

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 709 – WATERWORKS

Water Supplies – Salt water supplies

38WS – Extension of North Point low level salt water supply system

Members are invited to recommend to Finance Committee the upgrading of the remainder of **38WS** to Category A at an estimated cost of \$27.7 million in money-of-the-day prices.

PROBLEM

The existing salt water service reservoir serving the low level areas of North Point and Quarry Bay is unable to cope with the total salt water demand for flushing in the areas.

PROPOSAL

2. The Director of Water Supplies, with the support of the Secretary for the Environment, Transport and Works, proposes to upgrade the remainder of **38WS** to Category A at an estimated cost of \$27.7 million in money-of-the-day (MOD) prices for the construction of the Quarry Bay salt water service reservoir.

PROJECT SCOPE AND NATURE

3. The scope of the proposed works comprises the construction of the Quarry Bay salt water service reservoir with a capacity of 2 650 cubic metres (m³).

4. We plan to start construction in May 2004 for completion by October 2006. A site plan and a perspective diagram showing the proposed works are at Enclosures 1 and 2.

JUSTIFICATION

5. The mean daily demand for flushing water in the low level areas of North Point and Quarry Bay will increase from about 28 000 m³ per day at present to 30 600 m³ per day in 2010 due to the completion of more commercial buildings in the area. As the existing North Point salt water service reservoir can only cater for a mean daily demand of 21 000 m³ per day for flushing water, fresh water is being supplied for flushing in some areas as a temporary measure. In order to conserve fresh water and to meet the long term need of flushing water, it is necessary to construct the Quarry Bay salt water service reservoir, so that the whole of the low level areas in North Point and Quarry Bay can be supplied with salt water for flushing. The capacity¹ of Quarry Bay salt water service reservoir of 2 650 m³ is adequate to meet the shortfall of 9 600 m³ per day in the supply system since the service reservoir will be replenished frequently.

FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the proposed works to be \$27.7 million in MOD prices (see paragraph 7 below), made up as follows –

	\$ million	
(a) Salt water service reservoir	24.7	
(b) Electrical and mechanical works	1.0	
(c) Environmental mitigation measures	0.3	
(d) Contingencies	2.5	
	Sub-total	28.5 (in September 2003 prices)
(e) Provision for price adjustment	(0.8)	
	Total	27.7 (in MOD prices)

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¹ Planned capacity of service reservoir = 25% of requirement of salt water + contingency

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

Year	\$ million (Sept 2003)	Price Adjustment Factor	\$ million (MOD)
2004 – 2005	3.3	0.98225	3.2
2005 – 2006	17.0	0.97734	16.6
2006 – 2007	5.8	0.97245	5.6
2007 – 2008	1.7	0.96759	1.6
2008 – 2009	0.7	0.96638	0.7
	28.5		27.7

8. We have derived the MOD estimates on the basis of the Government's latest forecast of trend labour and construction prices for the period 2004 to 2009. We will tender the works on a remeasurement basis because there will be extensive underground works, the quantities of which are subject to variation during construction to suit the actual site conditions. Since the contract period will exceed 21 months, we will provide for price adjustments in the contract.

9. We estimate the annual recurrent expenditure arising from the proposed works to be \$0.08 million.

10. This project by itself will lead to an increase in production cost of water by 0.01% in real terms by 2009².

PUBLIC CONSULTATION

11. We consulted the Community Building and Services Committee, Environment and Hygiene Committee, Traffic and Transport Committee, and

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² The increase in production cost of water is calculated on the assumption that the demand remains static during the period from 2003 to 2009 and the amount of government subsidy to the waterworks operations is to be contained at the present price level.

Works and Development Committee of the Eastern District Council on 26 October 2000, 20 December 2001 and 10 July 2003. The Committees supported the proposed works.

ENVIRONMENTAL IMPLICATIONS

12. We completed a Preliminary Environmental Review (PER) for 38WS in September 1996. The PER concluded that the project would not have any long-term adverse environmental impact. The Director of Environmental Protection agreed that an Environmental Impact Assessment would not be required. For short term impact during the construction stage, standard environmental pollution control measures³ would be sufficient to mitigate the impact. We have included in the project estimate the cost of implementing these mitigation measures (\$0.3 million in September 2003 price) and will incorporate these requirements into the works contract.

13. At the planning and design stages of this project, we have taken due consideration in designing the layout of the proposed service reservoir to minimise the generation of construction and demolition (C&D) materials. To further minimise the generation of C&D materials, we will encourage the contractor to use steel instead of timber for formwork and temporary works. We estimate that about 14 850 m³ of C&D materials will be generated by the project. Of these, about 1 500 m³ (10.1%) will be reused on site, 13 000 m³ (87.5%) will be reused as fill in public filling areas⁴ and 350 m³ (2.4%) will be disposed of at landfills. The notional cost of accommodating C&D waste at landfill sites is estimated to be \$43,750 for this project (based on a notional unit cost⁵ of \$125/m³).

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

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. We will require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures like the allocation of areas for waste segregation on site to facilitate reuse or recycling of C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMP. 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

15. The proposed works do not require land acquisition.

BACKGROUND INFORMATION

16. In August 1997, we upgraded **38WS** to Category B.

17. In February 2001, we upgraded part of **38WS** to Category A as **41WS** “Mainlaying for extension of North Point low level salt water supply system” at an estimated cost of \$86.9 million. The mainlaying works will be substantially completed in early 2004.

18. We have substantially completed the detailed design for the proposed works using in-house resources.

19. The proposed construction of the service reservoir will involve felling of 76 trees. All trees to be removed are not important trees⁶. We will incorporate planting proposals as part of the project, including estimated quantities of 270 trees, 294 shrubs and 1 000 square metres of grassed area.

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⁶ 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).

20. We estimate that the proposed works will create 27 new jobs comprising four professional/technical staff and 23 labourers, totalling 590 man-months.

Environment, Transport and Works Bureau
November 2003



擬興建的鯽魚涌海水配水庫
34米(長) x 19米(闊) x 6.5米(高)
PROPOSED QUARRY BAY
SALT WATER SERVICE RESERVOIR
34m(L) x 19m(W) x 6.5m(H)

擬保留的車房(二級歷史建築物
"林邊屋"俗稱"紅屋"的一部份)
GARAGE TO BE RETAINED (PART OF
THE "WOODSIDE" GRADE II HISTORICAL
BUILDING)

遠觀圖
PERSPECTIVE VIEW


核准 APPROVED

 總工程師/設計 CE / Des

15/10/2003

(甲級工程)
(CAT 'A' Submission)

工務計劃項目第38WS號 — 北角低地海水供應系統擴建工程
P.W.P. ITEM NO. 38WS — EXTENSION OF NORTH POINT LOW LEVEL
SALT WATER SUPPLY SYSTEM

 水務署
WATER SUPPLIES DEPT.

草圖編號 SK 62003 / 069
SKETCH NO.

附件 2 ENCLOSURE 2

REF: 62003-069.CDR



核准 APPROVED

 總工程師/設計 CE Des
 15/10/2003

工務計劃項目第38WS號 — 北角低地海水供應系統擴建工程
 P.W.P. ITEM NO. 38WS — EXTENSION OF NORTH POINT LOW LEVEL SALT WATER SUPPLY SYSTEM

(甲級工程)
 (CAT 'A' Submission)

 水務署
 WATER SUPPLIES DEPT.

草圖編號
 SKETCH NO. SK 62003 / 048

附件 1
 ENCLOSURE 1