

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 711 – HOUSING

#### Water Supplies – Combined fresh/salt water supply

#### 126WC – Water supply to housing development at Anderson Road

Members are invited to recommend to the Finance Committee the upgrading of **126WC** to Category A at an estimated cost of \$231.5 million in money-of-the-day prices for providing water supply to serve the development at Anderson Road.

### PROBLEM

We need to provide water supply to serve the development at Anderson Road (DAR) in East Kowloon, which is not served by any water supply system.

### PROPOSAL

2. The Director of Water Supplies, with the support of the Secretary for Transport and Housing, proposes to upgrade **126WC** to Category A at an estimated cost of \$231.5 million in money-of-the-day (MOD) prices for completing the fresh and flushing water supply system for the development of public housing and public facilities at Anderson Road.

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**PROJECT SCOPE AND NATURE**

3. The scope of the remaining works under **126WC** proposed to be upgraded to Category A in this funding submission comprises –

- (a) construction of a fresh water pumping station at Sau Mau Ping Road with a pumping capacity of 22 000 cubic metres (m<sup>3</sup>) per day;
- (b) construction of a fresh water service reservoir at Anderson Road with a capacity of 12 000 m<sup>3</sup>;
- (c) construction of a salt water service reservoir at Anderson Road with a capacity of 2 800 m<sup>3</sup>;
- (d) laying of approximately 2 kilometres of fresh and salt water mains with sizes ranging from 300 millimetres (mm) to 900 mm in diameter;
- (e) installation of additional salt water pumps with a pumping capacity of 5 200 m<sup>3</sup> per day in the existing Shum Wan Shan salt water pumping station;
- (f) installation of additional fresh water pumps with a pumping capacity of 22 000 m<sup>3</sup> per day in the existing Shum Wan Shan fresh water pumping station; and
- (g) ancillary works including greening works.

\_\_\_\_\_ 4. A site plan of the proposed works is at Enclosure 1. The  
\_\_\_\_\_ photomontages showing the proposed works are at Enclosure 2.

5. Subject to the funding approval of the Finance Committee, we plan to commence the construction of the proposed works in January 2012 for completion by end 2014.

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**JUSTIFICATION**

6. The proposed public housing development at Anderson Road will be constructed by the Hong Kong Housing Authority to provide about 17 650 flats for a population of about 48 300. Public facilities, such as schools and district open spaces have been planned for the area. Population intake is scheduled to be in phases between 2015 and 2016. We need to construct a new water supply system to meet the water demand arising from the DAR which is currently not covered by any water supply system.

7. The principal mainlaying works for the new water supply system are currently being implemented under **188WC** “Mainlaying within development at Anderson Road”, which was part-upgraded from **126WC** in December 2007 for completion by 2014. The remaining works under **126WC**, as detailed in paragraph 3 above, is for the completion of the proposed water supply system to serve the DAR. We have to commence the construction of the remaining works in January 2012 for completion by end 2014 in order to meet the water demand arising from the scheduled population intake starting from 2015.

**FINANCIAL IMPLICATIONS**

8. We estimate the capital cost of the proposed works to be \$231.5 million in MOD prices (please see paragraph 10 below), broken down as follows –

	<b>\$ million</b>
(a) Sau Mau Ping Road fresh water pumping station	31.9
(b) Anderson Road fresh water service reservoir	72.2
(c) Anderson Road salt water service reservoir	12.5
(d) Remaining mainlaying works	27.4
(e) Installation of additional salt water pumps in the existing Shum Wan Shan salt water pumping station	2.0
(f) Installation of additional fresh water pumps in the existing Shum Wan Shan fresh water pumping station	7.6

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	<b>\$ million</b>	
(g) Greening works	1.6	
(h) Environmental mitigation measures	5.8	
(i) Consultants' fees for	3.0	
(i) contract administration	1.9	
(ii) management of resident site staff	1.1	
(j) Remuneration of resident site staff	17.8	
(k) Contingencies	17.9	
Sub-total	199.7	(in September 2010 prices)
(l) Provision for price adjustment	31.8	
Total	231.5	(in MOD prices)

9. We engaged consultants to carry out detailed design of the proposed works. Due to insufficient in-house resources, we propose to continue engaging consultants to undertake the contract administration and site supervision of the proposed works. A breakdown of the estimates for consultants' fees and resident site staff costs by man-months is at Enclosure 3.

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

<b>Year</b>	<b>\$ million (Sept 2010)</b>	<b>Price adjustment factor</b>	<b>\$ million (MOD)</b>
2011 – 2012	4.6	1.04525	4.8
2012 – 2013	71.8	1.10143	79.1
2013 – 2014	72.1	1.16201	83.8
2014 – 2015	34.7	1.22592	42.5
2015 – 2016	16.5	1.29335	21.3
	199.7		231.5

11. We have derived the MOD estimates on the basis of the Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period from 2011 to 2016. We will deliver the works under a re-measurement contract because the quantities of works are subject to variation having regard to the actual site conditions. The contract will provide for price adjustments.

12. We estimate the additional annual recurrent expenditure arising from the proposed works to be \$5.5 million.

13. The project by itself will lead to an increase in production cost of water by 0.14% in real terms by 2016<sup>1</sup>.

## **PUBLIC CONSULTATION**

14. We consulted the Kwun Tong District Council and the Sai Kung District Council on 1 March 2011 and 8 March 2011 respectively. Both Councils did not raise any objection to the proposed works.

15. We consulted the Legislative Council Panel on Housing on 19 May 2011 on the proposed works. Members raised no objection to the proposed works.

## **ENVIRONMENTAL IMPLICATIONS**

16. This is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We completed a Preliminary Environmental Review for the proposed works, which concludes that, with the recommended measures in place, the proposed works would not cause long-term adverse environmental impact. Short-term construction impacts will be mitigated through the implementation of standard pollution control measures and also the measures recommended in the Preliminary Environmental Review Report, such as the use of temporary noise barriers and silenced construction plants to reduce noise generation and water-spraying to reduce emission of fugitive dust. We have included in paragraph 8(h) above a sum of \$5.8 million (in September 2010 prices) in the project estimates for implementation of these mitigation measures and will incorporate these requirements into the works contracts for implementation.

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<sup>1</sup> 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 2011 to 2016.

17. At the planning and design stages, we have optimised the design of site levels and layouts of the proposed works to reduce the generation of construction waste where possible. In addition, we will require the contractor to reuse inert construction waste (e.g. excavated soil) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste at public fill reception facilities<sup>2</sup>. We will encourage the contractor to maximise the use of recycled or recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

18. At the construction stage, we will require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert construction waste and non-inert construction waste at public fill reception facilities and landfills respectively through a trip-ticket system.

19. We estimate that the proposed works will generate in total about 19 000 tonnes of construction waste. Of these, we will reuse about 6 100 tonnes (32.1%) of inert construction waste on site and deliver 12 000 tonnes (63.2%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 900 tonnes (4.7%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be \$436,500 for this project (based on a unit cost of \$27 per tonne for disposal at public fill reception facilities and \$125 per tonne<sup>3</sup> at landfills).

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<sup>2</sup> Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste in public fill reception facilities requires a license issued by the Director of Civil Engineering and Development.

<sup>3</sup> 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 per m<sup>3</sup>), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

## HERITAGE IMPLICATIONS

20. The proposed works will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites/buildings, sites of archaeological interests and Government historic sites identified by the Antiquities and Monument Office.

## TRAFFIC IMPLICATIONS

21. We have carried out a Traffic Impact Assessment (TIA) for the proposed works. The TIA has concluded that the proposed works would not cause any significant traffic impact to the surrounding road network. We will implement temporary traffic management measures to minimise the impact on traffic during construction and will display notice boards on site to explain the reason of temporary traffic arrangements and the expected completion dates of the individual sections of works. In addition, we will set up telephone hotlines for public enquiries or complaints.

## LAND ACQUISITION

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

## BACKGROUND INFORMATION

23. We upgraded **126WC** to Category B in September 2005.

24. To tie in with the housing development at Anderson Road for population intake in 2015, we engaged consultants to carry out the detailed design of the water mains within the DAR at a cost of \$1.9 million under the block allocation **Subhead B100HX** "Minor housing development related works, studies and investigations for items in Category D of the Public Works Programme". The consultants completed the detailed design in 2007.

25. We upgraded part of **126WC** to Category A as **188WC** entitled "Mainlaying within development at Anderson Road" at an approved project estimate of \$103.8 million in MOD prices in December 2007 for the mainlaying works within the DAR. The works are implemented as part of the Civil Engineering and Development Department's site formation project under **566CL** "Development at Anderson Road" which commenced in January 2008 for completion by 2014.

26. We also engaged consultants to carry out the detailed design of the remaining works described in paragraph 3 above for the DAR at an estimated cost of \$3.6 million under the block allocation **Subhead B100HX** “Minor housing development related works, studies and investigations for items in Category D of the Public Works Programme”. The consultants have completed the detailed design. We aim to start the construction in January 2012 for completion by end 2014.

27. The proposed works will not involve any tree removal. However, we will incorporate planting proposals as part of the project, including estimated quantities of 10 trees, 40 shrubs and 3 000 square metres of grassed area.

28. We estimate that the proposed works will create about 125 jobs (101 for labourers and another 24 for professional/technical staff), providing a total employment of 3 150 man-months.

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Transport and Housing Bureau  
May 2011



## Enclosure 3 to PWSC(2011-12)18

### 126WC – Water supply to housing development at Anderson Road

#### Breakdown of the estimates for consultants' fees and resident site staff costs (in September 2010 prices)

		Estimated man-months	Average MPS* salary point	Multiplier <small>(Note 1)</small>	Estimated fee (\$million)
(a) Consultants' fees for contract administration <small>(Note 2)</small>	Professional	-	-	-	1.6
	Technical	-	-	-	0.3
	Sub-total				1.9
(b) Resident site staff costs <small>(Note 3)</small>	Professional	90	38	1.6	8.4
	Technical	330	14	1.6	10.5
	Sub-total				18.9
Comprising –					
(i)	Consultants' fee for management of resident site staff				1.1
(ii)	Remuneration of resident site staff				17.8
	<b>Total</b>				20.8

\*MPS = Master Pay Scale

#### Notes

1. A multiplier of 1.6 is applied to the average MPS salary point to estimate the cost of resident site staff supplied by the consultants. (As at now, MPS salary point 38 = \$58,195 per month and MPS salary point 14 = \$19,945 per month.)
2. The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement for the design and construction of the project. The construction phase of the assignment will only be executed subject to Finance Committee's approval to upgrade the proposed works to Category A.
3. The actual man-months and actual costs will only be known after completion of the construction works.