nor the cost to provide new landfills (which are likely to be more expensive) when the existing ones are filled. The notional cost estimate is for reference only and does not form part of this project estimate.

traffic noise to the sensitive receivers to within the acceptable limit of 70 dB (A). For short-term construction impacts, we will incorporate relevant clauses in the works contract to control noise, dust and site run-off to within established standards and guidelines. To ensure timely and effective implementation of the environmental pollution control measures, we will formulate and implement an Environmental Monitoring & Audit (EM&A) programme. We have included \$2.0 million (in September 2001 prices) in the project estimate (in items (a) to (e) in paragraph 6 above) for the EM&A programme.

17. We will control the disposal of public fill and C&D waste to designated public filling areas and landfills respectively through a trip-ticket system. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes. We will require the contractor to submit a waste management plan to the Engineer for approval. We will ensure that the day-to-day operations on site comply with the waste management plan.

LAND ACQUISITION

18. We will resume about 7 720 square metres of agricultural land for the project. The land acquisition and clearance will affect four households and one structure. The Director of Housing will offer eligible clearerees accommodation in public housing in accordance with the existing housing policy. We will charge the land acquisition and clearance costs, estimated at \$36 million, to **Head 701 – Land Acquisition**.

BACKGROUND INFORMATION

19. We included **645TH** in Category B of the Public Works Programme in May 1997. In November 1997, we engaged consultants to carry out a detailed investigation to study the traffic, environmental and drainage impacts in connection with the project at a cost of \$1.5 million in MOD prices under **Subhead B100HX - Minor housing development related works, studies, and investigations** for items in Category D of the Public Works Programme. The consultants have completed the detailed investigation in June 2000.

20. We have now completed the detailed design and tender documents for **645TH**. We plan to start the works in early 2002 for completion in 2004.

21. We estimate that the project will create some 115 jobs comprising 15 professional/technical staff and 100 labourers totalling 2 600 man-months.

Housing Bureau
November 2001



