

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 709 -WATERWORKS

Water Supplies – Fresh water supplies

204WF – Water supply to remaining remote villages in the New Territories (scheme nos. 23A, 40 and 50)

Members are invited to recommend to Finance Committee the upgrading of **204WF** to Category A at an estimated cost of \$50.4 million in money-of-the-day prices for the provision of treated water supply to To Kwa Peng village, Tai Long village, Ham Tin village, Sai Wan village and Ma On Shan Tsuen in the New Territories.

PROBLEM

The To Kwa Peng village in the Tai Po District; the Tai Long, Ham Tin and Sai Wan villages in the Sai Kung District; and the Ma On Shan Tsuen in the Sha Tin District do not have reliable treated water supply.

PROPOSAL

2. The Director of Water Supplies (DWS), with the support of the Secretary for Works, proposes to upgrade **204WF** to Category A at an estimated cost of \$50.4 million in money-of-the-day (MOD) prices for the provision of treated water supply to –

- (a) To Kwa Peng village under Village Water Supply Scheme No. 23A;

/(b)

- (b) Tai Long, Ham Tin and Sai Wan villages under Village Water Supply Scheme No. 40; and
- (c) Ma On Shan Tsuen under Village Water Supply Scheme No. 50.

PROJECT SCOPE AND NATURE

3. Parts of **204WF**, which comprised the extension of treated water supply to nine remote villages, have already been upgraded to Category A. The remaining part which we now propose to upgrade to Category A comprises the extension of treated water supply to five remote villages under the following Village Water Supply Schemes -

- (a) Scheme No. 23A – Water supply to To Kwa Peng in Tai Po District
 - (i) the laying of about 1 kilometre (km) of fresh water mains of 100 millimeters (mm) in diameter from Pak Tam Road to To Kwa Peng;
- (b) Scheme No. 40 – Water supply to Tai Long, Ham Tin and Sai Wan in Sai Kung District
 - (i) the construction of a fresh water pump house;
 - (ii) the procurement and installation of pump sets and associated equipment;
 - (iii) the construction of a fresh water tank with a capacity of 125 cubic metres (m³);
 - (iv) the construction of a fresh water break pressure tank¹ with a capacity of 30 m³; and
 - (v) the laying of about 10.5 km of fresh water mains of 50 to 100 mm in diameter from To Kwa Peng to Ham Tin and Sai Wan;

/(c)

¹ A fresh water break pressure tank is a tank which protects the pipeline system from excessive hydraulic pressure.

- (c) Scheme No. 50 – Water supply to Ma On Shan Tsuen in Sha Tin District
- (i) the construction of a fresh water pump house;
 - (ii) the procurement and installation of pump sets and associated equipment;
 - (iii) the construction of a fresh water tank with a capacity of 53 m³; and
 - (iv) the laying of about 3.9 km of fresh water mains of 80 to 150 mm in diameter, from the proposed pump house to the proposed fresh water tank.

4. We plan to start construction in March 2002 for completion by May 2004. Site plans showing the proposed works under **204WF** are at Enclosure 1.

JUSTIFICATION

5. The five remote villages described in paragraph 3 above have a total population of about 760. At present, they obtain water from streams and wells. We consider the use of untreated water from such sources for drinking to be unhygienic and potentially hazardous to health. Having considered the condition of the local water sources, the population in each village, the cost of providing treated water and the developments in their vicinity, DWS proposes to provide treated water supply to the villages concerned.

FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the proposed works to be \$50.4 million in MOD prices (see paragraph 7 below), made up as follows –

	\$ million
(a) Scheme No. 23A	2.0
(i) laying of water mains	2.0
(b) Scheme No. 40	28.8

/(i)

	\$ million	
(i) construction of a fresh water pump house	1.0	
(ii) mechanical and electrical works	1.2	
(iii) construction of a fresh water tank	3.3	
(iv) construction of a fresh water break pressure tank	2.4	
(v) laying of water mains	20.9	
(c) Scheme No. 50	14.1	
(i) construction of a fresh water pump house	0.7	
(ii) mechanical and electrical works	1.0	
(iii) construction of a fresh water tank	2.9	
(iv) laying of water mains	9.5	
(d) Environmental mitigation measures	0.5	
(e) Contingencies	4.5	
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Sub-total	49.9	(in September 2001 prices)
(f) Provision for price adjustment	0.5	
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Total	50.4	(in MOD prices)
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7. Subject to approval, we will phase the expenditure as follows –

/2002

Year	\$ million (Sept 2001)	Price adjustment factor	\$ million (MOD)
2002 – 2003	2.8	0.99700	2.8
2003 – 2004	21.9	1.00398	22.0
2004 – 2005	18.2	1.01101	18.4
2005 – 2006	5.0	1.01808	5.1
2006 – 2007	2.0	1.02521	2.1
	49.9		50.4

8. We have derived the MOD estimate on the basis of the Government's latest forecast of trend labour and construction prices for the period 2002 to 2007. We will tender the civil works under standard remeasurement contracts because the quantities of the works are subject to variation during construction to suit the actual site conditions. The contracts will not provide for price adjustment because the contract periods of all contracts will not exceed 21 months. Separately, we will tender the supply of the new pump sets under a fixed price lump sum contract and will carry out the installation work with in-house resources.

9. The recurrent expenditure arising from this project is about \$900,000 per annum.

10. This project by itself will lead to an increase in water charges by 0.04% in real terms by 2007².

/PUBLIC

² The increase in water charges is calculated on the assumption that the demand remains static during the period from 2002 to 2007 and the amount of government subsidy to the waterworks operations is to be contained at the present level.

PUBLIC CONSULTATION

11. We consulted the Environmental Improvement and Works Committee of the Tai Po District Council and the Sai Kung North Rural Committee on Scheme No. 23A in April 2001. Both Committees had no particular comment on the proposed scheme.

12. We consulted the Sai Kung District Council on Scheme No. 40 on 1 March 2001. The Council supported the proposed scheme.

13. We consulted the Sha Tin East One Area Committee and the residents of Ma On Shan Tsuen on Scheme No. 50 in 1998. They supported the proposed scheme. We have also submitted this project to the Development and Housing Committee of the Sha Tin District Council for discussion on 30 October 2001.

ENVIRONMENTAL IMPLICATIONS

14. The Director of Environmental Protection has carried out an environmental review for the project and concluded that the project will not have any long-term environmental impact. Therefore, an environmental impact assessment is not necessary. We have designed the fresh water tanks and water pump houses such that the level of the intruding noise during their operation complies with the established criteria, standards and guidelines. For short-term construction impacts, standard pollution control measures³ will be sufficient to mitigate the impacts. We have included in the project the cost of implementing these mitigation measures (\$0.5 million in September 2001 prices) and will incorporate these requirements into the works contracts for implementation.

15. At the planning and design stage, we have given due consideration to designing the levels, alignments, orientations and dimensions of the proposed water mains, water tanks and pump houses to minimise the generation of construction and demolition (C&D) materials. We estimate that about 5 685 m³ of

/C&D

³ The standard pollution control measures include wheel washing facilities, desilting traps, the use of silenced plant and other procedures as recommended in the Environmental Protection Department's Recommended Pollution Control Clauses.

C&D materials will be generated by the project. Of these, we will reuse about 4 750m³ (83.6%) on site, 910 m³ (16.0%) as fill in public filling areas⁴ and dispose of 25 m³ (0.4%) at landfills. The notional cost of accommodating C&D waste at landfill sites is estimated to be \$3,125 for this project (based on a notional unit cost⁵ of \$125/m³).

16. We will require the contractors to submit waste management plans (WMPs) for approval. We will ensure that the day-to-day operations on site comply with the approved WMPs. We will implement a trip-ticket system to control the proper disposal of C&D materials and will record the reuse, recycling and disposal of C&D materials for monitoring purposes.

LAND ACQUISITION

17. The proposed works do not require land acquisition.

BACKGROUND INFORMATION

18. In 1980, the Director of Water Supplies, in consultation with the Heung Yee Kuk and the then City and New Territories Administration (now Home Affairs Department), drew up a list of about 750 villages in the New Territories for the purpose of stage-by-stage provision of treated supply to these villages. Over the years, some of these villages have been cleared or found to be deserted while other villages previously not identified have been added to the list. The total number of villages on the list is now 741. We have now extended treated water supply to 688 villages and there remain 53 villages without treated water supply.

19. Of the remaining 53 villages with a total population of about 8 430, we anticipate that 39 villages, with a total population of about 8 240, will be provided with treated water supply in stages from 2002 to 2006. Of the remaining
/14

⁴ A public filling area is a designated part of a development project that accepts public fill for reclamation purposes. Disposal of public fill in a public filling area requires a licence issued by the Director of Civil Engineering.

⁵ 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 are likely to be more expensive) when the existing ones are filled. The notional cost estimate is for reference only and does not form part of this project estimate.

14 villages with a total population of about 190, we have also commenced feasibility studies on providing treated water supply to these villages.

20. Of the 39 villages to be provided with treated water supply, we have started works at 25 villages and have completed the detailed design for some of the remaining villages (including the five remote villages which are the subject of this submission).

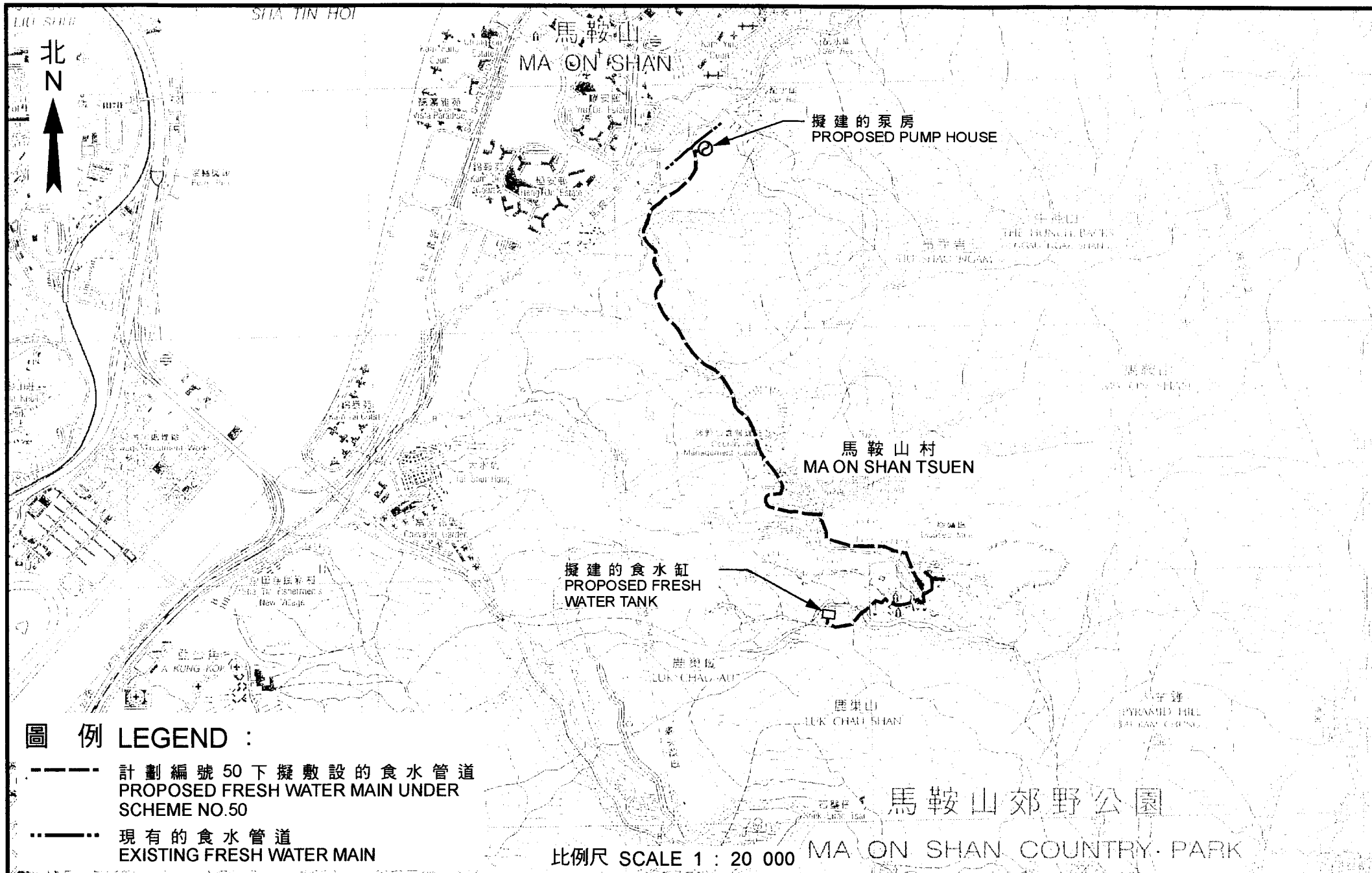
21. We upgraded **204WF** to Category B in September 1995. It forms part of the programme for the provision of treated water supply to remote villages as mentioned in paragraphs 18 and 19 above.

22. On 12 May 2000, the Finance Committee approved the upgrading of part of **204WF** to Category A as **250WF** "Water Supply to remaining remote villages in the New Territories (scheme nos. 36D and 49)" for the provision of treated water supply to four remote villages which are Ngau Kwu Long, Pak Mong and Tai Ho on Lantau Island and Kau Sai village in Sai Kung. Works commenced in December 2000 and will be completed by end 2002.

23. We estimate that the project will create some 30 jobs comprising 5 professional/technical staff and 25 labourers, totalling 670 man-months.

Works Bureau
October 2001


(pwsc204wfvf.doc)



圖例 LEGEND :

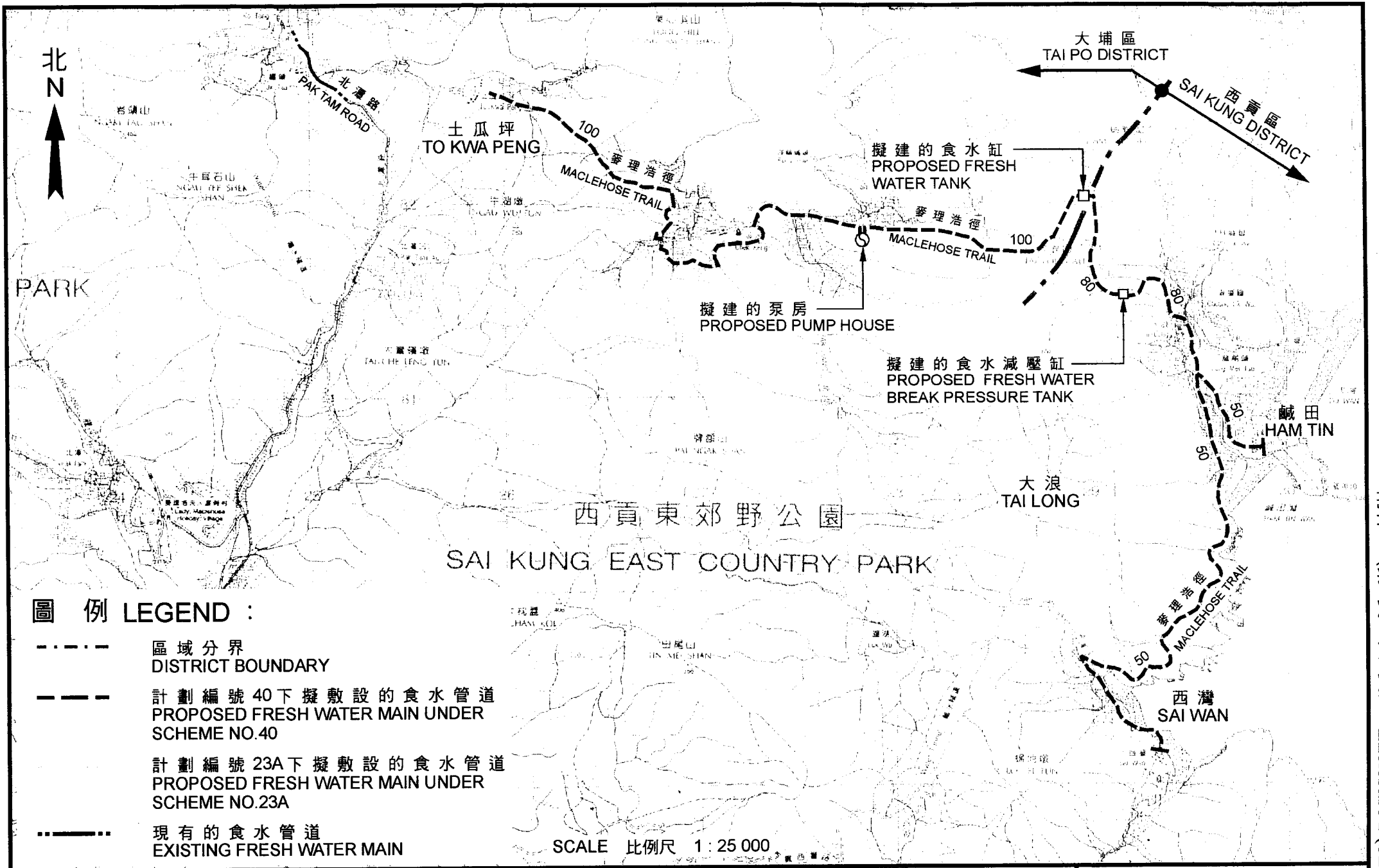
- 計劃編號 50 下擬敷設的食水管道
PROPOSED FRESH WATER MAIN UNDER SCHEME NO. 50
- 現有的食水管道
EXISTING FRESH WATER MAIN

比例尺 SCALE 1 : 20 000

核准 APPROVED

 總工程師/設計 CE / DES
 22 / 10 / 2001

工務計劃項目第204WF號 — 新界餘下偏遠鄉村供水計劃
 計劃編號 50 - 沙田區內馬鞍山村供水計劃
 P.W.P. ITEM NO. 204WF — WATER SUPPLY TO REMAINING REMOTE VILLAGES IN THE NEW TERRITORIES
 (甲級工程) SCHEME NO. 50 - WATER SUPPLY TO MA ON SHAN TSUEN IN SHA TIN DISTRICT
 (CAT 'A' Submission)


 水務署
 WATER SUPPLIES DEPT.
 草圖編號 SK 62001 / 062
 SKETCH NO.



圖例 LEGEND :

- 區域分界
DISTRICT BOUNDARY
- 計劃編號40下擬敷設的食水管道
PROPOSED FRESH WATER MAIN UNDER SCHEME NO.40
- 計劃編號23A下擬敷設的食水管道
PROPOSED FRESH WATER MAIN UNDER SCHEME NO.23A
- 現有的食水管道
EXISTING FRESH WATER MAIN

SCALE 比例尺 1 : 25 000

核准 APPROVED

 總工程師/設計 CE / DES
 22/10/2001

工務計劃項目第204WF號 — 新界餘下偏遠鄉村供水計劃
 計劃編號23A及40 - 大埔區內土瓜坪及西貢區內大浪，鹹田及西灣供水計劃
 P.W.P. ITEM NO. 204WF — WATER SUPPLY TO REMAINING REMOTE VILLAGES IN THE NEW TERRITORIES
 SCHEME NOS. 23A & 40 - WATER SUPPLY TO TO KWA PENG IN TAI PO DISTRICT AND TAI LONG, HAM TIN AND SAI WAN IN SAI KUNG DISTRICT

 水務署
 WATER SUPPLIES DEPT.
 草圖編號 SK 62001 / 063
 SKETCH NO.

附件 1 (第2頁, 共2頁) Enclosure 1 (Sheet 2 of 2)