

For Information

Legislative Council Panel on Planning, Lands and Works
45WS – Salt water supply for North West New Territories

PURPOSE

This paper briefs Members on the proposal to upgrade part of **45WS** – “Salt water supply for North West New Territories (NWNT)” to Category A, at an estimated cost of about \$192.3 million in money-of-the-day (MOD) prices, to provide salt water supply for flushing to Tuen Mun East areas ¹ and Tin Shui Wai.

PROPOSAL

2. The proposed part-upgrading of **45WS** covers the first stage of the project comprising the construction of :–
- (a) approximately 8.5 kilometres (km) of salt water mains of diameter 1 000 millimetres (mm) along Castle Peak Road from Tsing Fat Street, Lok On Pai to Fu Tei, Tuen Mun; and
 - (b) an intermediate booster chlorination plant ² at Tuen Mun Water Treatment Works.

— A site plan (Sketch No. SK62006/122) showing the proposed works is at **Enclosure 1**.

3. We plan to start the construction of the proposed works in late 2007 for completion in late 2010. The works will be supervised by in-house staff.

¹ Tuen Mun East areas covers Siu Lam, So Kwun Wat, Sam Shing Hui, San Hui and Lam Tei.

² The purpose of the intermediate booster chlorination plant is to provide continuous disinfection to the salt water. The plant will liberate hypo-chlorite (a disinfectant) through electrolysis of the sodium chloride present in salt water within the supply system.

JUSTIFICATION

4. At present, Tuen Mun East areas and Tin Shui Wai with a population of 525 000 are supplied with temporary mains fresh water for flushing (TMF). It is estimated that about 44 000 cubic metres of fresh water is used per day for flushing purpose in these areas. The Water Supplies Department has conducted a review on the flushing water supply in NWNT and concluded that it would be more cost-effective to use salt water for flushing as compared with TMF. We therefore propose the implementation of a salt water supply system in NWNT to replace the current supply of TMF, with a view to saving precious fresh water and providing a more economical flushing water source.

5. To reduce the number of concurrent road opening sections along Castle Peak Road and to minimize the inconvenience to the public, we propose to implement **45WS** in two stages.

FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the proposed works to be part-upgraded under **45WS** to be about \$192.3 million in MOD prices made up as follows –

	\$ million
(a) Mainlaying along Castle Peak Road from Tsing Fat Street, Lok On Pai to Fu Tei, Tuen Mun	167.3
(b) Intermediate booster chlorination plant at Tuen Mun Water Treatment Works	5.8
(c) Environmental mitigation measures	1.8
(d) Contingencies	<u>17.4</u>
Total	<u>192.3 (in MOD prices)</u>

ENVIRONMENTAL IMPLICATIONS

7. This is not a designated project under the Environmental Impact Assessment Ordinance (Cap 499). We completed a Preliminary Environmental Review (PER) for the proposed works in April 2007 which concluded that the proposed works would not have any long-term environmental impacts. We will incorporate the implementation of standard pollution measures to mitigate short-term construction impacts in the works contracts.

8. For short-term impacts during construction, we will control noise, dust and site run-off within established standards and guidelines through the implementation of mitigation measures, such as the use of temporary noise barriers and silenced construction plant to reduce noise generation and water-spraying to reduce emission of fugitive dust. We will incorporate a clause into the works contracts to require the contractors to carry out environmental mitigation measures as recommended in the PER to control pollution and disposal of contaminated soil in accordance with the relevant regulations during construction.

9. We have considered the alignment of the mainlaying, the layout and foundation level of the proposed intermediate booster chlorination plant in the detailed design to reduce the generation of construction and demolition (C&D) materials where possible. In addition, we will require the contractors 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 minimize the disposal of C&D materials to public fill reception facilities³. We will encourage the contractors to maximize the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimize the generation of construction waste.

10. We will also require the contractors 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 contractors to separate public fill

³ 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.

from C&D waste for disposal at appropriate facilities and will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

11. We estimate that the proposed works will generate about 68 250 tonnes of C&D materials. Of these, we will reuse about 45 860 tonnes (67.2%) on site and deliver about 21 775 tonnes (31.9%) to public fill reception facilities for subsequent reuse. In addition, we will dispose of about 615 tonnes (0.9%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be about \$664 800 for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonnes at landfills⁴).

TRAFFIC IMPLICATIONS

12. To minimize possible disruption to traffic during construction, we have completed the traffic impact assessment (TIA) for the proposed works. The TIA has concluded that the proposed works would not cause unacceptable traffic impact. During construction, we will maintain smooth traffic flow as far as possible through implementing temporary traffic management measures, and will display notice boards on site to explain the reason of temporary traffic arrangements and the expected completion dates of the concerned sections of works. In addition, we will set up telephone hotlines for public enquiries or complaints. We will arrange to carry out construction works in busy road sections in non-peak hours. At road junctions where traffic impact may be significant or crossing the Light Rail routes is unavoidable, we will employ trenchless method as far as practicable.

13. We will establish a Traffic Management Liaison Group (TMLG) under the works contracts to discuss, scrutinize and agree on the proposed temporary traffic management measures. Representatives from Transport Department, Hong Kong Police Force, Highways Department, the relevant District Office and public transport operators will be invited to attend the TMLG before implementing the works. When considering the temporary traffic arrangements, the TMLG will take into account all relevant factors such as site restrictions, existing/future traffic conditions, pedestrian safety, access to buildings/shop fronts, and provision of emergency vehicle access.

⁴ 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.

PUBLIC CONSULTATION

14. We consulted the Environment, Hygiene and District Development Committee of the Tuen Mun District Council regarding the proposed works on 16 March 2007. The Committee supported the proposed works.

LAND ACQUISITION

15. The proposed works do not require any land resumption or major land clearance.

BACKGROUND

16. **45WS** was included in Category B in October 2004 for implementing a new salt water supply system to serve Tuen Mun East areas and Tin Shui Wai. The full scope of works under **45WS** comprises the construction of –

- (a) a salt water pumping station at Lok On Pai;
- (b) a salt water service reservoir at Tan Kwai Tsuen;
- (c) an intermediate booster chlorination plant at Tuen Mun Water Treatment Works;
- (d) approximately 16.8 km of salt water mains ranging from 300 to 1 000 mm in diameter between Lok On Pai and Tin Shui Wai; and
- (e) associated service pipes and pipe connections.

17. Detailed design of the proposed works under the first stage of **45WS** as listed in paragraphs 2(a) and 2(b) above are substantially completed.

18. We are continuing with the detailed design of the works under the remaining stage of **45WS**. We aim to commence the construction of the remaining works in late 2008 for completion in 2012. On completion of the remaining works, the salt water supply system will be commissioned to provide salt water for flushing to the planned supply zones.

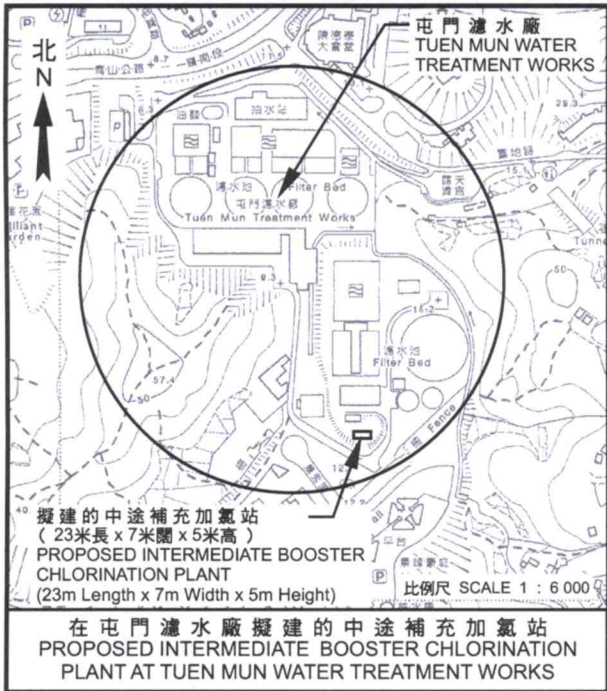
19. The proposed works will not involve any tree removal.

20. We estimate that the proposed works will create about 100 jobs (86 for labourers and another 14 for professional/technical staff) providing a total employment of 3 200 man-months.

WAY FORWARD

21. We intend to submit the proposed part-upgrading of **45WS** to Category A for consideration by the Public Works Sub-committee in June 2007, with a view to seeking subsequent funding approval from the Finance Committee.

Environment, Transport and Works Bureau
May 2007



圖例 LEGEND :

- 擬建的海水管道
(建議部份提升為甲級)
PROPOSED SALT WATER MAIN
(TO BE PART UPGRADED
TO CATEGORY A)
- - - 餘下海水管道
REMAINING SALT WATER MAIN
- 擬建的海水供應範圍
PROPOSED SALT WATER
SUPPLY ZONE
- ➔ 接駁配水網絡
CONNECTION TO LOCAL
DISTRIBUTION NETWORK
- ➔ 接駁配水網絡
CONNECTION TO LOCAL
DISTRIBUTION NETWORK

核准 APPROVED

[Signature]
總工程師/設計 CE / DES

7151/2007

(甲級工程)
(CAT 'A' Submission)

新工務計劃項目 45WS 號 - 新界西北區海水供水計劃
P.W.P. New item 45WS - Salt water supply for North West New Territories



水務署
WATER SUPPLIES DEPT.

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