

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 709 -WATERWORKS

Water Supplies – Salt water supplies

47WS – Upgrading of salt water supply to northwest Kowloon

Members are invited to recommend to Finance Committee the upgrading of **47WS** to Category A at an estimated cost of \$53.3 million in money-of-the-day prices for upgrading the existing salt water supply to the northwest Kowloon area.

PROBLEM

The existing salt water supply system is inadequate to meet the long term demand in the northwest Kowloon area¹.

PROPOSAL

2. The Director of Water Supplies (DWS), with the support of the Secretary for the Environment, Transport and Works, proposes to upgrade **47WS** to Category A at an estimated cost of \$53.3 million in money-of-the-day (MOD) prices for upgrading the existing salt water supply to the northwest Kowloon area.

/PROJECT

¹ Northwest Kowloon area covers Beacon Hill, Shek Kip Mei, Yau Yat Tsuen, Mong Kok, Tai Kok Tsui, Sham Shui Po, Cheung Sha Wan, Lai Chi Kok and Stonecutters Island.

PROJECT SCOPE AND NATURE

3. The scope of works under **47WS** comprises –
- (a) demolition of the existing staff quarters and temporary store within the Cheung Sha Wan salt water pumping station compound;
 - (b) construction of an annex building with a total floor area of about 560 square metres at the same location and minor structural modification works of the existing salt water pumping station for housing the uprated electrical and mechanical plants; and
 - (c) supply and installation of electrical and mechanical plants, including pumpsets, electrochlorination plants, transformers and switchgears inside the existing Cheung Sha Wan salt water pumping station and the annex building.

A site plan showing the proposed works is at Enclosure 1.

4. We plan to commence the proposed works in May 2007 for completion in December 2009. We will use in-house staff to supervise the construction works.

JUSTIFICATION

5. Salt water supply to the northwest Kowloon area is provided by the Cheung Sha Wan salt water pumping station. The projected growth in population and future developments in the area will entail an increase in the demand for salt water from a mean daily demand of about 61 000 cubic metres/day (m^3/day) in 2006 to 69 000 m^3/day beyond 2011.

6. To meet the growing demand, we need to increase the output capacity of the Cheung Sha Wan salt water pumping station to 96 000 m^3/day with sufficient provisions² to cover daily fluctuation in demand and contingency. As we anticipate that the existing Cheung Sha Wan salt water pumping station will become heavily overloaded around 2009, we need to commence the proposed uprating works as soon as possible so as to ensure adequate salt water supply to the northwest Kowloon area.

/FINANCIAL

² The provisions include the additional capacity of about 18 000 m^3/day to cater for daily fluctuation in demand and 9 000 m^3/day for contingency.

FINANCIAL IMPLICATIONS

7. We estimate the cost of the proposed works to be \$53.3 million in MOD prices (see paragraph 8 below), made up as follows –

	\$ million	
(a) Construction of an annex building (including demolition of existing staff quarters and temporary store) and minor structural modification of the existing Cheung Sha Wan salt water pumping station	12.3	
(b) Supply and installation of electrical and mechanical plants	34.4	
(c) Environmental mitigation measures	0.1	
(d) Contingencies	4.6	
	Sub-total	51.4 (in September 2006 prices)
(e) Provision for price adjustment	1.9	
	Total	53.3 (in MOD prices)

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

Year	\$ million (Sept 2006)	Price adjustment factor	\$ million (MOD)
2007 – 2008	4.3	1.01250	4.4
2008 – 2009	26.7	1.02769	27.4
2009 – 2010	13.5	1.04310	14.1
2010 – 2011	4.5	1.05875	4.8
2011 – 2012	2.4	1.08257	2.6

51.4

53.3

/9.

9. We have derived the MOD estimate 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 from 2007 to 2012. We will implement the building works through a lump sum contract. The contract will provide for price adjustment as the contract period will exceed 21 months. We will implement the mechanical and electrical works through a separate lump sum contract.

10. We estimate the additional annual recurrent expenditure arising from this project to be \$4.17 million.

11. The project by itself would lead to an increase in production cost of water by 0.1% in real terms by 2012³.

PUBLIC CONSULTATION

12. We consulted the Yau Tsim Mong District Council on 23 May 2006. The District Council supported the project.

13. We consulted the Legislative Council Panel on Planning, Lands and Works on the proposed works by circulation of an information paper on 20 November 2006. Members had no objection to the proposal.

ENVIRONMENTAL IMPLICATIONS

14. This is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We completed a Preliminary Environmental Review (PER) for the project in April 2006. The PER concluded and the Director of Environmental Protection agreed that the project would not have any long-term environmental impacts. We have included \$0.1 million (in September 2006 prices) in the project estimates for the implementation of standard pollution control measures to mitigate short-term construction impacts. We will incorporate these requirements in the works contract.

/15.

³ The increase in production cost of water is calculated at the present price level and on the assumption that the water demand remains static during the period from 2007 to 2012.

15. We have considered the layout and foundation level of the proposed annex building in the planning and design stages to reduce the generation of construction and demolition (C&D) materials where possible. In addition, we will require the contractor to reuse inert C&D materials (e.g. excavated soil) on site or in other suitable construction sites as far as possible in order to minimise the disposal of C&D materials to public fill reception facilities⁴. We will encourage the contractor to maximise the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimise the generation of construction waste.

16. We will also 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 C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMP. We will control the disposal of public fill and C&D waste to public fill reception facilities and landfills respectively through a trip-ticket system. We will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. We will also record the disposal, reuse and recycling of C&D materials for monitoring purposes.

17. We estimate that the project will generate about 3 490 tonnes of C&D materials. Of these, we will reuse about 165 tonnes (5%) on site, deliver 3 215 tonnes (92%) to public fill reception facilities for subsequent reuse and dispose of 110 tonnes (3%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be \$100,555 for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne⁵ at landfills).

LAND ACQUISITION

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

/BACKGROUND

⁴ Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of public fill in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

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 is likely to be more expensive) when the existing ones are filled.

BACKGROUND INFORMATION

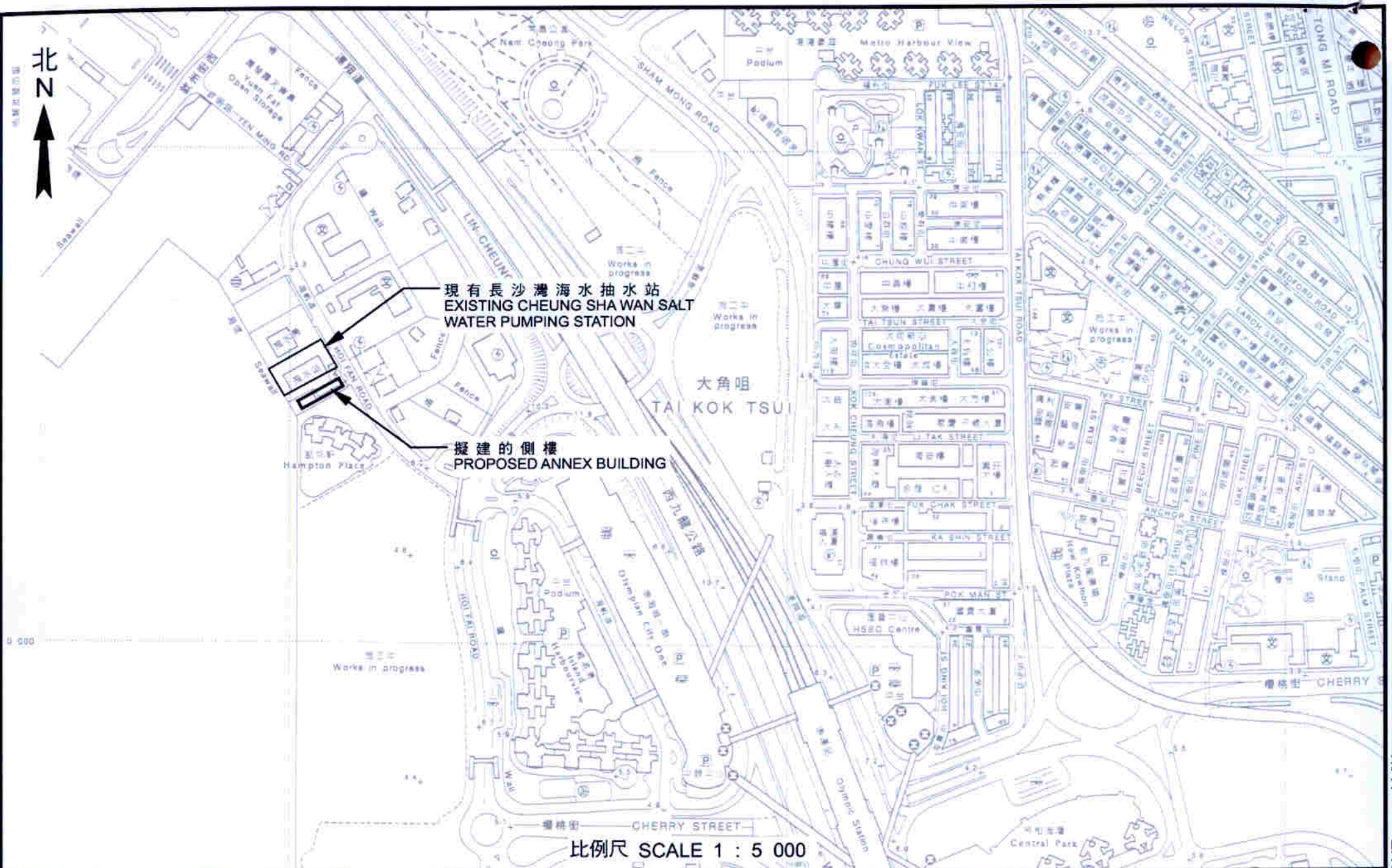
19. We upgraded **47WS** to Category B in October 2005.

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

21. The proposed works will not involve any tree removal. We will consider planting shrubs on five planters, each measured 800 millimetres (mm) by 300 mm, to improve the appearance of the pumping station compound.

22. We estimate that the proposed works will create 35 jobs (30 for labourers and another five for professional/technical staff) providing a total employment of 600 man-months.

Environment, Transport and Works Bureau
December 2006



現有長沙灣海水抽水站
EXISTING CHEUNG SHA WAN SALT
WATER PUMPING STATION

擬建的側樓
PROPOSED ANNEX BUILDING

比例尺 SCALE 1 : 5 000

核准 APPROVED

 總工程師/設計 CE / DES
 6/10/2006

(甲級工程)
(CAT 'A' Submission)

工務計劃項目第47WS號 — 西北九龍海水供應系統提升工程
 P.W.P. Item no. 47WS — Uprating of salt water supply to northwest Kowloon

 水務署
 WATER SUPPLIES DEPT.
 草圖編號 SK 62006 / 032 / 001
 SKETCH NO.

附件1 ENCLOSURE 1