Information Paper for Legislative Council
LegCo Panel on Planning, Lands and Works
Meeting on 4 December 2000

224WF - Mainlaying between Sham Tseng and Yau Kom Tau
238WF - Mainlaying between Sham Tseng and So Kwun Tan

Introduction

1. The Administration has scheduled to submit a PWSC paper for upgrading the whole of **224WF** entitled "Mainlaying between Sham Tseng and Yau Kom Tau" and part of **238WF** entitled "Mainlaying between Sham Tseng and Ka Loon Tsuen" to Category A, for consideration at the PWSC Meeting on 10 January 2001. The purpose of this paper is to brief Panel Members on the proposed works.

2. Currently, Sham Tseng areas[1] and Tuen Mun East areas[2] are respectively served by isolated water supply systems. In the event of a failure in either one of the systems, no alternative water supply could be arranged. Water supply using water trucks cannot meet the demand. Moreover, the scale and degree of inconvenience are unacceptable and will surely attract public criticisms. The water supply system nearest to Sham Tseng is in Yau Kom Tau. By linking up the water supply system in Yau Kom Tau with those in Sham Tseng and Tuen Mun East, a reliable backup water supply can be made available to the areas when needed.

3. To achieve the above linkage, the Director of Water Supplies (DWS), with the support of the Secretary for Works, proposes to lay fresh water mains of about 14.7 kilometres in length and 1 000 millimetres in diameter along Castle Peak Road from Yau Kom Tau to Sham Tseng under **224WF** and then to So Kwun Tan, Tuen Mun East under **238WF**.

---

[1] Sham Tseng areas cover Sham Tseng, Ma Wan and Tsing Lung Tau.

[2] Tuen Mun East areas comprise the areas from Sam Shing Estate to Tai Lam Chung.

Scope of Works

4. The scope of works for **224WF** comprises the laying of fresh water mains of about 4.7 kilometres in length and 1 000 millimetres in diameter along Castle Peak Road from Yau Kom Tau to Sham Tseng. This section of water mains is entirely within the boundary of the roadworks project **365TH** "Castle Peak Road improvement between Area 2 and Sham Tseng, Tsuen Wan" to be undertaken by the Director of Highways (D of Hy).

5. The scope of works for **238WF** comprises the laying of fresh water mains of about 10 kilometres in length and 1 000 millimetres in diameter along Castle Peak Road from Sham Tseng via Ka Loon Tsuen to So Kwun Tan. The section of water mains from Sham Tseng to Ka Loon Tsuen is within the boundary of the roadworks project **553TH** "Castle Peak Road improvement between Sham Tseng and Ka Loon Tsuen, Tsuen Wan" to be undertaken by the D of Hy.

6. The works we now propose to upgrade to Category A comprise the laying of all the water mains under **224WF** and the 3.5 km long water mains from Sham Tseng to Ka Loon Tsuen under **238WF**.

7. The attached sketches No. SK 62000/121 and SK62000/122/001&002 show the scope of the proposed works.

Justification for Works

8. At present, Sham Tseng areas with a population of 23 600 are served by an isolated water supply system with the source of water from Sham Tseng treatment works while Tuen Mun East areas with a population of 31 000 are served by another separate supply system with the source of water from Tuen Mun treatment works. In the event that either one of the systems fails, there will be no alternative water supply to serve the respective area. To safeguard the reliability of water supply, we propose to link up the two systems and integrate them with the water supply system in Yau Kom Tau. The proposed integration will enable the transfer of water from Yau Kom Tau to Sham Tseng and then to Tuen Mun East (on completion of all works under **238WF**) when needed. Similar linking up of water supply is also being implemented in other supply areas to ensure a reliable water supply in the territory.

9. To avoid unnecessary repeated road opening, we will incorporate the proposed mainlaying works into the roadworks contracts of **365TH** and **553TH** undertaken by D of Hy to enable the laying of the proposed water mains in conjunction with the roadworks.

Consequences of Delay

10. If the proposed mainlaying works cannot be incorporated into the above roadworks projects, the commencement date of the mainlaying works will have to be deferred to 5 years after the completion of the roadworks (i.e. May 2010 according to HyD's latest programme) due to the 5 years' restriction in the opening of a new road. Taking the construction time into consideration, the backup supply can only be given to Sham Tseng and Tuen Mun East on or after 2014. Moreover, separating the mainlaying works and the roadworks will result in significant disturbance to the public due to repeated road opening as well as additional cost for the road reinstatement.

Cost

11. We estimate the capital costs of the proposed works under **224WF** and **238WF** to be $91.6 million and $66.5 million respectively in money-of-the-day (MOD) prices made up as follows -

		224WF $million	**238WF $million**
(a)	Pipe materials	14.7	10.9
(b)	Mainlaying	50.6	36.0
(c)	Consultants' fees for contract administration	0.2	0.2
(d)	Resident site staff costs	8.6	6.4
(e)	Environmental mitigation measures	1.0	1.0

		224WF $million	238WF $million	
(f)	Contingencies	7.5	5.5	
	Sub-total	82.6	60.0	(in September 2000 prices)
(g)	Provision for price adjustment	9.0	6.5	
	Total	91.6	66.5	(in MOD prices)

12. We will incorporate the proposed mainlaying works into D of Hy's roadworks contracts and the works will be tendered under standard remeasurement contracts because the quantities of the works are subject to variation during construction to suit the actual site conditions. We will provide price adjustment in the contracts because the contract period will exceed 21 months.

Public Consultation

13. We consulted the Environmental Affairs Committee of the Tsuen Wan Provisional District Board on 9 July 1999. The Committee supported both mainlaying projects. Besides, we consulted the Tsuen Wan District Board on 4 March 1997; the Traffic and Transport Committee of the Tsuen Wan Provisional District Board on 16 January 1998 and its Environmental Affairs Committee on 19 January 1998 and 16 July 1998 regarding the roadworks projects. We have briefed the Committee members that there would be appropriate measures to maintain traffic and minimise inconvenience to the public. The Committees supported also these two roadworks projects.

Environmental Implications

14. The Director of Environmental Protection vetted the Preliminary Environmental Reviews (PERs) conducted by DWS on **224WF** and **238WF** in November 1995 and December 1997 respectively. The PERs concluded that the projects would have no long-term environmental impact. For short term

construction impact, appropriate pollution control measures[3] will be implemented to mitigate the impact. We have included the costs of these mitigation measures in the project estimates ($1.0 million in September 2000 prices for each project) and will incorporate these requirements into the works contracts for implementation.

15. At the planning and design stages of these two projects, we have taken due consideration in designing the levels and alignments of the proposed water mains to minimize the quantity of the construction and demolition (C&D) materials generation. Most of the C&D materials generated in the construction stage will be excavated materials that can be reused on-site as backfilling materials. Moreover, we will require the contractors to submit waste management plans (WMP) with appropriate mitigation measures, including the allocation of areas for waste segregation on-site to facilitate reuse/recycling of C&D materials, for approval. We will ensure that the day-to-day operations on site comply with the approved WMP. Besides, we will implement a trip-ticket system to control the proper disposal of C&D materials and shall record the reuse, recycling and disposal of C&D materials for monitoring purpose.

Land Acquisition

16. The proposed mainlaying works fall within road reserves and do not require any land acquisition.

Programme of Works

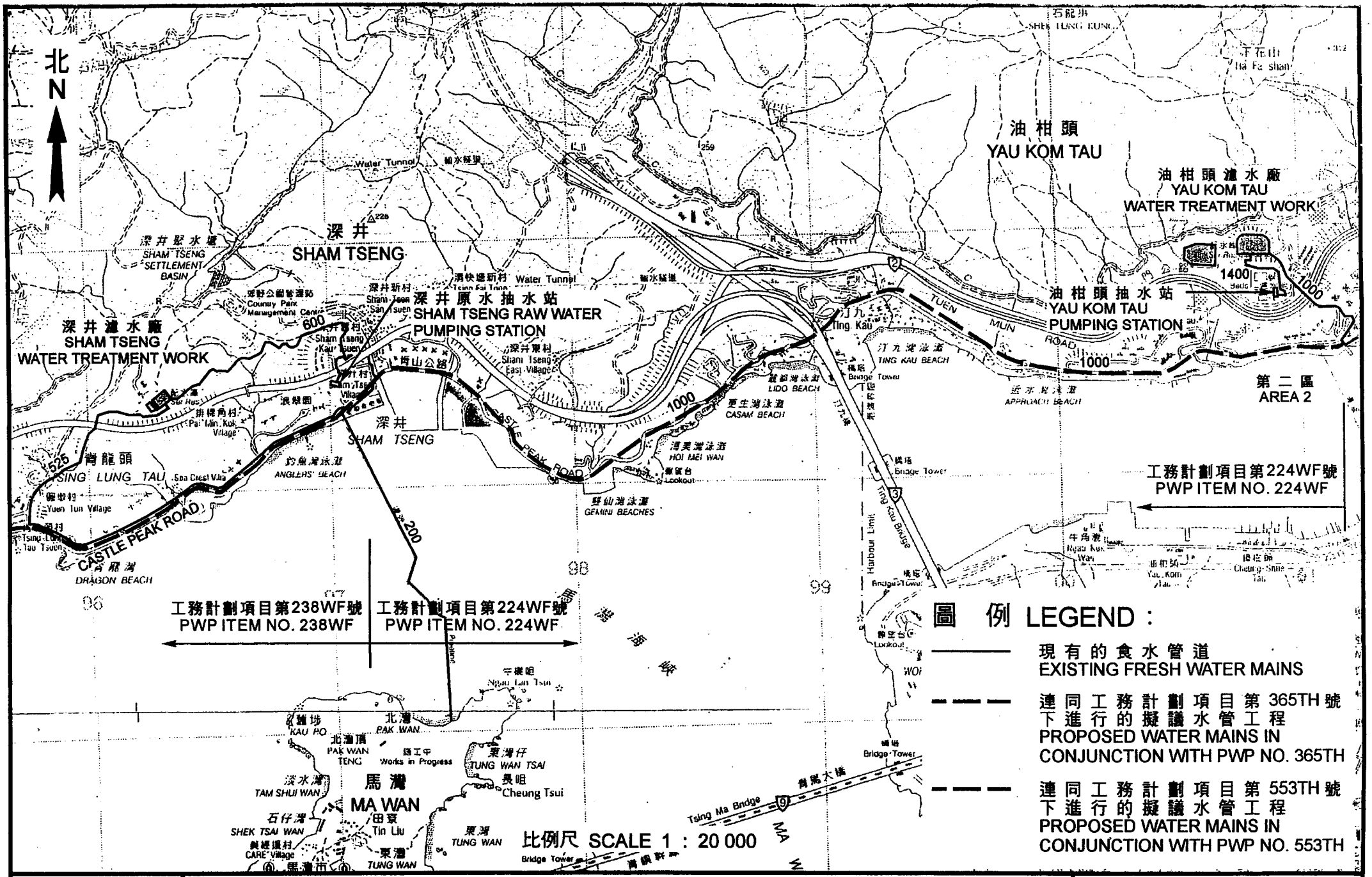
17. The PWSC paper for **224WF** and **238WF** has been scheduled for discussion at the PWSC meeting on 10 January 2001. To tie in with the roadworks programme under **365TH** and **553TH**, we plan to start the proposed mainlaying works in May 2001 for completion in May 2005 subject to funding approval.

---

[3] The pollution control measures include wheel washing facilities, de-silting traps, the use of silenced plant and other procedures recommended in the Environment Protection Department's Recommended Pollution Control Clauses.

18. DWS is continuing with the design work for the sections of water mains in stages under the remaining part of **238WF** with a target to start the construction works in June 2003 to tie in with the scheduled roadworks programme.

November 2000
Works Bureau



核准 APPROVED

總工程師/設計 CE / DES

23 / 10 / 2000

(甲級工程)
(CAT 'A' Submission)

工務計劃項目第224WF號 — 深井至油柑頭的水管敷設工程
PWP NEW ITEM NO. 224WF — MAINLAYING BETWEEN SHAM TSENG AND YAU KOM TAU

水務署
WATER SUPPLIES DEPT.

草圖編號 SKETCH NO. SK 62000 / 121

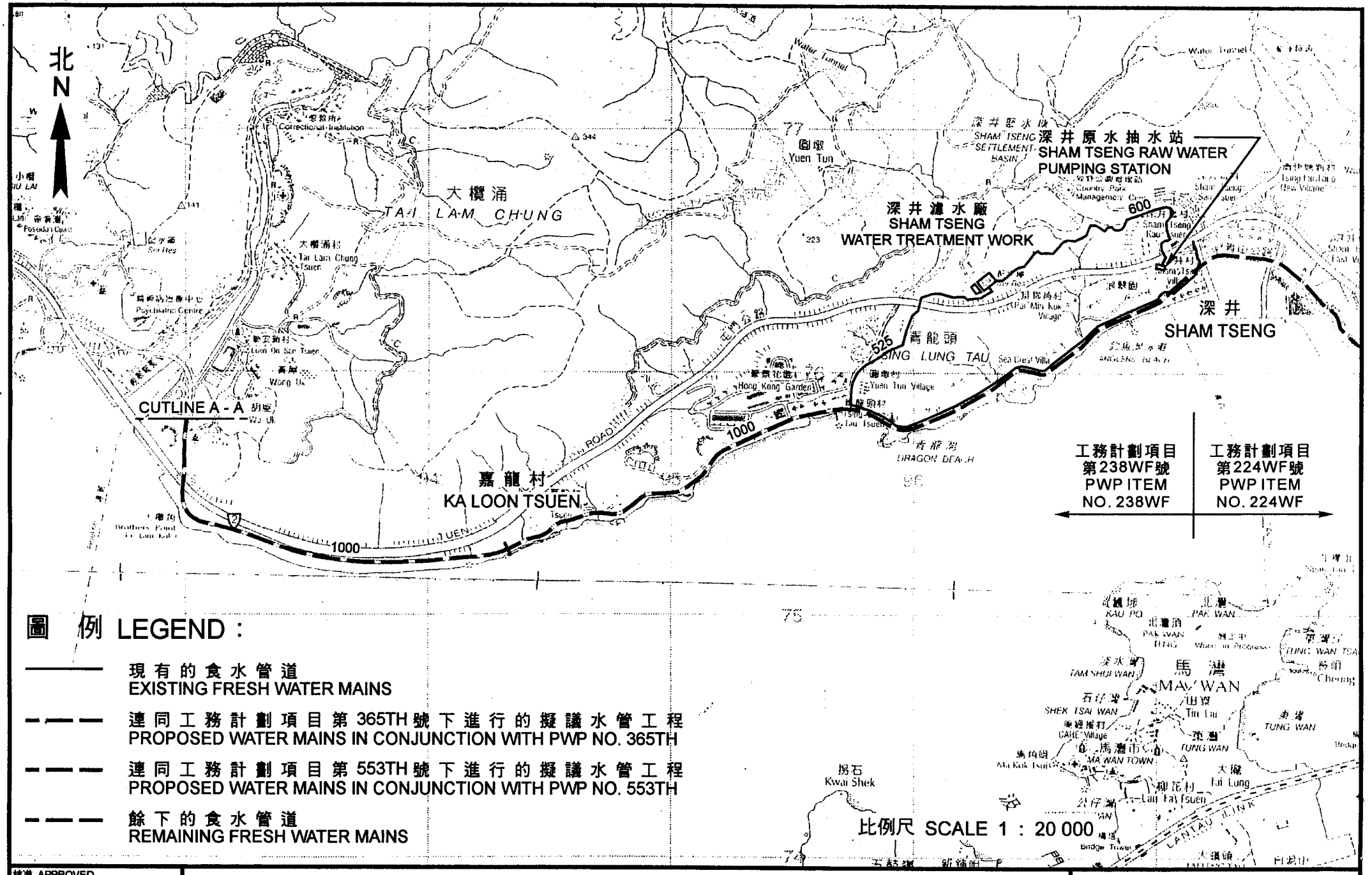


圖 例 LEGEND :

- 現有的食水管道
  EXISTING FRESH WATER MAINS
- 連同工務計劃項目第365TH號下進行的擬議水管工程
  PROPOSED WATER MAINS IN CONJUNCTION WITH PWP NO. 365TH
- 連同工務計劃項目第553TH號下進行的擬議水管工程
  PROPOSED WATER MAINS IN CONJUNCTION WITH PWP NO. 553TH
- 餘下的食水管道
  REMAINING FRESH WATER MAINS

核准 APPROVED
總工程師/設計 CE / DES

23 / 10 / 2000

(甲級工程)
(CAT 'A' Submission)

工務計劃項目第238WF號 — 深井至掃管灘的水管敷設工程
PWP NEW ITEM NO. 238WF — MAINLAYING BETWEEN SHAM TSENG AND SO KWUN TAN

(二之一)
(SHEET 1 OF 2)

水務署
WATER SUPPLIES DEPT.

草圖編號 SKETCH NO. SK 62000 / 122 / 001

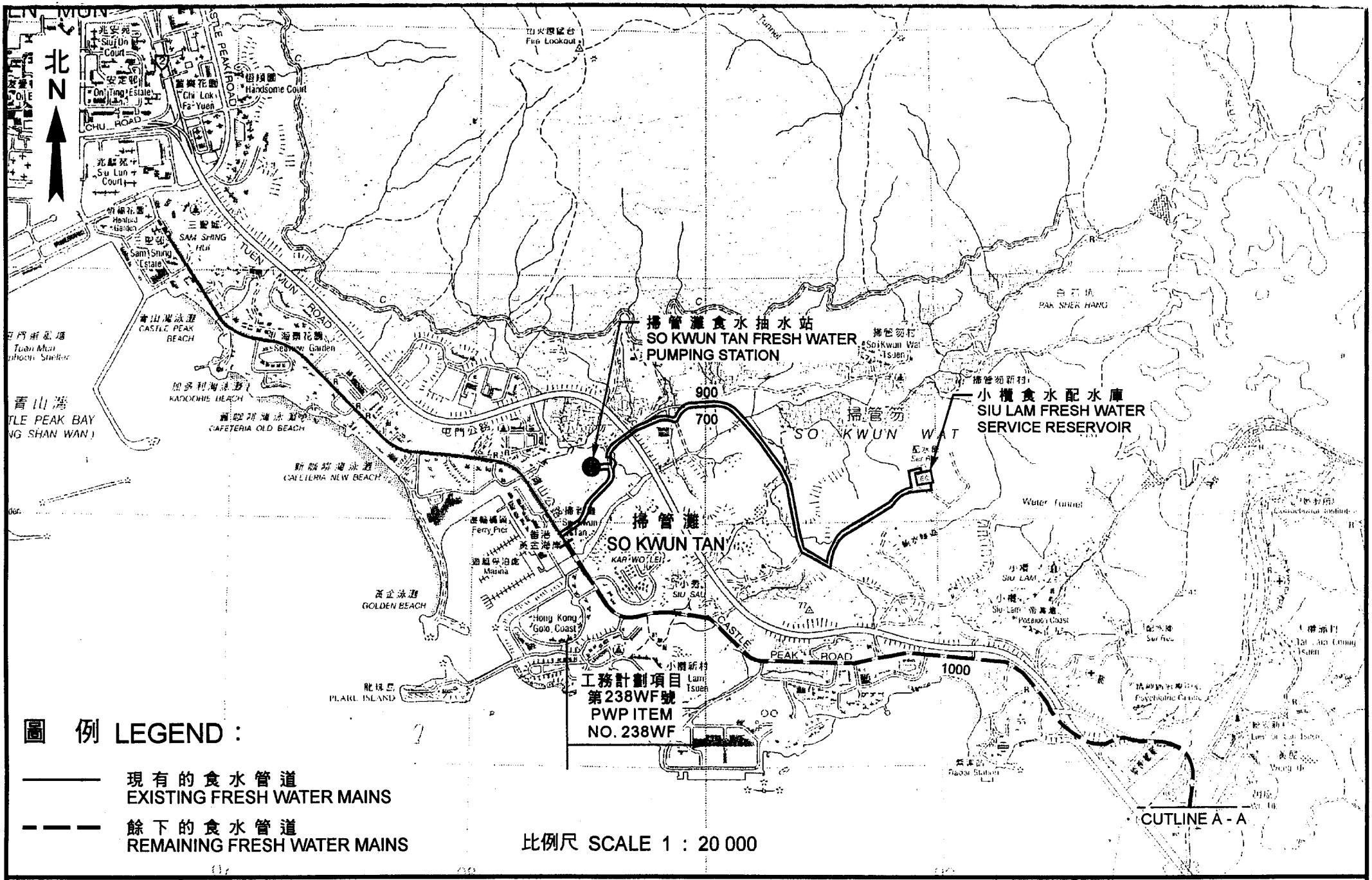


圖 例 LEGEND :

——— 現有的食水管道
EXISTING FRESH WATER MAINS

– – – 餘下的食水管道
REMAINING FRESH WATER MAINS

比例尺 SCALE 1 : 20 000

核准 APPROVED
總工程師/設計 CE / DES

23 / 10 / 2000

工務計劃項目第238WF號 — 深井至掃管灘的水管敷設工程
PWP NEW ITEM NO. 238WF — MAINLAYING BETWEEN SHAM TSENG AND SO KWUN TAN

（甲級工程）
(CAT 'A' Submission)

（二之二）
(SHEET 2 OF 2)

水務署
WATER SUPPLIES DEPT.

草圖編號
SKETCH NO. SK 62000 / 122 / 002

Information Paper for Legislative Council
Legco Panel on Planning, Lands and Works
Meeting on 4 December 2000

038WS - Extension of North Point Low Level Salt Water Supply System

Introduction

1. The Administration has scheduled to submit a Public Works Sub-Committee (PWSC) Paper for upgrading part of **038WS**, entitled "Extension of North Point low level salt water supply system" to Category A, for consideration at the PWSC Meeting on 10 January 2001. The purpose of this paper is to brief Panel Members of the proposed works.

2. By the year 2004, the existing water supply facilities serving the North Point and Quarry Bay low level areas will be unable to cope with the anticipated increase in salt water demand generated by extensive commercial and residential developments and re-developments in the areas.

3. In addition, the existing North Point low level supply system was designed in the 50's and has only a single-line configuration of the trunk main system. When the trunk main is isolated for operational reasons or maintenance, there will inevitably be major disruption to the salt water supply to the areas .

Scope of Works

4. The full scope of works under **038WS** comprises the uprating of the existing Quarry Bay salt water pumping station, the construction of the proposed Quarry Bay salt water service reservoir with a capacity of 2 650 cubic metres, laying of about 5 700 metres of water mains, ranging in size from 200 to 600 millimetres in diameter, from the existing Quarry Bay salt water pumping station to the proposed Quarry Bay salt water service reservoir and to the existing North Point salt water service reservoir, and laying of the associated distribution mains.

5. The part of **038WS** we now propose to upgrade to Category A comprises the laying of the water mains under **038WS**.

6. The attached sketch No. SK 62000/117A shows the scope of the proposed works.

Justification for Works

7. The existing North Point low level salt water supply system was commissioned in 1961. In view of the extensive developments and re-developments in North Point and Quarry Bay areas, we envisage that the population to be served by the system will increase from 191 800 in 1999 to 257 900 in 2004. Together with the demand arising from other commercial developments which are currently under planning, we expect the demand for salt water to rise from 28 500 cubic metres per day in 1999, to 36 900 cubic metres per day in 2004, and further to 37 200 cubic metres per day in 2008. The existing system will not be able to meet the demand by 2004.

8. The trunk main of the existing North Point low level salt water supply system has a single-line configuration. There is at present only one trunk main to convey water from the pumping station to the consumers. This single trunk main also delivers water from the pumping station to the service reservoir located at the end of the system. When the trunk main has to be isolated for operational reasons or for maintenance, such as in the event of main bursts or leaks, salt water supply to a large area served by the system is disrupted because no alternative route of salt water supply can be arranged. This causes considerable inconvenience to the public at large. In view of the above, we need to convert the existing single-line configuration to a more reliable ring-main system.

9. We intend to lay the required water main in the form of an additional trunk main to form a ring-main system with the existing trunk main. When completed, either trunk main of the ring-main system can deliver salt water from the pumping station to the consumers. In case one of the trunk main has to be isolated for operational reasons or for maintenance, we can still maintain salt water supply to the consumers via the other trunk main. The ring-main system can thus greatly improve the reliability of the salt water supply system. Similar ring-main systems are also being implemented in other salt water supply areas in the territory.

Consequences of Delay

10. If the proposed water mains cannot be completed in 2003, there will be insufficient salt water supply to the North Point and Quarry Bay areas in 2004.

Moreover, there will be major disruption to the salt water supply system when the trunk main is isolated.

Cost

11. We estimate the capital cost of the proposed works to be $87.9 million in money-of-the-day (MOD) prices made up as follows -

			$ million	
(a)	Pipe materials		7.6	
(b)	Mainlaying		41.4	
(c)	Pipe jacking		8.8	
(d)	Consultants' fees		17.1	
	(i) Construction stage	0.6		
	(ii) Resident site staff costs	16.5		
(e)	Environmental mitigation measures		0.5	
(f)	Contingencies		7.5	
		Sub-total	82.9	(at September 2000 prices)
(g)	Provision for price adjustment		5.0	
		Total	87.9	(in MOD prices)

12. We will invite tenders for the works under a standard remeasurement contract because the quantities of the mainlaying works may vary with the actual ground conditions. We will allow provision for price adjustment in the contract as the construction period will exceed 21 months.

Public Consultation

13. We consulted the Works and Development Committee (WDC) of the Eastern District Council on 5 October 2000. The WDC Members were briefed of the proposed works and the relevant traffic arrangements during the construction phase to alleviate the traffic impact identified in the Traffic Impact Assessment (TIA) Study. Based on the findings of the TIA Study, it is revealed that the existing road junctions, road link and pedestrian footpath will have sufficient capacity to accommodate the traffic demand and no major adverse traffic impact will be induced during construction.

14. To further monitor the situation during the construction stage, we will join hands with the District Council (DC) Members through an established Working Group comprising DC Members and representatives from Transport Department, Drainage Services Department and Water Supplies Department to oversee the traffic matters and fine-tune the traffic arrangements as necessary. The WDC supported the project.

Environmental Implications

15. The Director of Water Supplies (DWS) completed a Preliminary Environmental Review (PER) of the project in September 1996. The PER concluded that the project would not give rise to environmental impacts that exceed established criteria. The Director of Environmental Protection vetted the PER and agreed that an Environmental Impact Assessment would not be necessary. For short term construction impact, appropriate environmental pollution control measures[1] would be implemented to mitigate the impacts. We have included in the project estimate of **038WS** the cost of implementing these mitigation measures ($0.5 million in September 2000 prices) and will incorporate these requirements into the works contracts for implementation.

---

[1] The pollution control measures include wheel washing facilities, de-silting traps, the use of silenced plant and other procedures as recommended in Environmental Protection Department's Recommended Pollution Control Clauses.

16. We have considered in the planning and design stages to reduce the generation of construction and demolition material (C&DM) as far as possible. We will require the contractor to implement necessary measures to minimize the generation of C&DM and to re-use and re-cycle C&DM as far as practicable. We will control the disposal of public fill and C&D waste to designated public filling facility and landfills respectively through a trip ticket system. We will record the disposal, re-use and re-cycling of C&DM for monitoring purposes.

Land Acquisition

17. The proposed mainlaying works do not require any land acquisition.

Programme of Works

18. The PWSC paper for **038WS** has been scheduled for discussion at the PWSC meeting on 10 January 2001. We plan to start the proposed mainlaying works in June 2001 for completion in June 2003.

19. DWS is continuing with the design of the propsoed Quarry Bay salt water service reservoir under the remaining part of **038WS** and plans to start the construction works in mid 2002 for completion in 2004. The uprating of the Quarry Bay salt water pumping station will be completed in 2002.

Works Bureau
November 2000

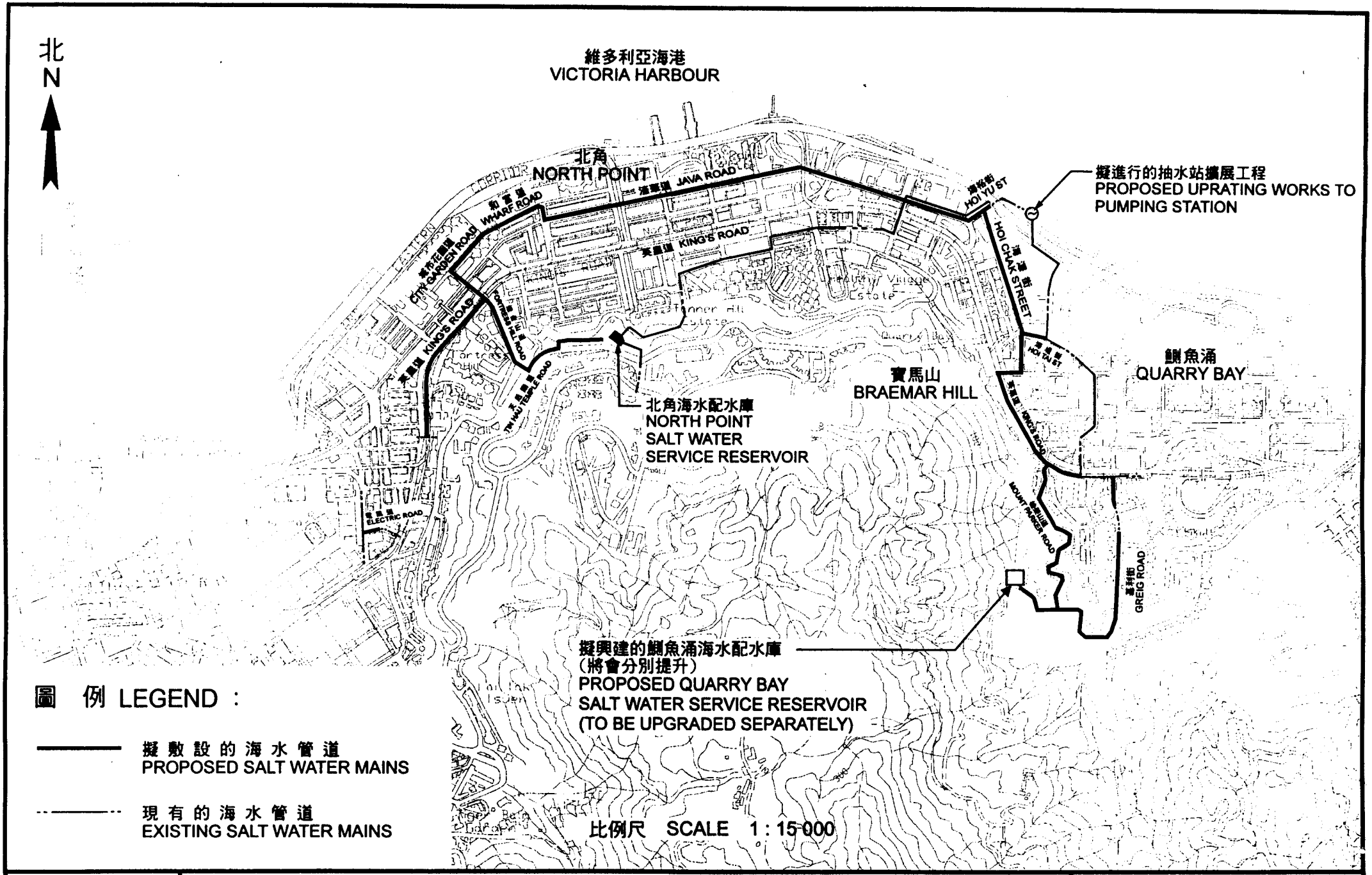


圖 例 LEGEND :

擬敷設的海水管道
PROPOSED SALT WATER MAINS

現有的海水管道
EXISTING SALT WATER MAINS

核准 APPROVED
總工程師/關閉工程管理 CE/CM
23 / 11 / 2000

擴建北角下海水供應系統
水管敷設工程

MAINLAYING FOR EXTENSION OF NORTH POINT
LOW LEVEL SALT WATER SUPPLY SYSTEM

水務署
WATER SUPPLIES DEPT.

草圖編號 SKETCH NO. SK 62000 / 117A