

## **ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE**

### **Head 706 – HIGHWAYS**

#### **Transport – Traffic Control**

#### **17TC – Area Traffic Control and Closed Circuit Television Systems for Tai Po and North Districts**

Members are invited to recommend to Finance Committee to upgrade **17TC** to Category A at an estimated cost of \$97.2 million in money-of-the-day prices for the implementation of the Area Traffic Control and Closed Circuit Television systems for Tai Po and North Districts.

### **PROBLEM**

The Area Traffic Control (ATC) and Closed Circuit Television (CCTV) systems have yet to be extended to Tai Po and North Districts to cope with the existing and future traffic in the areas.

### **PROPOSAL**

2. The Commissioner for Transport, with the support of the Secretary for Transport, proposes to upgrade **17TC** to Category A at an estimated cost of \$97.2 million in money-of-the-day (MOD) prices for the implementation of the ATC and CCTV systems for Tai Po and North Districts to bring about more efficient use of limited road space.

/ **PROJECT .....**

**PROJECT SCOPE AND NATURE**

3. The proposed scope of the works under **17TC** comprises -
- (a) installation of 120 traffic signal controllers in Tai Po and North Districts;
  - (b) installation of a central computer-controlled traffic system and associated equipment in Transport Department's ATC Control Centre in Tsuen Wan;
  - (c) installation of vehicle detectors to enable real-time monitoring of traffic conditions;
  - (d) installation of 30 CCTV cameras to provide real-time visual information on traffic;
  - (e) installation of additional CCTV control/monitor equipment at the Traffic Police Control Centres and the Transport Department's Emergency Traffic Coordination Centre; and
  - (f) civil works for telecommunication services.

Site plans are at Enclosure 1.

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4. We substantially completed the review and detailed design of the project in November 2000. We plan to start the installation works in November 2001 for completion in November 2003.

**JUSTIFICATION**

5. We first introduced ATC systems in Kowloon in 1977 and progressively extended these to Hong Kong Island, Tsuen Wan and Sha Tin New Towns. Statistics show that, through improved management of traffic signals at controlled junctions, traffic conditions can be significantly improved. Our plan is to extend the systems to cover all new towns in phases.

6. The rapid housing and new town developments in Tai Po and North Districts in recent years have resulted in a significant increase in traffic. According to the latest Annual Traffic Census, daily traffic flow in Tai Po and North Districts has increased by 34% and 60% respectively between 1992 and 1999.

7. At present, there are 50 signalized junctions in Tai Po and 63 in North District. These numbers are expected to increase to 51 and 69 respectively by 2003. With the introduction of ATC system, all traffic signal controllers in the areas will be connected to a central computer in Tsuen Wan. The system will help to reduce the number of vehicle stops and shorten journey time for motorists. In particular, the system will enable -

- (a) central adjustment of traffic signal timing to suit actual traffic conditions;
- (b) better co-ordination of traffic signals operation to minimize the number of signal-controlled stops for motorists; and
- (c) rapid identification of malfunctioning traffic signals.

8. In addition, we propose to install a CCTV system in Tai Po and North Districts to enhance the efficiency of the ATC system. The system consists of 30 CCTV cameras installed at key locations, linked primarily to the ATC Control Centre in Tsuen Wan and the Traffic Police Control Centres. This provides operators in the ATC control room with real time visual images of traffic conditions and allows quick remedial action to be taken when necessary.

9. Based on our experience in other districts, we expect that the ATC system on full implementation will be able to reduce the journey time, delay and number of stops by an average of 30%, 50% and 40% respectively.

## **FINANCIAL IMPLICATIONS**

10. We estimate the cost of this project to be \$97.2 million in MOD prices, made up as follows -

/ (a) .....

		<b>\$ million</b>
(a)	Traffic Control System and Equipment	49.9
(i)	ATC controllers and detectors	25.8
(ii)	Computer hardware and software, plus installation	13.4
(iii)	CCTV roadside equipment including cameras	4.7
(iv)	CCTV control hardware and software, plus installation	4.1
(v)	other equipment at control centre	0.3
(vi)	video projection	1.0
(vii)	aspect cable repair works	0.6
(b)	Civil Works	27.3
(i)	ATC ducting and foundation	5.2
(ii)	foundation and high masts for 30 CCTV cameras	6.2
(iii)	CCTV ducting and related civil works	1.3
(iv)	ATC communication system	7.8
(v)	CCTV communication system	5.2
(vi)	site investigation	1.6
(c)	Hired Service Costs	8.2
(i)	Resident site staff	5.9

/ (ii) .....

		<b>\$ million</b>
(ii)	Consultants' fee for construction and completion phase	2.3
(d)	Contingencies	7.0
	Sub-total	<u>92.4 (at Sept 2000 prices)</u>
(e)	Provision for price adjustment	4.8
	Total	<u>97.2 (in MOD prices)</u>

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

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

Year	\$ million (Sept 2000)	Price adjustment factor	\$ million (MOD)
2001 – 2002	25.0	1.02550	25.6
2002 – 2003	55.4	1.05627	58.5
2003 – 2004	12.0	1.08795	13.1
	<u>92.4</u>		<u>97.2</u>

12. We have derived the MOD estimate on the basis of the Government's latest forecast of trend labour and construction prices over the period between 2001 and 2004. We will tender the civil engineering works as standard re-measurement contracts, and the electrical works as lump-sum contracts. We will allow for adjustment in the contract for inflation as the construction period will last longer than 21 months.

13. We estimate the additional annual recurrent expenditure arising from the project to be \$10 million.

### **PUBLIC CONSULTATION**

14. We consulted the Traffic and Transport Committee (TTC) of the Tai Po District Council on the proposed works on 16 November and that of the North District Council on 20 November 2000. Both Committees supported the project.

15. At the meeting of the LegCo Panel on Transport held on 16 March 2001, Panel Members noted the Government's plan to extend the ATC systems to cover all new towns in phases from 2001. Members raised no objection to first extend the systems to Tai Po and North Districts but requested for further details of the project. We issued a paper to Panel Members with the supplementary information on 26 March 2001.

### **ENVIRONMENTAL IMPLICATIONS**

16. We completed the Preliminary Environmental Review for the project in January 1998 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 measures to control short-term environmental impacts.

17. The project will generate a negligible amount of construction and demolition (C&D) materials. Nevertheless, we will require the consultant 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**

18. The project does not require any land acquisition.

### **BACKGROUND INFORMATION**

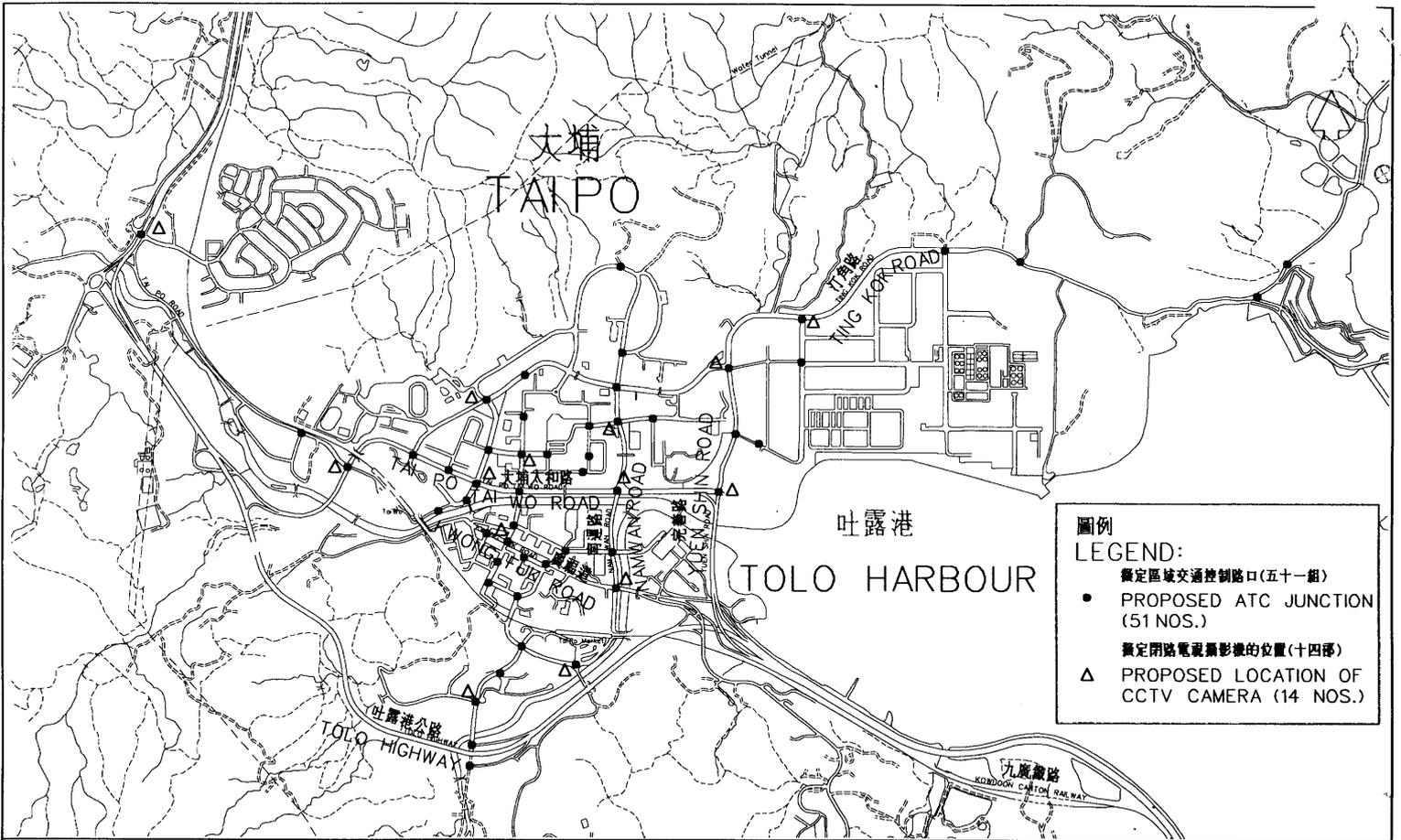
19. We upgraded the project to Category B in September 1998.

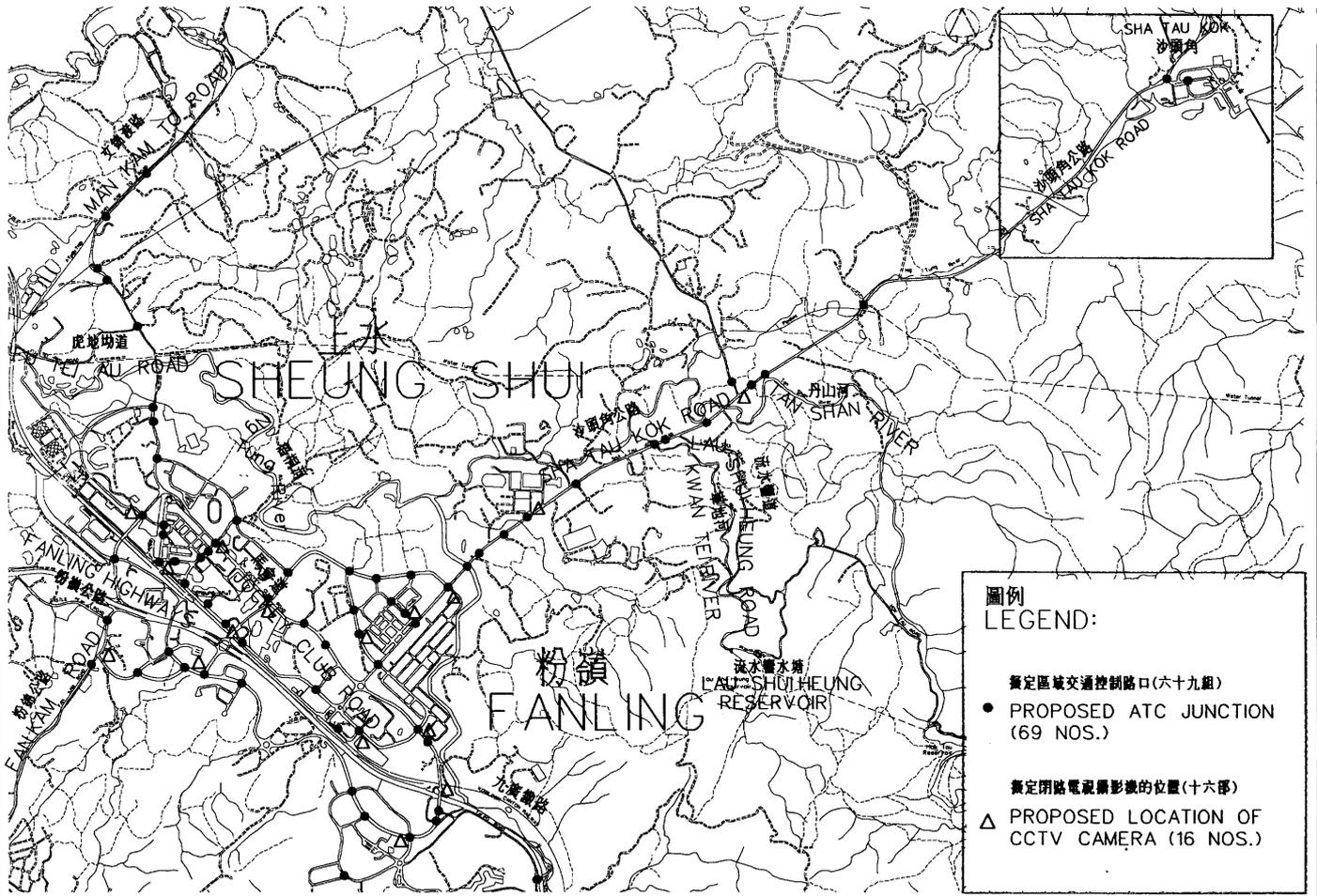
20. We engaged consultants to carry out the review and detailed design of the project in June 1999 at a cost of \$1.1 million. The cost was charged to **Subhead 6100TX** – “Highway works, studies and investigation for items in Category D of the Public Works Programme”.

21. We estimate that the project will create some 70 jobs with a total of 1 000 man-months, comprising 20 professional/technical staff and 50 labourers during the works period.

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Transport Bureau  
March 2001





**Enclosure 2 to PWSC(2001-02)8**

**17TC – Area Traffic Control and Closed Circuit Television Systems  
for Tai Po and North Districts**

**Breakdown of estimates for consultants' fees (at September 2000 prices)**

			Estimated man months	Average MPS* salary point	Multiplier factor	Estimated fees (\$ million)
<b>Consultants' staff costs</b>						
(a)	Consultants' fees for construction and completion phase	Professional	12	38	2.4	1.7
		Technical	13	14	2.4	0.6
(b)	Employment and management of Resident Site Staff for site supervision by the consultants	Professional	22	38	1.7	2.2
		Technical	116	14	1.7	3.7
Total consultants' staff costs						8.2

\*MPS = Master Pay Scale

**Notes**

1. A multiplier factor of 2.4 is applied to the average MPS point to arrive at the full staff costs including the consultants' overheads and profit, as the staff will be employed in the consultants' offices. (As at 1 April 2000, MPS pt. 38 = \$57,525 p.m. and MPS pt. 14 = \$19,055 p.m.). A multiplier factor of 1.7 is applied in the case of resident site staff supplied by the consultants.
2. The consultants' fees for work in the construction and completion stage is a provisional part of the lump sum price quoted by the selected consultants under Agreement No. CE97/98 "Area Traffic Control and Closed Circuit Television Systems for Tai Po and North Districts Design and Construction Assignment".