For discussion **PWSC(2004-05)52**
on 26 January 2005

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 711 – HOUSING
Water Supplies – Combined fresh/salt water supplies
126WC – Water supply to housing developments at Anderson Road, near Choi Wan Road and Jordan Valley

Members are invited to recommend to Finance Committee –

(a) the upgrading of part of **126WC**, entitled "Remaining waterworks for development near Choi Wan Road and Jordan Valley", to Category A at an estimated cost of $137.1 million in money-of-the-day prices; and

(b) the retention of the remainder of **126WC,** retitled as "Water supply to housing development at Anderson Road", in Category B.

PROBLEM

The proposed water supply system serving the development near Choi Wan Road and Jordan Valley is only partly completed. We need to complete the remaining waterworks to meet the anticipated water demand.

/PROPOSAL .....

PROPOSAL

2. The Director of Water Supplies, with the support of the Secretary for Housing, Planning and Lands, proposes to upgrade part of **126WC** to Category A at an estimated cost of $137.1 million in money-of-the-day (MOD) prices for completing the fresh and flushing water supply system for the development near Choi Wan Road and Jordan Valley.

PROJECT SCOPE AND NATURE

3. The scope of the proposed works for upgrading to Category A comprises –

(a) construction of a fresh water service reservoir with a capacity of 8 700 cubic metres (m^3);

(b) construction of a salt water service reservoir with a capacity of 1 900 m^3;

(c) construction of a salt water pumping station and the associated inlet and outlet salt water mains with an output of 4 000 m^3 per day;

(d) uprating of the existing Cha Kwo Ling Salt Water Pumping Station to increase the output from 104 600 m^3 per day to 121 000 m^3 per day; and

(e) laying of about 600 metres long fresh water mains of diameter 600 millimetres.

Site plans showing the proposed works are at Enclosure 1. Perspective diagrams of the proposed works are shown at Enclosure 2.

4. The remainder of **126WC**, which is to cope with the development at Anderson Road, will be retained in Category B.

/**JUSTIFICATIONS** .....

JUSTIFICATIONS

5. We are responsible for implementing the site formation and the associated infrastructure under **564CL** "Development near Choi Wan Road and Jordan Valley". The site formation for the development has commenced in November 2001 and the development will provide about 11 900 housing flats for a population of 37 200, with first population intake of about 11 200 scheduled in 2008.

6. **126WC** aims at providing water supply to both developments near Choi Wan Road and Jordan Valley and that at Anderson Road. To meet the demand for water arising from the proposed development near Choi Wan Road and Jordan Valley, we upgraded part of the project to Category A as **127WC** "Mainlaying within development near Choi Wan Road and Jordan Valley" in June 2001 and commenced the works in November 2001. The project comprises laying of about 5.7 kilometres of fresh water mains of diameters ranging from 150 millimetres to 600 millimetres and about 5 kilometres of salt water mains of diameters ranging from 100 millimetres to 300 millimetres.

7. The part of the works under **126WC** we now propose to upgrade is for construction of the remaining water supply facilities to complete the water supply system for serving the development near Choi Wan Road and Jordan Valley. We have to commence the construction of the proposed works in June 2005 in order to meet the water demand arising from the scheduled population intake in January 2008.

FINANCIAL IMPLICATIONS

8. We estimate the capital cost of the proposed works to be $137.1 million in MOD prices (see paragraph 9 below), made up as follows –

		$ million
(a)	Fresh water service reservoir	33.9
(b)	Salt water service reservoir	12.7
(c)	Salt water pumping station	21.5
(d)	Uprating of Cha Kwo Ling Salt Water Pumping Station	32.5

/(e) .....

			$ million	
(e)	Mainlaying		6.4	
(f)	Environmental mitigation measures		2.0	
(g)	Consultants' fees		16.5	
	(i) contract administration	0.8		
	(ii) site supervision	15.7		
(h)	Contingencies		12.5	
		Sub-total	138.0	(in September 2004 prices)
(i)	Provision for price adjustment		(0.9)	
		Total	137.1	(in MOD prices)

Owing to insufficient in-house staff resources, we propose to engage consultants to carry out the construction supervision. A breakdown of the estimates for consultants' fees by man-months is at Enclosure 3.

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

Year	**$ million (Sept 2004)**	**Price adjustment factor**	**$ million (MOD)**
2005 – 2006	20.3	0.99000	20.1
2006 – 2007	44.2	0.98753	43.6
2007 – 2008	45.2	0.99123	44.8
2008 – 2009	13.9	0.99990	13.9

/2009 – 2010 .....

Year	$ million (Sept 2004)	Price adjustment factor	$ million (MOD)
2009 – 2010	10.0	1.01515	10.2
2010 - 2011	4.4	1.03241	4.5
	138.0		137.1

10. 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 2005 to 2011. We will tender the works under a lump-sum contract. We will provide for price adjustment in the contract because the contract period will exceed 21 months.

11. We estimate the annual recurrent expenditure arising from the proposed works to be about $2.3 million.

12. The proposed works by itself will lead to an increase in production cost of water by 0.09% in real terms by 2011[1].

PUBLIC CONSULTATION

13. We consulted Kwun Tong District Council on the proposed works in November 2004. The District Council supported the proposed works.

14. We consulted the Legislative Council Panel on Planning, Lands and Works on the proposed works through an information paper on 7 January 2005. Members did not raise any objection to the proposed works.

/ENVIRONMENTAL .....

1 The increase in production cost of water is calculated on the assumption that the water demand remains static during the period from 2005 to 2011 and at the present price level.

ENVIRONMENTAL IMPLICATIONS

15. We completed a Preliminary Environmental Review (PER) for **126WC** in February 2000. The PER concluded that the project would not have long term adverse environmental impacts. The Director of Environmental Protection has agreed that an Environmental Impact Assessment will not be required. For short term environmental impacts during construction, we will control noise, dust and site run-off within established standards and guidelines through implementation of environmental mitigation measures, such as frequent watering of the site, provision of wheel washing facilities to reduce emission of fugitive dust and the use of silenced construction plant to reduce noise generation. The implementation of noise control measures into the pumping station design such as provision of acoustic louvres, silencers, dampers and noise absorptive lining and limiting the sound power level of the equipment, will reduce the operational noise impact to within acceptable level. We have included $2.0 million in the project estimate for implementation of these mitigation measures.

16. We will 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 construction and demolition (C&D) materials. We will ensure that the day-to-day operations on site comply with the approved WMP. To further minimise C&D materials, we will encourage the contractor to use non-timber formwork and recyclable material for temporary works. We will require the contractor to reuse the excavated material as filling material on site or on other construction sites as far as possible to minimise the disposal of public fill. We will control the disposal of public fill and C&D waste to designated public filling facilities and landfills respectively through a trip-ticket system. We will require the contractor to separate reusable materials 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. At the planning and design stages, we have considered measures to reduce C&D materials. We have optimised the design of site levels and layouts of the proposed works and will reuse suitable excavated material for filling within site to minimise off-site disposal. We estimate that the proposed works will generate about 7 800 m^3 of C&D materials. Of these, we will reuse about 2 200 m^3 (28.2%) on site, 5 550 m^3 (71.2%) as fill in public filling areas[2] and

/dispose .....

2 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 and Development.

dispose of 50 m^3 (0.6%) at landfills. The notional cost of accommodating C&D waste at landfill sites is estimated to be $6,250 for these works (based on a notional[3] unit cost of $125/$m^3$).

LAND ACQUISITION

18. The proposed works do not require any land acquisition.

BACKGROUND INFORMATION

19. We upgraded **126WC** to Category B in September 2000.

20. We engaged consultants to carry out the detailed design of the water mains within the development near Choi Wan Road and Jordan Valley at an estimated cost of $1.4 million under the block allocation **Subhead B100HX** "Minor housing development related works, studies and investigations for items in Category D of the Public Works Programme". The consultants completed the detailed design in 2001. We upgraded part of the mainlaying works under **126WC** to Category A as **127WC** in June 2001. Such works already started in November 2001 and will be completed in mid of 2006 as part of the site formation project under **564CL**.

21. We also engaged consultants to carry out the detailed design of the remaining waterworks described in paragraph 3 above for the development near Choi Wan Road and Jordan Valley at an estimated cost of $1.8 million under **Subhead B100HX** "Minor housing development related works, studies and investigations for items in Category D of the Public Works Programme". The consultants completed the detailed design in December 2004. We aim to start the construction in June 2005 for completion in January 2008.

22. The remainder of **126WC** is for water supply to the development at Anderson Road, which is subject to further review.

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3 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 $90/$m^3$), 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.

23. The proposed works will involve felling of one tree. It is not an important tree[4]. We will incorporate planting proposals as part of the project, including estimated quantities of 50 trees, 760 shrubs and 2 700 square metres of grassed area.

24. We estimate that the proposed works will create about 100 jobs (80 for labourers and another 20 for professional/technical staff) providing a total employment of 2 700 man-months.

Housing, Planning and Lands Bureau
January 2005

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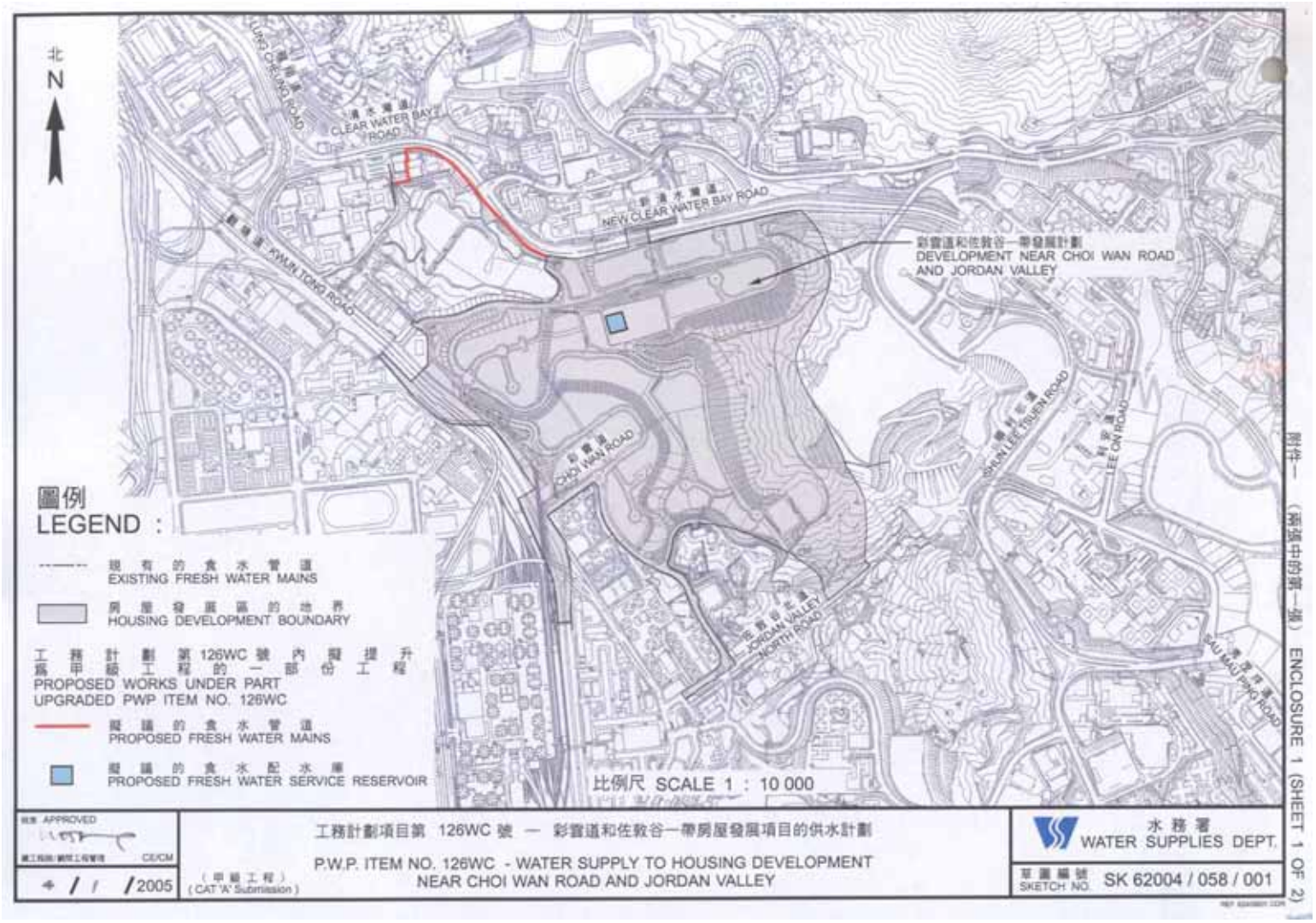
4 Important trees include trees on the Register of Old and Valuable Trees, and any other trees which meet one or more of the following criteria:
(a) trees over 100 years old;
(b) trees of cultural, historical or memorable significance;
(c) trees of precious or rare species;
(d) trees of outstanding form; or
(e) trees with trunk diameter exceeding one metre (measured at one metre above ground level).



批准 APPROVED
總工程師/屬問工程管理 CE/CM
4 / / /2005

工務計劃項目第 126WC 號 — 彩雲道和佐敦谷一帶房屋發展項目的供水計劃

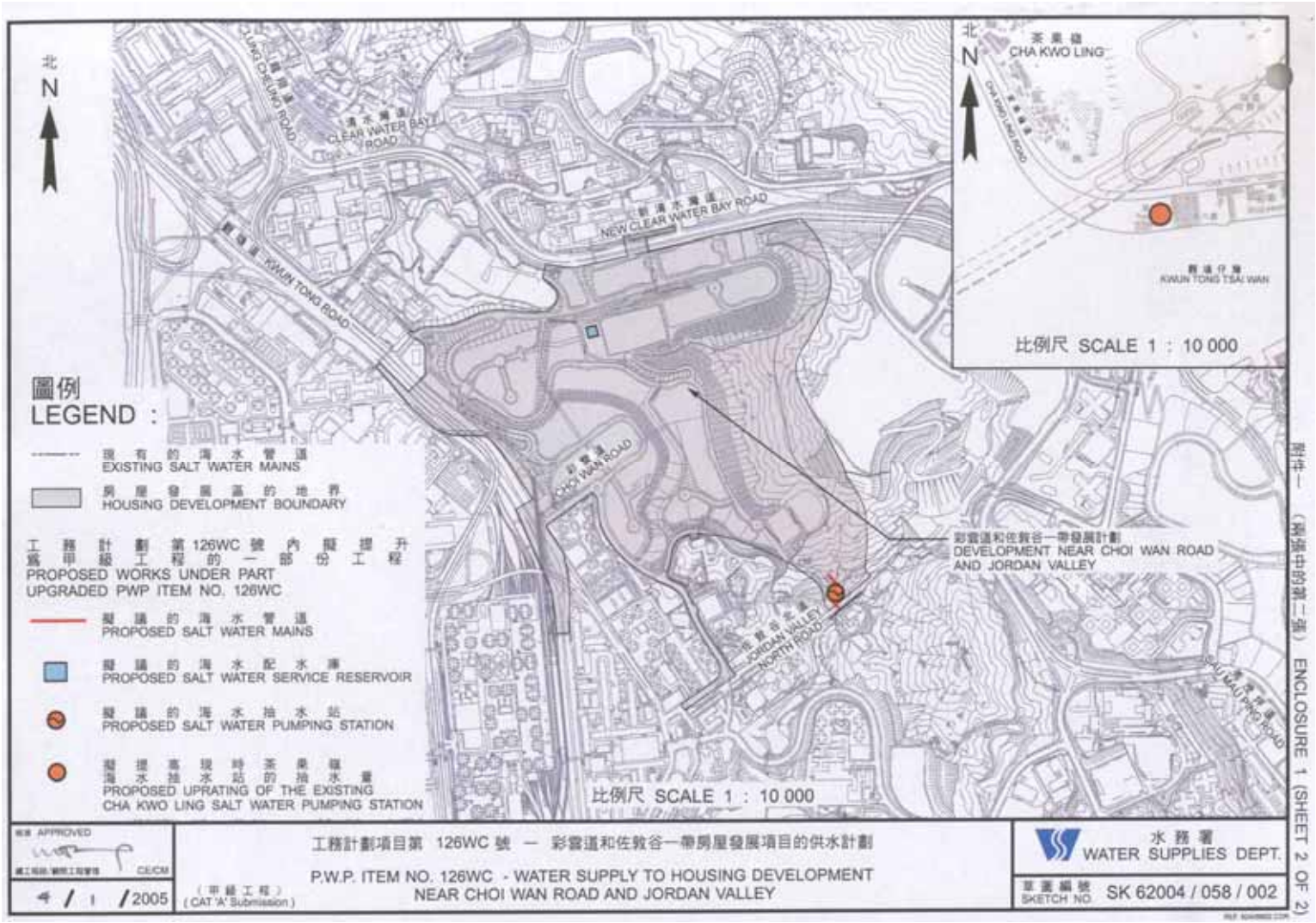
P.W.P. ITEM NO. 126WC - WATER SUPPLY TO HOUSING DEVELOPMENT NEAR CHOI WAN ROAD AND JORDAN VALLEY

（甲級工程）
(CAT 'A' Submission)

水務署
WATER SUPPLIES DEPT.

草圖編號 SKETCH NO. SK 62004 / 058 / 001

附件一（兩張中的第一張） ENCLOSURE 1 (SHEET 1 OF 2)



核准 APPROVED
CE/CM
4 / 1 / 2005

工務計劃項目第 126WC 號 — 彩雲道和佐敦谷一帶房屋發展項目的供水計劃

P.W.P. ITEM NO. 126WC - WATER SUPPLY TO HOUSING DEVELOPMENT NEAR CHOI WAN ROAD AND JORDAN VALLEY

（甲級工程）
(CAT 'A' Submission)

水務署
WATER SUPPLIES DEPT.

草圖編號 SKETCH NO. SK 62004 / 058 / 002

附件一（兩張中的第二張） ENCLOSURE 1 (SHEET 2 OF 2)

遠觀圖
PERSPECTIVE VIEW

核准 APPROVED 總工程師/屬區工程管理 CE/CM /P/ \ /2005	工務計劃項目第126WC 號 - 彩雲道和佐敦谷一帶房屋發展項目的供水計劃 P.W.P. ITEM NO. 126WC - WATER SUPPLY TO HOUSING DEVELOPMENT NEAR CHOI WAN ROAD AND JORDAN VALLEY (甲組工程) (CAT 'A' Submission)	水務署 WATER SUPPLIES DEPT. 草圖編號 SKETCH NO. SK 62004 / 058 / 003

附件二 （兩張中的第一張）ENCLOSURE 2 (SHEET 1 OF 2)

遠觀圖
PERSPECTIVE VIEW

批准 APPROVED CE/CM	工務計劃項目第126WC 號 – 彩雲道和佐敦谷一帶房屋發展項目的供水計劃	水務署 WATER SUPPLIES DEPT.
18 / 1 /2005	P.W.P. ITEM NO. 126WC - WATER SUPPLY TO HOUSING DEVELOPMENT NEAR CHOI WAN ROAD AND JORDAN VALLEY (甲級工程) (CAT'A' Submission)	草圖編號 SKETCH NO. SK 62004 / 058 /004

附件二 （兩張中的第二張） ENCLOSURE 2 (SHEET 2 OF 2)

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126WC - Water supply to housing developments at Anderson Road, near Choi Wan Road and Jordan Valley

Breakdown of estimates for consultants' fees

Consultants' staff costs			**Estimated man-months**	**Average MPS* salary point**	**Multiplier** (Note 1)	**Estimated Fee ($ million)**
(a)	Contract administration (Note 2)	Professional	-	-	-	0.6
		Technical	-	-	-	0.2
(b)	Site supervision by resident site staff of the consultants	Professional	92.2	38	1.6	8.0
		Technical	267.2	14	1.6	7.7
					Total	16.5

* MPS = Master Pay Scale

Notes

1. A multiplier factor of 1.6 is applied to the average MPS point to arrive at the cost of resident site staff supplied by the consultants. (As at 1 January 2005, MPS pt. 38 = $54,255 per month and MPS pt. 14 = $18,010 per month).

2. The consultants' fees for contract administration is estimated in accordance with the existing Agreement No. CE61/2002(WS) "Water supply to housing development near Choi Wan Road and Jordan Valley – design and construction". The construction phase of the assignment will only be executed subject to Finance Committee's approval to upgrade the proposed part of **126WC** to Category A.