

Legislative Council Panel on Planning, Lands and Works

76WC – Improvement to Hong Kong Central mid-level and high level areas water supply – remaining works

PURPOSE

This paper briefs Members on the proposal to upgrade the remaining works under **76WC** to Category A, at an estimated cost of about \$229.3 million in money-of-the-day (MOD) prices, to improve the reliability of water supply to Hong Kong Central mid-level and high level areas¹.

PROPOSAL

2. The scope of the remaining works under **76WC** for the mid-level area comprises: -

- (a) construction of the proposed New Hatton Road No. 1 and No. 2 fresh water service reservoirs with storage capacities of 2 500 and 4 500 cubic metres (m³) respectively, and demolition of the existing Hatton Road fresh water service reservoirs;
- (b) uprating of the Hatton Road fresh water service reservoir pump group in the existing Western fresh water and salt water pumping station from 5 530 to 7 300 m³/day; and
- (c) laying of about 5 400 metres (m) fresh water trunk mains of diameter ranging from 300 to 700 millimetres (mm) and about 4 100 m fresh and salt water distribution mains of diameter ranging from 200 to 450 mm.

3. The scope of the remaining works under **76WC** for the high level area comprises: -

- (a) construction of the proposed Peak No. 2 fresh water service reservoir with a storage capacity of 1 750 m³;
- (b) construction of the proposed Kotewall Road fresh water pumping station with an output of 3 300 m³/day;

¹ Hong Kong Central mid-level covers the area from south of Queen's Road Central to north of Conduit Road between Cotton Tree Drive and Pok Fu Lam Road. Hong Kong Central high level covers the area at Victoria Peak, Mount Gough and Mount Kellett.

- (c) relocation of the existing Peak fresh water pumping station with an output of 345 m³/day;
 - (d) uprating of the Kotewall Road fresh water service reservoir pump group in the existing Western fresh water and salt water pumping station from 14 500 to 17 300 m³/day; and
 - (e) laying of about 1 600 m fresh water trunk mains of diameter ranging from 200 to 300 mm, and about 300 m fresh water distribution mains of diameter 200 mm.
4. We plan to commence the proposed works in October 2007 for completion in June 2011. A site plan showing the proposed works is at **Enclosure 1**.

JUSTIFICATION

Mid-level Area

5. Currently, the existing Hatton Road fresh water service reservoirs, Conduit Road fresh water service reservoir and Peak Road fresh water service reservoir each serves its own supply zone in the mid-level area without any interconnection. To safeguard the reliability of fresh water supply to the mid-level area with adequate operational safety, we propose to link up the supply zones of these fresh water service reservoirs and increase their total storage capacity from the existing quantity of 13 258 m³ to the required quantity of 16 905 m³, such that fresh water supply would be maintained even if any of these service reservoirs has to be shut down for maintenance when required. In addition, we need to uprate the existing pumping system within the district with increased capacity to provide adequate reserve for supply reliability and cater for the interconnection of the foregoing three service reservoirs. We also need to lay additional fresh water and salt water distribution mains in the mid-level area to improve the hydraulics of the systems, as the area may suffer weak water pressure or interruption of water supply even when a small scale repair or planned maintenance is carried out.

6. The two existing Hatton Road fresh water service reservoirs have been in service for more than 50 and 80 years respectively. Their condition is unsatisfactory due to aging, and maintenance is becoming difficult and costly. To ensure their reliability and to obviate adverse effects to the stability of the slopes in the vicinity due to further deterioration of the service reservoirs, we propose to reconstruct these two existing service reservoirs.

High Level Area

7. Currently, only the Peak fresh water service reservoir with a storage capacity of 1 796 m³ serves the high level area, which is fed by one water main from the Western fresh and salt water pumping station with no alternative supply source. To safeguard the reliability of fresh water supply to the high level area with adequate operational safety, we propose to construct an additional fresh water service reservoir to integrate with the existing Peak fresh water service reservoir to enable isolation of the existing service reservoir for maintenance when required. In conjunction with this improvement work, we will construct a new pumping station at Kotewall Road, uprate the associated pumping system, relocate the existing Peak fresh water pumping station, and lay a new water main between the new pumping station and the service reservoirs at the high level area to provide a second supply source, such that fresh water supply would be maintained even if there is interruption in one of the fresh water supply routes to the high level area. Besides, we will lay additional fresh water distribution mains in the high level area to improve the hydraulics of the system.

FINANCIAL IMPLICATIONS

8. We estimate the capital cost of the proposed works to be about \$229.3 million in MOD prices made up as follows: –

	\$ million
(a) Demolition of existing service reservoirs	1.1
(b) Fresh water service reservoirs	76.6
(c) Fresh water pumping stations	16.9
(d) Uprating of Western fresh water and salt water pumping station	10.3
(e) Mainlaying	81.3
(f) Environmental mitigation measures	2.2
(g) Consultants' fees	
(i) for contract administration	1.4

	\$ million
(ii) for site supervision	18.6
(h) Contingencies	20.9
Total	<u>229.3</u> (in MOD prices)

ENVIRONMENTAL IMPLICATIONS

9. 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 March 2007. The PER concluded and the Director of Environmental Protection agreed that, with the recommended mitigation measures in place, the project would not cause any adverse environmental impacts.

10. We have included about \$2.2 million (in MOD prices) in the project estimates for the implementation of mitigation measures, including the use of temporary noise barriers, silenced construction plant, water-spraying during construction, suitably designed enclosures for pumping stations etc., to control impacts during construction and operation stages to within established standards and guidelines.

11. We have considered the layout and foundation level of the proposed service reservoirs and pumping stations in the planning and design stage 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 minimize the disposal of C&D materials to public fill reception facilities². We will encourage the contractor 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.

12. 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

² 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.

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

13. We estimate that the proposed works will generate about 52 000 tonnes of C&D materials. Of these, we will reuse about 30 000 tonnes (58%) on site and deliver 15 200 tonnes (29%) to public fill reception facilities for subsequent reuse. In addition, we will dispose of 6 800 tonnes (13%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be about \$1.3 million for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonnes at landfills³).

TRAFFIC IMPLICATIONS

14. We have worked out the traffic arrangements for the proposed works. To minimise 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 through implementing temporary traffic management measures as far as possible and displaying notice boards on site to explain the reason of temporary traffic arrangements and the expected completion date of the concerned section of works. In addition, we will set up telephone hotlines for public enquiries or complaints. We will also arrange to carry out construction works in busy road sections in non-peak hours. Furthermore, at road junctions where traffic impacts may be significant, we will employ trenchless method as far as practicable. These locations include the junctions of Magazine Gap Road and Garden Road, Robinson Road and Old Peak Road, Caine Road and Castle Road, and Wyndam Street and Arbuthnot Road.

15. We will also establish a Traffic Management Liaison Group (TMLG) under the works contract to discuss, scrutinise 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 implementation. The TMLG will take into account all the relevant factors, such as site restrictions, existing and future traffic conditions, pedestrian safety, access to buildings/shop fronts and provision of emergency vehicle access, while considering the temporary traffic arrangements.

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/m³), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

PUBLIC CONSULTATION

16. We consulted the Food, Environment, Hygiene and Works Committee of the Central and Western District Council on the proposed works on 12 October 2006. The Committee supported the proposed works.

LAND ACQUISITION

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

JOB CREATION

18. 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 4 000 man-months.

BACKGROUND

19. We included **76WC** “Improvement in Hong Kong Central mid-level and high level areas water supply” in Category B in July 1994.

20. In January 1995, the Finance Committee approved the upgrading of part of **76WC** to Category A as **77WC** “Improvement to Hong Kong Central mid-level and high level areas water supply – Stage 1”, at an estimated cost of \$20.5 million (in MOD prices), for the construction of the extension of New Albany fresh water pumping station and the laying of salt water mains. The works commenced in November 1995 and were completed in September 1999.

21. In May 2003, the Finance Committee approved the upgrading of another part of **76WC** to Category A as **183WC** “Improvement to Hong Kong Central mid-level and high level areas water supply – Stage II”, at an estimated cost of \$70.6 million (in MOD prices), for the construction of the Magazine Gap Road No. 3 fresh water service reservoir, uprating of the Magazine Gap Road fresh water pumping station and laying of fresh water mains. The works commenced in August 2003 and were completed in November 2006.

22. The proposed works covers the remaining works under **76WC** to improve the reliability of water supply to Hong Kong Central mid-level and high level areas.

23. Of the 1 037 trees within the project boundary, we shall be able to preserve 895 trees. The proposed works will involve felling of 142 common trees which are not important trees⁴. We will incorporate planting proposal as part of the project, including the estimated quantities of 145 trees and 900 square metres of grassed area.

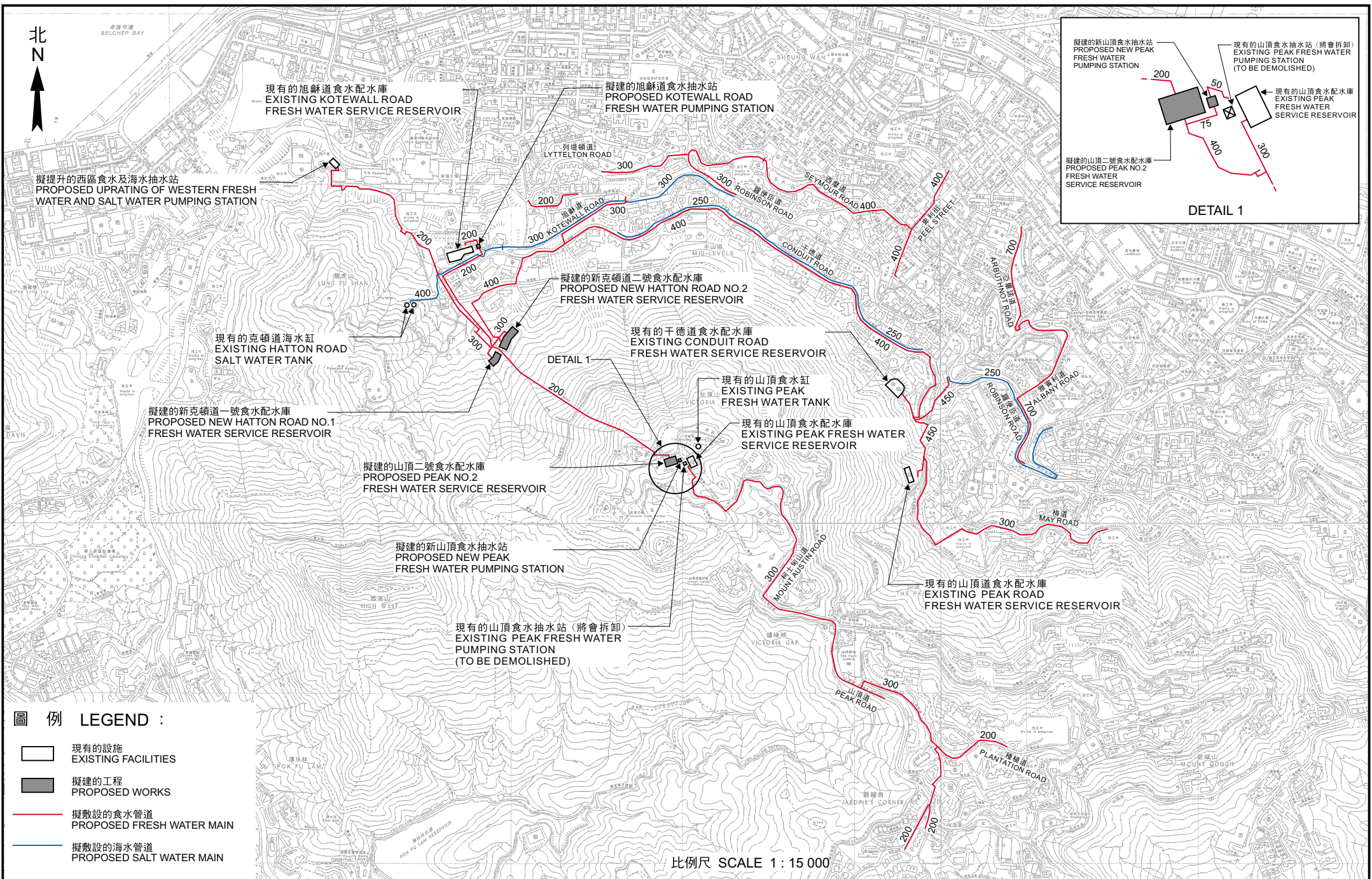
WAY FORWARD

24. We intend to submit the proposal of upgrading the remaining works under **76WC** to Category A for consideration by the Public Works Sub-committee in April 2007, with a view to seeking funding approval from the Finance Committee.

Environment, Transport and Works Bureau
March 2007

⁴ “Important trees” refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria:

- (a) trees over 100 years old or above;
- (b) trees of cultural, historical or memorable significance, e.g. Fung Shui trees, trees as landmark of monastery or heritage monument, and trees in memory of important persons or events;
- (c) trees of precious or rare species;
- (d) trees of outstanding form (taking account of overall tree sizes, shape and any special features), e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0 metre (measured at 1.3 metres above ground level), or with height/canopy spread equal or exceeding 25 metres.



圖例 LEGEND :

- Existing facilities (white outline)
- Proposed works (grey outline)
- Proposed fresh water main (red line)
- Proposed salt water main (blue line)

核准 APPROVED
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15 / 3 / 2007

工務計劃項目第 76WC 號 — 港島中區半山及以上地區供水改善計劃 — 餘下工程
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