

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 709 - WATERWORKS

Water Supplies - Fresh water supply

238WF - Mainlaying between Sham Tseng and So Kwun Tan

Members are invited to recommend to Finance Committee –

- (a) the upgrading of part of **238WF**, entitled "Mainlaying between Siu Lam and So Kwun Tan", to Category A at an estimated cost of \$44.8 million in money-of-the-day (MOD) prices; and
- (b) the retention of the remainder of **238WF** in Category B.

PROBLEM

Sham Tseng and Tuen Mun East areas¹ are served by two isolated fresh water supply systems. In the event of a failure in their respective systems, no alternative water supply can be arranged.

/PROPOSAL

¹ Sham Tseng area covers Sham Tseng, Ma Wan and Tsing Lung Tau. Tuen Mun East area comprises the areas from Sam Shing Estate to Tai Lam Chung.

PROPOSAL

2. The Director of Water Supplies (DWS), with the support of the Secretary for the Environment, Transport and Works, proposes to upgrade part of **238WF** to Category A at an estimated cost of \$44.8 million in MOD prices for the laying of fresh water mains between Siu Lam and So Kwun Tan to improve the reliability of fresh water supply to the Sham Tseng and Tuen Mun East areas.

PROJECT SCOPE AND NATURE

3. The part of **238WF** which we now propose to upgrade to Category A comprises the laying of about 2.8 kilometres (km) of fresh water mains of about 1 000 mm in diameter along Castle Peak Road between Siu Lam and So Kwun Tan. A site plan showing the proposed works is at Enclosure 1.

4. We have now substantially completed the design and worked out the associated traffic arrangement for the proposed works which we plan to commence construction in April 2007 for completion in March 2010.

JUSTIFICATION

5. At present, Sham Tseng area covering a population of 36 000 is served by an isolated fresh water supply system with water sourced from the Sham Tseng Water Treatment Works. Tuen Mun East area covering a population of 48 000 is served by another separate supply system with water sourced from the Tuen Mun Water Treatment Works. In case either one of the systems fails, there will be no alternative water supply to serve the respective area.

6. To enhance the reliability of fresh water supply to the Sham Tseng and Tuen Mun East areas, we propose to link up the two water supply systems and adjacent supply network under **238WF**. Upon completion of all the works under **238WF**, the proposed integration of the water supply systems will enable the transfer of water supply from Sham Tseng to Tuen Mun East and vice versa at times of need. To avoid creating adverse impact on the traffic along the Castle Peak Road, we are implementing the proposed works under **238WF** in stages.

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the proposed works to be \$44.8 million in MOD prices (see paragraph 8 below), made up as follows –

/(a)

		\$million	
(a)	Mainlaying	38.9	
(b)	Environmental mitigation measures	0.4	
(c)	Contingencies	3.9	
	Sub-total	43.2	(in September 2006 prices)
(d)	Provision for price adjustment	1.6	
	Total	44.8	(in MOD prices)

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

Year	\$ million (Sep 2006)	Price Adjustment Factor	\$ million (MOD)
2007 – 2008	3.9	1.01250	3.9
2008 – 2009	15.5	1.02769	15.9
2009 – 2010	15.4	1.04310	16.1
2010 – 2011	5.6	1.05875	5.9
2011 – 2012	2.8	1.08257	3.0
	43.2		44.8

9. We have derived the MOD estimates on the basis of the Government's latest forecast of trend rate of change in the prices of public sector building and construction output for the period 2007 to 2012. We will implement the mainlaying works under a re-measurement contract because the quantities of works are subject to variation to suit the actual underground conditions. The contract will provide for price adjustment as the contract period will exceed 21 months. We will supervise the proposed works using in-house staff.

10. We estimate the annual recurrent expenditure arising from this project to be \$162,000.

11. The proposed works by itself would lead to an increase in production cost of water by 0.02% in real terms by 2012².

PUBLIC CONSULTATION

12. We consulted the Tuen Mun District Council on 20 January 2006. Members supported the proposed works.

13. We consulted the Legislative Council Panel on Planning, Lands and Works on the proposed works by circulation of an information paper on 16 October 2006. Members raised no objection to the proposal.

ENVIRONMENTAL IMPLICATIONS

14. This is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). The project would have no long-term environmental impact. We will control short-term construction impacts through the implementation of standard pollution control measures. We have included \$0.4 million (in September 2006 prices) in the project estimates for the implementation of these mitigation measures and will incorporate these requirements in the works contract.

15. We have considered the alignment and level of the proposed water main in the planning and design stage to reduce the generation of construction and demolition (C&D) materials where possible. In addition, we will require the contractor to reuse inert C&D materials (e.g. excavated soil) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of C&D materials to public fill reception facilities³. We will encourage the contractor to maximise the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimise the generation of construction waste.

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² The increase in production cost of water is calculated at the present price level and on the assumption that the water demand remains static during the period from 2007 to 2012.

³ Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of public fill in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

16. We will also require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to avoid, reduce, reuse and recycle C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMP. We will control the disposal of public fill and C&D waste to public fill reception facilities and landfills respectively through a trip-ticket system. We will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

17. We estimate that the proposed works will generate about 14 000 tonnes of C&D materials. Of these, we will reuse about 7 200 tonnes (51.4%) on site, deliver 6 760 tonnes (48.3%) to public fill reception facilities for subsequent reuse and dispose of 40 tonnes (0.3%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be \$187,520 for this project (based on the cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne⁴ at landfills).

TRAFFIC IMPLICATIONS

18. We will closely liaise with the Transport Department, Hong Kong Police Force, Highways Department and Tuen Mun District Office, and implement temporary traffic management schemes to minimise disruption to traffic during construction. We will display notice boards on site to explain the reason of temporary traffic arrangements and to show the expected completion date of the concerned section of works. In addition, we will set up telephone hotlines for public enquiries or complaints.

LAND ACQUISITION

19. The proposed works does not involve any land acquisition.

BACKGROUND INFORMATION

20. We included **238WF** in Category B in September 1998. The full scope of works comprises the laying of about 10 km of fresh water mains along Castle Peak Road from Sham Tseng to So Kwun Tan via Ka Loon Tsuen and Siu Lam.

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⁴ 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 is likely to be more expensive) when the existing ones are filled.

21. In January 2001, we upgraded part of **238WF** to Category A as **259WF** "Mainlaying between Sham Tseng and Ka Loon Tsuen" at a cost estimate of \$66.5 million for laying of about 3.5 km of fresh water mains to tie in with the roadworks programme⁵ in Castle Peak Road. The works commenced in November 2001 for completion in April 2007.

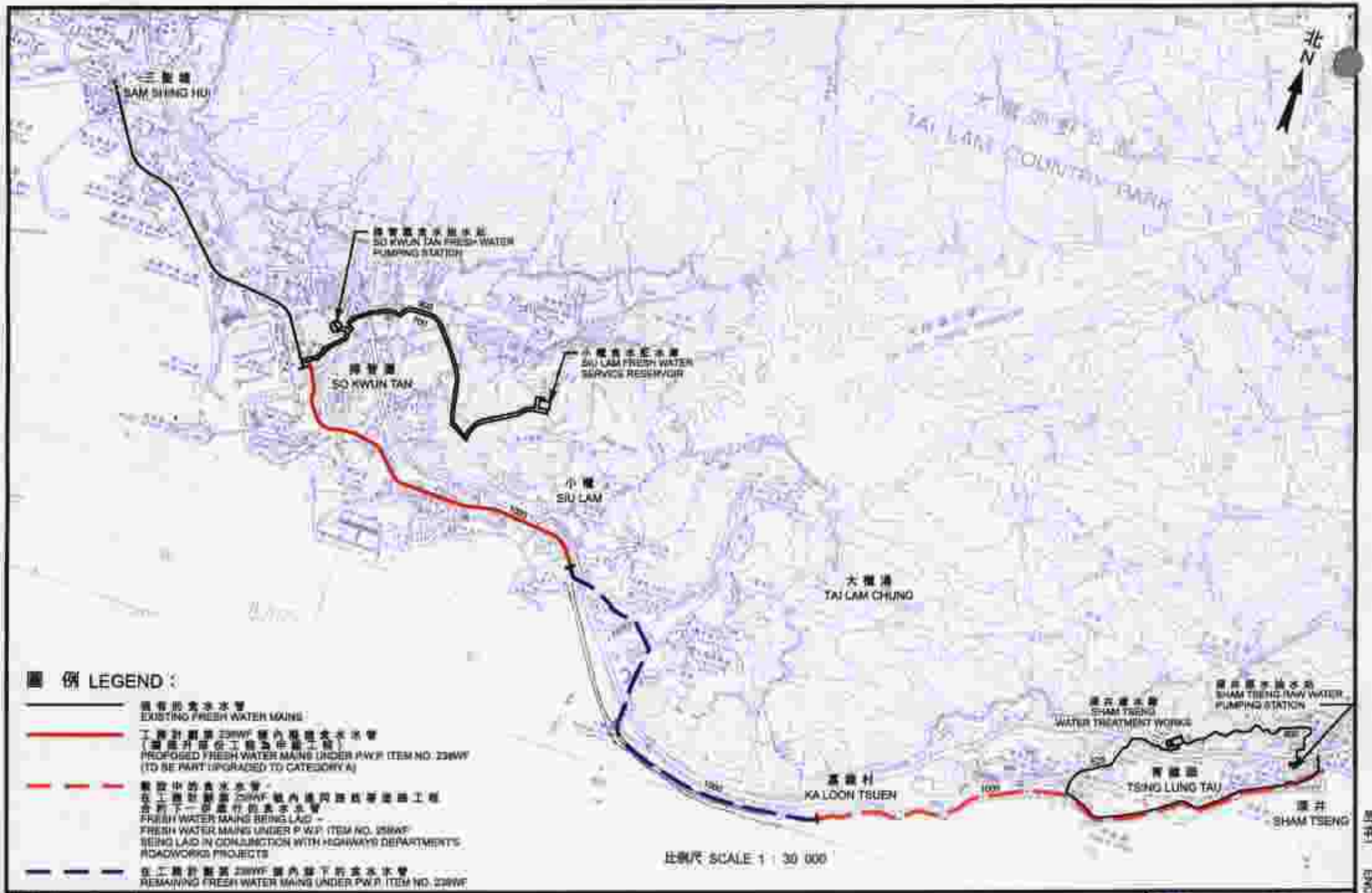
22. We will continue to closely monitor the progress of the different stages of mainlaying works on site and take into account the impact on the traffic along Castle Peak Road when planning the remaining 3.7 km of fresh water mains from Ka Loon Tsuen to Siu Lam under **238WF** to be retained in Category B.

23. The proposed works will not involve any tree removal or planting proposal.

24. We estimate that the proposed works will create about 27 jobs (23 for labourers and another four for professional/technical staff) providing a total employment of 830 man-months.

Environment, Transport and Works Bureau
November 2006

⁵ The mainlaying works under **259WF** are being executed as part of the roadworks contract under **553TH** "Castle Peak road improvement between Sham Tseng and Ka Loon Tsuen".



圖例 LEGEND :

-  現有之淡水水管
EXISTING FRESH WATER MAINS
-  工程計劃第 238WF 號內擬議之淡水水管
(該項升壓工程為中期工程)
PROPOSED FRESH WATER MAINS UNDER P.W.R. ITEM NO. 238WF
(TO BE PART UPGRADED TO CATEGORY A)
-  擬設中之淡水水管
在工程計劃第 238WF 號內進行道路改善工程
合於下一段進行之淡水水管
FRESH WATER MAINS BEING LAID -
FRESH WATER MAINS UNDER P.W.R. ITEM NO. 238WF
BEING LAID IN CONJUNCTION WITH HIGHWAYS DEPARTMENT'S
ROADWORKS PROJECTS
-  在工程計劃第 238WF 號內留下之淡水水管
REMAINING FRESH WATER MAINS UNDER P.W.R. ITEM NO. 238WF

比例尺 SCALE 1 : 30 000

16/10/2006

1/2006

工程計劃第 238WF 號 — 康井至錦豐淡水管敷設工程
PWP ITEM NO. 238WF — MAINLAYING BETWEEN SHAM TSENG AND SO KWUN TAN

水務署
WATER SUPPLIES DEPT.
圖則號碼
SK 62006 / 041

附件 1
ENCLOSURE 1