

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 709 - WATERWORKS

#### Water Supplies - Combined fresh/salt water supplies

#### 86WC - Water Supply to Pak Shek Kok, Tai Po - remaining works

Members are invited to recommend to Finance Committee -

- (a) the upgrading of part of **86WC**, entitled "Water Supply to Pak Shek Kok, Tai Po - advance mainlaying along Tolo Highway" to Category A at an estimated cost of \$18.2 million in money-of-the-day prices; and
- (b) the retention of the remainder of 86WC in Category B.

### PROBLEM

By 2002, the existing water supply system serving Pak Shek Kok and its adjoining areas will not be able to cope with the anticipated increase in water demand arising from the planned developments in the areas.

/PROPOSAL .....

### PROPOSAL

2. **THE DIRECTOR** of Water Supplies (DWS), with the support of the

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Secretary for Works, proposes to upgrade part of 86WC to Category A at an estimated cost of \$18.2 million in money-of-the-day (MOD) prices for the laying of a **fresh water** main and a **salt** water main in conjunction with roadworks along Tolo Highway.

#### PROJECT SCOPE AND NATURE

3. The scope of works **under** 86WC comprises -

- (a) construction of a fresh water service reservoir with a capacity of 5 500 cubic metres;
- (b) construction of a fresh water pumping station to cope with a demand of 5 500 **cubic metres per day; and**
- (c) laying of the associated 6.6 **kilometres** of fresh water mains of sizes ranging from 200 to 600 millimetres in diameter and 6.2 kilometres of salt water mains of sizes ranging from 150 to 300 millimetres in diameter in Pak Shek Kok and its adjoining areas.

4. The part of 86WC we now propose to upgrade to Category A comprises the laying of about 100 metres of fresh water mains of 600 millimetres diameter and 2.4 kilometres of salt water mains of sizes ranging from 200 to 300 millimetres in diameter under the **WORKs** in **paragraph** 3(c) above.

#### JUSTIFICATION

5. The existing fresh water supply system serving Pak Shek Kok and its adjoining areas has a capacity of about 1 370 cubic metres per day. This will not be able to cater for a population of about 3 000 in 2002 with a daily demand of **ABOUT 1 400 CUBIC METres**. At present, there is no salt water supply in the area and the residents there rely on fresh water for flushing. Moreover, given the anticipated rapid development in the area, we envisage that the local population

/will .....

will increase further to about 12 800 in 2005-06, resulting in a fresh water demand of about 5 500 cubic metres a day and a salt water demand of about 900 cubic metres a day. DWS plans to expand the existing fresh water system and extend the salt water supply to the area as detailed in paragraph 3 above to meet the projected growth in water demand up to 2005-06.

6. The Director of Highways (DHy) is undertaking a roadwork's project under **561TH** "Widening of Tolo Highway between Island House Interchange and Ma<sub>準</sub>iu Shui Interchange" which includes roadworks along Tolo Highway. The mainlaying works described in paragraph 4 above will **fall**<sup>1</sup> within the project boundaries of **561TH**. To avoid unnecessary repetitive road opening and interface problems arising from two contractors working on the same site, we propose to upgrade the part of 86WC detailed in paragraph 4 above so that we may incorporate the proposed mainlaying work **into** the roadworks contracts under **561TH**.

#### FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the project to be \$18.2 million in MOD prices (see paragraph 8 below), made up as follows -

	\$ million
(a) Pipe materials	2.6
(b) Mainlaying	8.5
(c) Consultants' staff cost for	1.3
(i) Contract administration	0.1
(ii) Resident site staff cost	1.2

/(d) .....

(d) Contingencies	1.2	
	_____	
Sub-total	13.6	(at December 1997 prices)
(e) Inflation allowance	4.6	
	_____	
Total	18.2	(in MOD prices)
	_____	

A breakdown by man months of the estimate for consultants' fees including resident site staff expenses is at the Enclosure.

8. Subject to approval, we will phase the expenditure as follows -

Year	\$ million (Dec 1997)	Price adjustment factor	\$ million (MOD)
1999 - 2000	0.5	1.14878	0.6
2000 - 01	4.8	1.24642	6.0
2001 - 02	5.9	1.35237	8.0
2002 - 03	1.8	1.46732	2.6
2003 - 04	0.6	1.59204	1.0
	_____		_____
	13.6		18.2
	_____		_____

9. We derived the MOD estimates on the basis of the Government's forecast of trend labour and construction prices for the period 1999 and 2004. We

/will .....

**will incorporate the proposed mainlaying works into DHy's roadworks contract. We will tender the work under a remeasurement contract because the quantities of the works are subject to variation during construction to suit the actual site conditions. We will provide adjustment for inflation in the contract because the contract period is expected to be longer than 21 months.**

10. We estimate the additional annually recurrent expenditure arising from the project to be \$152,000.

11. The project by itself will lead to an increase in water charges by a maximum of 0.01% in real terms by 2<sup>0</sup>43 .

#### PUBLIC CONSULTATION

12. We consulted the Tai Po Provisional District Board (TPPDB) on 7 July 1998. TPPDB supported the project.

#### ENVIRONMENTAL IMPLICATIONS

13. The Director of Environmental Protection vetted the Preliminary Environmental Review (PER) conducted by DWS in July 1995. The PER concluded that the mainlaying works would have no long term environmental impact and no Environmental Impact Assessment is required. We will control noise, dust and site run-off during construction to comply with established standards and guidelines through the implementation of mitigation measures in relevant contracts.

#### LAND ACQUISITION

14. The proposed works do not require land acquisition.

/BACKGROUND .....

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3 The increase on water charges is calculated on the assumption that the **water** demand remains static during the period from 1998 to 2004 and the amount of Government subsidy in the waterworks operations is to be contained at the present level.

Backgrou<sup>n</sup>d INFORMATION

15. We upgraded 86WC to Category B in September 1996. In December 1997, Finance Committee approved the upgrading of part of 86WC to **Category A as 87WC** "Water Supply to Pak Shek Kok, Tai Po - advance mainlaying along Yau King Lane" at an estimate cost of \$24.2 million in MOD prices. The scope of works of 87WC comprises the laying of about 1.6 kilometres of fresh water main and 0.5 kilometres of salt water mains in Pak Shek Kok, Tai Po and its adjoining areas. We commenced the works in January 1998 for completion in 2001.

16. As regards the mainlaying **works which we** now propose to upgrade to Category A, we have engaged consultants **to complete** the de**TAILED DESIGN AT A COST OF** \$120,000. We **charged** this amount to the block allocation Subhead 9100WX "Waterworks, studies and **investigation for items** in Category D of the Public Works Programme". We plan to start the proposed mainlaying works in December 1998 for completion in December 2001 to tie in with the roadworks programme under **561TH**.

17. DWS is continuing with the detailed design work for the remaining works under the project with the intention of starting construction in mid 1999 for completion in late 2001.

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Works Bureau  
September 1998

(PWSC0005/WIN1)

## 86WC - Water Supply to Pak Shek Kok, Tai Po - remaining works

## DETAILS OF CONSULTANT'S FEES

## Breakdown of estimates for consultants' fees

		Estimated man months	Average MPS* salary point	Multiplier factor	Estimated fee (\$ million)	
Consultants' staff costs						
(a)	Administration of <b>contract</b>	Professional	0.3	40	3.0	0.05
		Technical	0.1	16	3.0	0.01
					Sub-total	0.06
					Say	0.10
(b)	Site supervision by resident site staff employed by consultants	Professional	4.5	40	2.1	0.56
		Technical	16.1	16	2.1	0.67
					Sub-total	1.23
					Say	1.20
					<b>Total consultants' staff costs</b>	<b>1.30</b>

\*MPS = Master Pay Scale

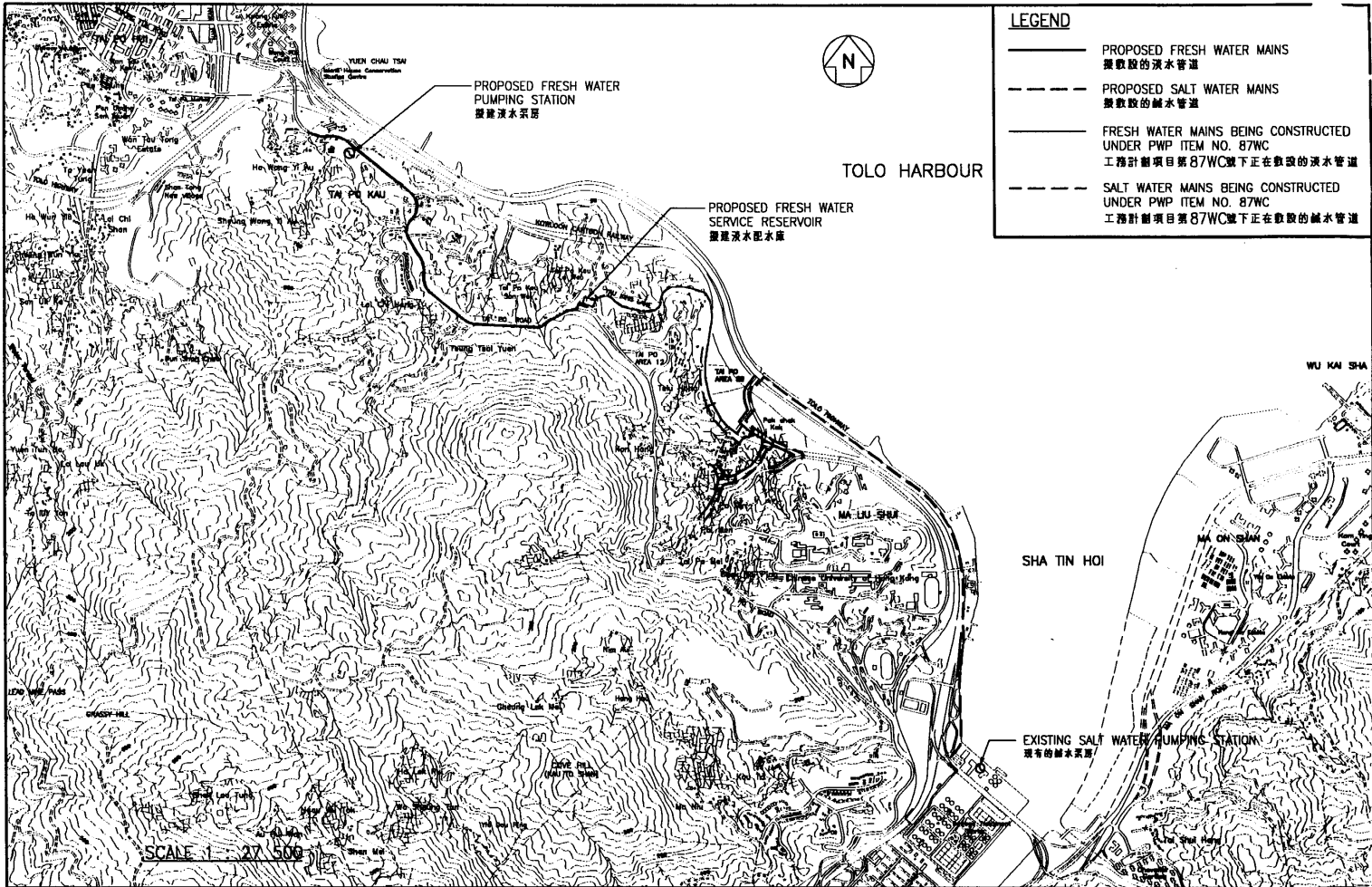
## Notes

- (1) A multiplier factor of 3.0 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 (At 1.4.97, MPS pt. 40 = \$59,210 p.m. and MPS pt. 16 = \$19,860 p.m.). A multiplier factor of 2.1 is applied to the average MPS in the case of site staff supplied by the consultants.

- (2) The figures given above are based on estimates prepared by the Director of Water Supplies. The consultancy **works for this project will be included as part of the overall consultancy agreement** for 561TH. We will know the actual consultants' fees upon finalisation of the account of the works contract.

(PWSC0005/WIN<sup>1</sup>)??



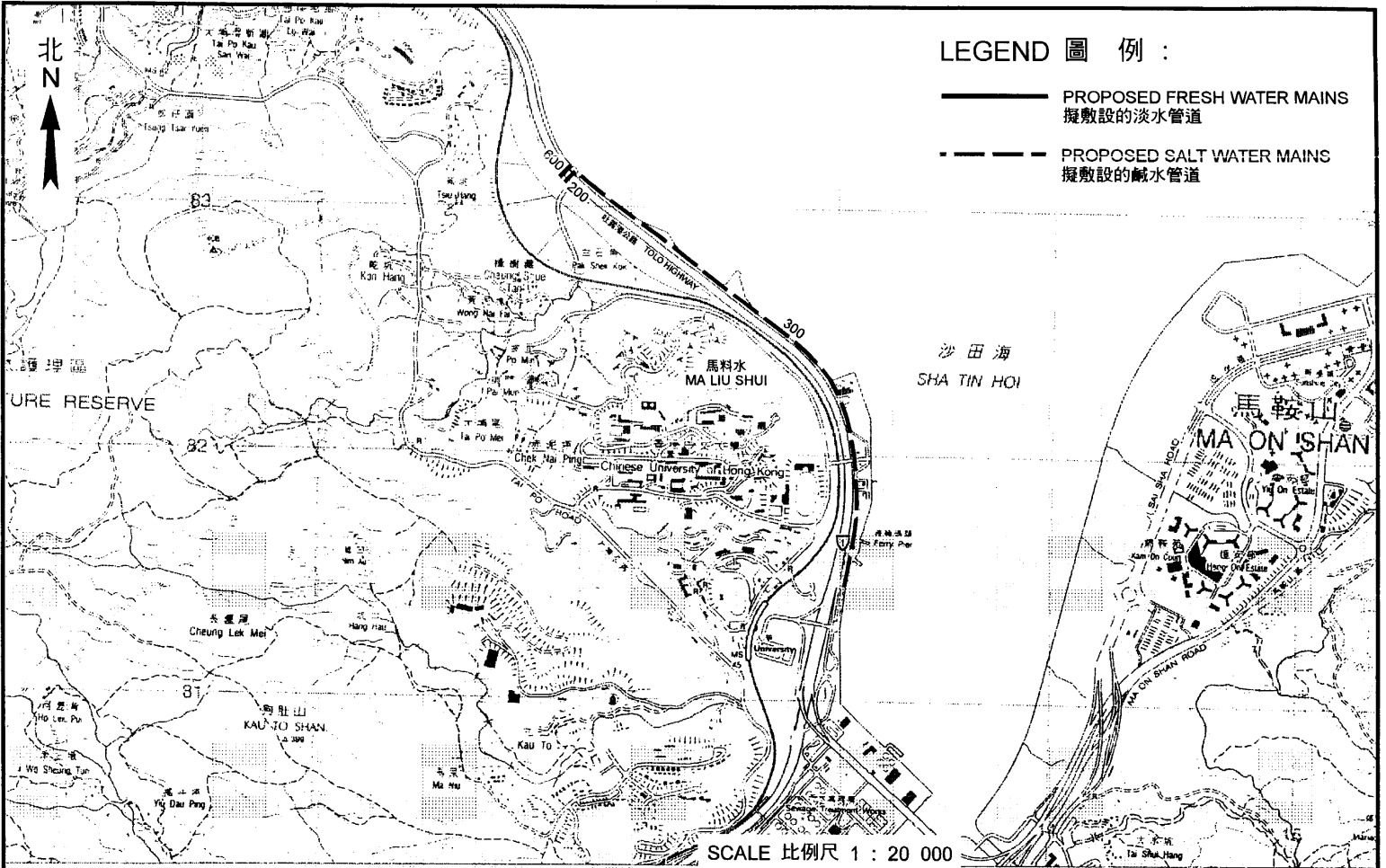


LEGEND	
	PROPOSED FRESH WATER MAINS 擬設的淡水管道
	PROPOSED SALT WATER MAINS 擬設的鹹水管道
	FRESH WATER MAINS BEING CONSTRUCTED UNDER PWP ITEM NO. 87WC 工務計劃項目第87WC號下正在設的淡水管道
	SALT WATER MAINS BEING CONSTRUCTED UNDER PWP ITEM NO. 87WC 工務計劃項目第87WC號下正在設的鹹水管道

APPROVED :  
  
 CE/Dist  
 23/7/98

PWP ITEM NO. 86WC - WATER SUPPLY TO PAK SHEK KOK, TAI PO - REMAINING WORKS  
 LAYOUT PLAN  
 工務計劃項目第86WC號 - 大埔白石角供水計劃 - 餘下工程  
 分佈圖

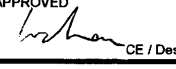
WATER SUPPLIES DEPARTMENT  
 HONG KONG  
 (SHEET 1 OF 2)  
 (二之一)  
 SKETCH NO. 03798/133/001



**LEGEND 圖例：**

—— PROPOSED FRESH WATER MAINS  
擬敷設的淡水管道

- - - - PROPOSED SALT WATER MAINS  
擬敷設的鹹水管道

APPROVED  
  
 CE / Des  
 23 / 7 / 98

PWP ITEM NO. 86 WC - WATER SUPPLY TO PAK SHEK KOK, TAI PO - REMAINING WORKS  
 ADVANCE MAINLAYING ALONG TOLO HIGHWAY  
 工務計劃項目第86WC號 - 大埔白石角供水計劃 - 餘下工程  
 沿吐露港公路早期水管敷設工程

(CAT 'A' SUBMISSION)  
 (甲級工程)

(SHEET 2 OF 2)  
 (二之二)

WATER SUPPLIES DEPT.  
 HONG KONG  
 SKETCH NO. 03798 / 133 / 002