

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 – HIGHWAYS

Transport – Traffic Control

18TC – Renewal of Hong Kong Area Traffic Control and Closed Circuit Television Systems

Members are invited to recommend to Finance Committee the upgrading of 18TC to Category A at an estimated cost of \$128.2 million in money-of-the-day prices for the renewal of the Area Traffic Control and Closed Circuit Television systems on Hong Kong Island.

PROBLEM

The existing Area Traffic Control (ATC)¹ and Closed Circuit Television (CCTV)² systems on the Hong Kong Island have reached the end of their serviceable life. The computer systems are already obsolete and maintenance is difficult and costly.

PROPOSAL

2. The Commissioner for Transport, with the support of the Secretary for
/Environment

¹ Area Traffic Control system provides real-time coordination and adjustment of traffic control signals within an area by computers having regard to changes in traffic flow level. The objectives are to maximise the use of road capacities and to minimise delay to traffic.

² The CCTV system provides traffic operators at the control centre of the Transport Department with real time traffic information from CCTV cameras installed at strategic locations thus allowing quick remedial actions to be taken when necessary to cope with the abnormal traffic conditions and/or traffic incidents.

Environment, Transport and Works, proposes to upgrade 18TC to Category A at an estimated cost of \$128.2 million in money-of-the-day (MOD) prices for the renewal of the ATC and CCTV systems on the Hong Kong Island for efficient management and monitoring of the road network.

PROJECT SCOPE AND NATURE

3. The scope of 18TC comprises –
- (a) replacement of 280 traffic signal controllers with associated vehicle detectors at 322 junctions;
 - (b) replacement of 42 CCTV cameras at strategic locations;
 - (c) replacement of the existing ATC and CCTV systems comprising in-station computer systems and associated equipment and software at the offices of the Transport Department, the Hong Kong Police Force, the Fire Services Department and the Highways Department; and
 - (d) enhancement of communication networks.

— Site plans are at Enclosure 1.

4. We have completed the review on “Renewal of Hong Kong ATC and CCTV Systems (Design and Construction)” and the detailed design of the project in September 2002. We plan to invite tenders in April 2003 for works to start in September 2003 and complete by November 2005.

JUSTIFICATION

5. The ATC system on the Hong Kong Island covers 322 junctions located primarily along the north shore of Hong Kong Island and scattered sparingly in other parts of the Island. The CCTV system, consisting of 42 CCTV cameras, covers strategic locations on the north shore of the Island. The two systems have been in operation since 1989 and 1993 respectively.

6. The ATC system and CCTV system both have an estimated serviceable life of 10 years. The ATC system for the Hong Kong Island has reached the end of its serviceable life while the CCTV system is approaching the end of its serviceable life. Maintenance of these systems is becoming a problem owing to obsolete spare parts and outdated software, rendering repair work difficult and costly. To avoid potential road safety problems due to faults of the ATC and CCTV systems and to ensure the efficient use of the road network, it is necessary to renew both systems.

7. Compared with the existing system, the new ATC system provides more flexible real-time co-ordination and adjustment of traffic signal timing for managing traffic movement across signalised junctions. The state-of-the-art technology in the new systems also enables more efficient identification of equipment faults and more speedy repairs of the ATC, thus minimising the down time of the operation of the signalised junctions.

FINANCIAL IMPLICATIONS

8. We estimate the cost of this project to be \$128.2 million in MOD prices, made up as follows –

	\$ million
(a) Traffic Control System and Equipment	109.6
(i) ATC controllers and detectors	53.9
(ii) computer hardware and software (including installation)	33.5
(iii) CCTV cameras and other roadside equipment	10.6
(iv) CCTV control hardware and software (including installation)	7.6
(v) aspect cable repair works	4.0
 (b) Fitting-out of the control centre and miscellaneous minor building services works	 1.7

/\$million

		\$ million
(c) Hired Services Costs		8.4
(i) Resident site staff		6.3
(ii) Consultants' fee for construction and completion phase		2.1
(d) Contingencies		9.6
	Sub-total	<u>129.3 (in September 2002 prices)</u>
(e) Provision for price adjustment		(1.1)
	Total	<u><u>128.2 (in MOD prices)</u></u>

— A breakdown by man-months of the estimate for the consultants' fees is at Enclosure 2.

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

Year	\$ million (Sep 2002)	Price adjustment factor	\$ million (MOD)
2003 – 2004	34.7	0.99250	34.4
2004 – 2005	50.2	0.99250	49.8
2005 – 2006	34.8	0.99250	34.5
2006 – 2007	9.6	0.99250	9.5
	<u>129.3</u>		<u>128.2</u>

10. We have derived the MOD estimate on the basis of the Government's latest forecast of trend labour and construction prices for the period between 2003 and 2007. We will tender the electrical works as lump-sum contracts. We will allow for adjustments in the contract for inflation/deflation as the construction period will exceed 21 months.

/11.

11. We estimate that there is no additional annual recurrent expenditure arising from the project.

PUBLIC CONSULTATION

12. We consulted the Traffic and Transport Committees of the Central and Western District Council, Eastern District Council, Southern District Council and Wan Chai District Council on 20 June, 4 July, 29 July and 30 July 2002 respectively. Members of the above Committees supported the project.

13. We circulated a paper to the LegCo Panel on Transport on 25 October 2002 and Members had no objection to the proposal.

ENVIRONMENTAL IMPLICATIONS

14. The project is not a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance and an environmental permit is not required. We completed the Preliminary Environmental Review in February 2000 and concluded that the proposed works would not cause long-term environmental impacts. We have included in the project estimates the cost of implementing suitable mitigation measures³ to control the short-term environmental impacts during the construction works for the CCTV cameras and ATC ducting and controllers.

15. The project will generate a negligible amount of construction and demolition materials. Nevertheless, we will require the consultants to consider measures to minimise the generation of such materials and to reuse/recycle as much as possible in the implementation of the construction project.

LAND ACQUISITION

16. The project does not require land acquisition.

/BACKGROUND

³ Measures include the use of quiet equipment, careful scheduling of work, appropriate location of plant in relation to noise sensitive receivers as well as good site practices such as implementation of a temporary drainage system which includes silt traps, sedimentation pits for silty run-off, and infiltration pits for retaining concrete washings etc.

BACKGROUND INFORMATION

17. We upgraded the project to Category B in October 2000.

18. We engaged consultants to carry out the review and detailed design of the project in March 2002 at a cost of \$ 1.8 million. The cost was charged to Subhead **6100TX** – “Highway works, studies and investigation for items in Category D of the Public Works Programme”.

19. We estimate that the project will create some 73 jobs comprising 20 professional/technical staff and 53 labourers, totalling 1 050 man-months.

Environment, Transport and Works Bureau
November 2002

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and Closed Circuit Television Systems**

Breakdown of estimates for consultants' fees (at September 2002 prices)

Consultants' staff costs		Estimated man- months	Average MPS* salary point	Multiplier	Estimated fees (\$ million)
(a) Consultants' fees for					
(i) Construction and completion phase	Professional	12	38	2.4	1.7
	Technical	8	14	2.4	0.4
(ii) Resident Site Staff	Professional	22	38	1.7	2.2
	Technical	127	14	1.7	4.1
Total consultants' staff cost					8.4

*MPS = Master Pay Scale

Notes

1. A multiplier of 2.4 is applied to the average MPS point to arrive at the full staff costs including the consultants' overheads and profits as the staff will be employed in the consultants' offices. A multiplier of 1.7 is applied to the average MPS point in the case of resident site staff supplied by the consultants. (As at 1 October 2002, MPS pt. 38 = \$57,730 per month and MPS pt. 14 = \$19,195 per month)
2. The above figures are based on the estimates prepared by the consultants. The consultancy works in construction and completion phase and provision of resident site staff for this project have been included as an optional part of Agreement No. CE 53/2001 titled "Consultancy Assignment for Renewal of Hong Kong Area Traffic Control and Closed Circuit Television Systems (Design and Construction)". These options will only be exercised subject to Finance Committee's approval for upgrading of 18TC to Category A.

