

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 709 – WATERWORKS

Water Supplies – Combined fresh/salt water supplies

53WC – Improvement of water supply to Western, Central and Wan Chai areas and extension of water supply to Central and Wan Chai reclamation

Members are invited to recommend to Finance Committee –

- (a) the upgrading of part of **53WC**, entitled “Water supply to Central reclamation phase III”, to Category A at an estimated cost of \$23.6 million in money-of-the-day prices; and
- (b) the retention of the remainder of **53WC**, retitled “Water supply to Wan Chai development phase II”, in Category B.

PROBLEM

There is no water supply to serve the planned developments¹ in Central reclamation phase III (CRIII) and Wan Chai development phase II (WDII).

/PROPOSAL

¹ The planned developments include commercial and government/institution/community developments.

PROPOSAL

2. The Director of Water Supplies (DWS), with the support of the Secretary for Works, proposes to upgrade part of **53WC** to Category A at an estimated cost of \$23.6 million in money-of-the-day (MOD) prices for the extension of fresh and salt water supplies to the planned developments in CRIII.

PROJECT SCOPE AND NATURE

3. The scope of **53WC** comprises the laying of water mains to cope with the planned developments in CRIII and WDII.

4. The part of **53WC** we now propose to upgrade to Category A comprises the laying of about 2.8 kilometres (km) of fresh water mains ranging from 150 to 200 millimetres (mm) in diameter and about 1.2 km of salt water mains of 150 mm in diameter in CRIII. The proposed mainlaying works also cover hydraulic pressure testing, sterilisation and connection to existing water mains.

5. We plan to commence construction of the water mains in December 2002 for substantial completion in June 2007 to tie in with the construction period of the reclamation and roadworks for CRIII. Connection to existing water mains will be completed by the end of 2007. A site plan showing the proposed works is at Enclosure 1.

JUSTIFICATION

6. The reclamation and roadworks in CRIII are included under **343CL**² “Central reclamation phase III – engineering works” in Category B. The site investigation and detailed design work are being carried out under **671CL** “Central reclamation phase III – consultants' fees and site investigation”. CRIII will provide land for the construction of the Central – Wan Chai Bypass and other infrastructural facilities.

/7.

² A related paper, PWSC(2002-03)41, for the upgrading of **343CL** under **Head 707** to Category A is submitted for Members' consideration at this meeting.

7. We project that the commercial and other developments on CRIII will generate a daily fresh water demand of about 1 500 cubic metres (m³) and a daily salt water demand of about 2 900 m³. To cater for these new demands, we need to extend the existing water supply distribution system to the reclamation area as described in paragraph 4 above.

8. The Director of Territory Development (DTD) plans to commence the reclamation and roadworks in December 2002 for completion in June 2007. As the proposed mainlaying works fall within the boundaries of CRIII, they will be entrusted to DTD forming part of the reclamation and roadworks contract under **343CL**. This would avoid interface problems arising from two contractors working on the same site.

FINANCIAL IMPLICATIONS

9. We estimate the capital cost of the proposed works to be \$23.6 million in MOD prices (see paragraph 10 below), made up as follows –

	\$ million	
(a) Laying of fresh and salt water mains by conventional method	20.6	
(b) Consultants' fees for	1.0	
(i) contract administration	0.2	
(ii) site supervision	0.8	
(c) Environmental mitigation measures	0.3	
(d) Contingencies	2.2	
	Sub-total	24.1 (in September 2001 prices)
(e) Provision for price adjustment	(0.5)	
	Total	23.6 (in MOD prices)

A breakdown of the estimates for the consultants' fees by man-months is at Enclosure 2.

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

Year	\$ million (Sept 2001)	Price adjustment factor	\$ million (MOD)
2002 - 2003	0.1	0.98625	0.1
2003 - 2004	3.3	0.98378	3.2
2004 - 2005	4.8	0.98378	4.7
2005 - 2006	5.5	0.98378	5.4
2006 - 2007	5.7	0.98378	5.6
2007 - 2008	4.7	0.98378	4.6
	24.1		23.6

11. We have derived the MOD estimates on the basis of the Government's latest forecast of trend labour and construction prices for the period 2002 to 2007. We will incorporate the mainlaying works into DTD's reclamation and roadworks contract on a remeasurement basis. Since the contract period will exceed 21 months, we will provide for price adjustments in the contract.

12. We estimate the annual recurrent expenditure arising from this project to be about \$54,000.

13. This project by itself will lead to an increase in water charges by 0.01% in real terms by 2007³.

/PUBLIC

³ 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

14. DTD consulted the Central and Western District Council on 16 March 2000 and Wan Chai District Council on 21 March 2000 on the proposed reclamation and roadworks in CRIII, including the proposed mainlaying works as part of the essential service provisions for CRIII. The Councils raised no objection to the proposed works.

ENVIRONMENTAL IMPLICATIONS

15. DTD completed an Environmental Impact Assessment (EIA) report for CRIII in June 2001 and concluded that the project would have no long-term environmental impacts. The EIA report was endorsed by the Advisory Council on the Environment on 27 August 2001 on condition that the environmental monitoring and audit data and reports will be made available to the public on a designated website. The Director of Environmental Protection approved the EIA report on 31 August 2001.

16. This project is not a designated project under the EIA Ordinance and no environmental permit is required. We will control noise, dust, water quality and site run-off during construction through the implementation of appropriate monitoring and mitigation measures⁴. We have included the cost of implementing these mitigation measures (\$0.3 million) in the project estimate and will incorporate these requirements into the works contract for implementation.

17. We have given due consideration to the need to minimise the generation of construction and demolition (C&D) materials in designing the levels and alignments of the proposed water mains. To further minimise the generation of C&D materials, we will encourage the contractor to use steel instead of timber in formwork and temporary works. We estimate that about 4 380 m³ of C&D materials will be generated by the project. Of these, about 4 150 m³ (94.7%) will be reused on site and 230 m³ (5.3%) will be disposed of at

/landfills

⁴ 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.

landfills. The notional cost of accommodating C&D waste at landfill sites is estimated to be \$28,750 for this project (based on a notional unit cost⁵ of \$125/m³).

18. We will require the contractor to submit a waste management plan (WMP) with appropriate mitigation measures, including the allocation of areas for waste segregation on site to facilitate reuse or recycling of C&D materials, for approval. 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

19. The proposed works do not require land acquisition.

BACKGROUND INFORMATION

20. We upgraded **53WC** to Category B in November 1992 for improvement of water supply to the Western, Central and Wan Chai areas and extension of water supply to the Central and Wan Chai reclamation. Since then, we have upgraded parts of **53WC** to Category A as detailed in paragraphs 21 and 22 below.

21. In July 1993, part of **53WC** was upgraded as **66WC** “Improvement of water supply to Western, Central and Wan Chai areas – advance mainlaying in Catchick Street, Hollywood Road and Pokfulam Road” at an estimated cost of \$14 million. The mainlaying works commenced in 1993 and were completed in 1998.

/22.

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.

22. In January 1994, another part of **53WC** was upgraded as **69WC** “Improvement of water supply to Western, Central and Wan Chai areas and extension of water supply to Central and Wan Chai reclamation – stage I” at an estimated cost of \$249 million. The works comprise the construction of a salt water service reservoir in Pokfulam with a capacity of 16 500 m³ and a salt water pumping station at the Sheung Wan seafront and the laying of a salt water trunk main connecting the two facilities, and the laying of fresh and salt water distribution mains in the Western, Central and Wan Chai areas including Central reclamation phase II.

23. The detailed design for the mainlaying works for CRIII is completed by DTD's consultants at a cost of \$1.1 million charged to the block allocation **Subhead 9100WX** “Waterworks, studies and investigations for items in Category D of the Public Works Programme”.

24. As regards the remaining part of **53WC** for the laying of water mains for WDII, we plan to upgrade the mainlaying works to Category A in early 2004 to tie in with the reclamation programme of WDII.

25. We estimate that the proposed works will create eight jobs comprising two professional/technical staff and six labourers, totalling 400 man-months.

Works Bureau
May 2002

Enclosure 2 to PWSC(2002-03)40

53WC – Improvement of water supply to Western, Central and Wan Chai areas and extension of water supply to Central and Wan Chai reclamation

Breakdown of the estimates for the consultants' fees

Consultants' staff costs		Estimated man-months	Average MPS* salary point	Multiplier ^(Note 1)	Estimated fee (\$ million)
(a) Contract administration ^(Note 2)	Professional	0.5	–	–	0.1
	Technical	1.2	–	–	0.1
(b) Site supervision by resident site staff of the consultants	Professional	3.2	38	1.7	0.3
	Technical	15.5	14	1.7	0.5
Total consultants' staff costs					1.0

*MPS = Master Pay Scale

Notes

1. A multiplier of 1.7 is applied to the average MPS point to estimate the cost of resident site staff supplied by the consultants. (As at 1.4.2001, MPS pt. 38 = \$60,395 per month and MPS pt. 14 = \$19,510 per month.)
2. The figures given above are based on estimates prepared by the Director of Water Supplies. The consultancy works for the mainlaying works have been included as part of the Consultancy Agreement No. CE 15/94 titled "Central Reclamation Phase III". The assignment will only be triggered subject to the Finance Committee's approval for the upgrading of part of 53WC to Category A.