

For information

Legislative Council Panel on Transport

**Area Traffic Control and Closed Circuit Television Systems
for Tuen Mun and Yuen Long**

PURPOSE

This paper sets out the proposal to implement the Area Traffic Control (ATC)¹ and Closed Circuit Television (CCTV)² systems for Tuen Mun and Yuen Long.

BACKGROUND

2. We first introduced the ATC and CCTV systems in Kowloon in 1977 and progressively extended it to Hong Kong Island, Tsuen Wan, Sha Tin, Tai Po and North District. Statistics from these projects show that the traffic conditions would improve significantly through better management of the signalised junctions.

3. The rapid housing and new town developments in Tuen Mun and Yuen Long in recent years have resulted in a significant increase in traffic in both the regional and local road networks. The lack of co-ordination of traffic signals at adjacent road junctions and the need to provide light rail vehicles (LRV) with priority have further exacerbated the traffic problem, resulting in long traffic queues and delays to motorists, particularly during the peak hours. The Tuen Mun and Yuen Long Traffic Study completed in 2001 forecast that some junctions would be significantly overloaded by 2011. We estimate that

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.

the traffic in Tuen Mun and Yuen Long will further increase by about 10% over the next five years and the traffic condition will continue to deteriorate.

4. At present, there are 170 non-Light Rail Transit (LRT)³ and 83 LRT⁴ signalised road junctions in Tuen Mun and Yuen Long. The total number of LRT and non-LRT signalised junctions will increase to 280 by 2008. The proposed ATC system will interface with the existing LRT signal system, and will be capable of the following –

- (a) central adjustment of traffic signal timing to suit prevailing traffic conditions;
- (b) better co-ordination of traffic signals to minimise the number of vehicles stopping at all signalised junctions, thus reducing journey time; and
- (c) identification and subsequent repair of traffic signal faults without undue delay.

5. Experiences in other districts served by ATC systems show that full implementation of the ATC system will reduce the journey time, delay and number of stops by an average of 30%, 45% and 40% respectively. We expect that similar benefits can be produced by implementing the system at Tuen Mun and Yuen Long

6. In addition, we propose to install a CCTV system in Tuen Mun and Yuen Long to enhance the operation of the ATC system. The CCTV cameras will be installed at strategic locations and linked primarily to the control centre of the Transport Department (TD), with other auxiliary controls at the Hong Kong Police Force (HKPF), the Fire Services Department (FSD) and the Highways Department (HyD). The CCTV system provides traffic operators with real time traffic information, which allows quick remedial actions to be taken when necessary to cope with abnormal traffic conditions and/or traffic incidents.

³ Non-LRT signalised road junctions are junctions where no LRV would pass through.

⁴ LRT signalised junctions are junctions where there are through passages of LRVs which, together with other vehicles, are controlled by an interactive set of traffic signals at the junctions.

PROPOSAL

7. We propose to implement the ATC and CCTV systems for Tuen Mun and Yuen Long at an estimated cost of \$153.5 million.

8. The scope of the project comprises -

- (a) installation of about 280 ATC traffic signal controllers in Tuen Mun and Yuen Long;
- (b) installation of a central computer-controlled traffic system and associated software and equipment in TD's control centre;
- (c) installation of equipment for interfacing with the LRT System;
- (d) installation of vehicle detectors to enable real time signal operation and monitoring of traffic conditions;
- (e) installation of 48 CCTV cameras to provide real-time visual traffic information;
- (f) installation of CCTV monitoring and control equipment at two branch offices of the TD, as well as offices of HKPF, FSD and HyD;
- (g) acquisition of leased telecommunication services and provision of associated civil works to allow the transmission of traffic data and images between the control centre and the sites; and
- (h) checking of related existing traffic signal cables and carrying out repair works as appropriate.

The site plans are at **Enclosure 1**.

9. We have completed the review and detailed design of the project in March 2005. We plan to start the installation works in early 2006 for completion by mid 2008.

FINANCIAL IMPLICATIONS

10. We estimate the cost of this project to be \$ 153.5 million in money-of-the-day (MOD) prices, broken down as follows -

	\$ million
(a) Traffic Control System and Equipment	92.4
(i) ATC controllers and detectors	54.7
(ii) LRT interface	2.7
(iii) computer hardware and software, including installation	18.7
(iv) CCTV roadside equipment including cameras	3.4
(v) CCTV control hardware and software, including installation	7.2
(vi) other equipment at control centre (e.g. communication equipment)	3.5
(vii) traffic signal aspect cable checking and repair works (including labour and materials)	2.2

		\$ million	
(b)	Civil Works	34.7	
	(i) ATC ducting and foundation	15.6	
	(ii) foundation and high masts for CCTV cameras	16.4	
	(iii) CCTV ducting and related civil works	2.7	
(c)	Other miscellaneous works not covered by contracts including furnishing and building services works	2.9	
(d)	Overseas duty visits	0.1	
(e)	Consultants' and site staff fees	10.0	
	(i) Resident site staff	8.1	
	(ii) Consultants' fee for construction supervision and contract administration	1.9	
(f)	Contingencies	<u>12.6</u>	
	Sub-total	152.7	(in September 2004 prices)
(g)	Provision for price adjustment	<u>0.8</u>	
	Total	<u>153.5</u>	(in MOD prices)

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

Year	\$ million (Sept 2004)	Price adjustment factor	\$ million (MOD)
2005 – 2006	3.9	1.00450	3.9
2006 – 2007	31.7	1.00576	31.9
2007 – 2008	76.5	1.00576	76.9
2008 – 2009	40.6	1.00576	40.8
	<hr/> 152.7 <hr/>		<hr/> 153.5 <hr/>

12. We have derived the MOD estimate on the basis of the Government's latest forecast of trend rate of change in the public sector building and construction output for the period 2005 to 2009. 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/deflation as the construction period will exceed 21 months.

13. We estimate the annual recurrent expenditure arising from the project to be \$12.5 million.

PUBLIC CONSULTATION

14. We consulted this Panel in 2001 on the Intelligent Transport Systems, which comprised the ATC and CCTV systems. Members supported the proposal. We also consulted the Traffic and Transport Committee (TTC) of the Tuen Mun District Council on 10 May 2002 and the TTC of the Yuen Long District Council on 21 May 2002 on the present project. Both committees supported the project.

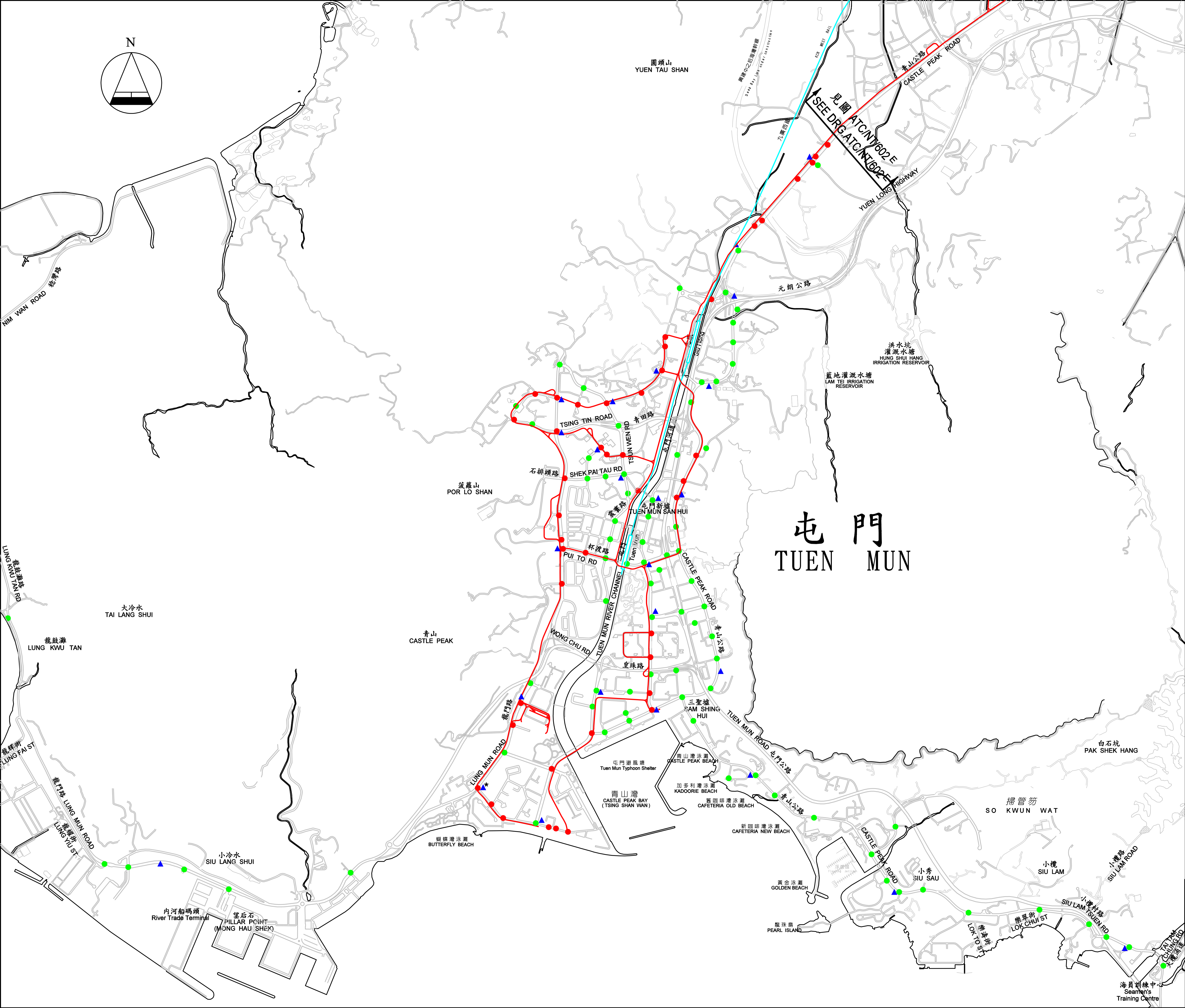
WAY FORWARD

15. We plan to consult the Public Works Sub-committee on 11 May 2005 and seek the approval of the Finance Committee on 10 June 2005 for funding the implementation of the project.

ADVICE SOUGHT

16. Members are invited to comment on the proposal.

Environment, Transport and Works Bureau
April 2005



附件一
(第1頁共2頁)
ENCLOSURE 1
(P.1 OF 2)
備註：擬定的區域交通控制系統將安設在各個輕鐵及非輕鐵路路口如圖示。
Notes：The proposed ATC system will be installed at all the LRT and non-LRT junctions as marked on the drawing.

- 圖例：
LEGEND：
- 現有非輕鐵路路口
EXISTING NON-LRT JUNCTION
 - 現有輕鐵路路口
EXISTING LRT JUNCTION
 - ▲ 建議閉路電視攝影機的位置
PROPOSED CCTV CAMERA LOCATION
 - ▲* 現有的閉路電視（屬於另一工程項目）
EXISTING CCTV CAMERA (UNDER A SEPARATE PROJECT)
 - 輕便鐵路
LIGHT RAIL TRANSIT
 - 西鐵
WEST RAIL

no.	date	description	
REVISION			
		name	date
surveyed			
designed			
drawn		K. S. CHIN	3/05
traced			
checked			
approved			
for C.E. / T.C.		DATE	
drawing title 工務計劃項目第19TC號 PWP ITEM No. 19TC 屯門區區域交通控制及 閉路電視系統 ATC & CCTV SYSTEMS FOR TUEN MUN DISTRICT			
drawing no.		scale	
ATC / NT / 601 ^E		N.T.S.	
office			
TRAFFIC CONTROL DIVISION			



