For discussion
on 22 May 2006

Legislative Council Panel on Economic Services

PWP Item No. 44WS - Salt Water Supply System for Penny's Bay

Problem

There is no salt water supply to Hong Kong Disneyland (HKD) and other facilities in Penny's Bay on Lantau Island for flushing purpose.

Proposal

2. The Director of Civil Engineering and Development, with the support of the Secretary for Economic Development and Labour and with the agreement of the Director of Water Supplies (DWS), proposes to upgrade the PWP Item 44WS to Category A at an estimated cost of $119.5 million in money-of-the-day (MOD) prices for the construction of a salt water supply system for HKD and other facilities in Penny's Bay.

Project Scope and Nature

3. The scope of works comprises -

(a) the construction of a salt water service reservoir of a capacity of 2 500 cubic metres at Yan O Tuk;

(b) the construction of a salt water pumping station of a pumping capacity of 7 600 cubic metres/day at Ta Pang Po;

(c) the laying of about 1.3 kilometre of salt water mains which are 450 millimetres in diameter; and

(d) mechanical and electrical works for the proposed service reservoir and pumping station.

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

4. We plan to commence the construction of the proposed works in late 2006 for completion in June 2009. We will supervise the proposed works

using in-house staff.

Justification

5. Penny's Bay is a new development area with no existing salt water supply system. It is Government policy to provide salt water flushing supply to a new development area as far as possible. This will help reduce the demand on the precious fresh water. Therefore, a salt water supply system needs to be constructed for Penny's Bay. Major users in the area include HKD and other facilities such as the Penny's Bay Police Post and Fire Station cum Ambulance Depot in Penny's Bay. As an interim measure, these facilities have been provided with fresh water for flushing purpose.

Financial Implications

6. We estimate the capital cost of the proposed works to be $119.5 million in MOD prices, made up as follows –

		$ million	
(a)	Construction of a salt water service reservoir	35.0	
(b)	Construction of a salt water pumping station	41.6	
(c)	Mainlaying works and pipeworks	6.0	
(d)	Mechanical and electrical works	20.0	
(e)	Environmental mitigation measures	1.0	
(f)	Contingencies	10.4	
	Sub-total	114.0	(in September 2005 prices)
(g)	Provision for price adjustment	5.5	
	Total	119.5	(in MOD prices)

7. We have derived the MOD estimates on the basis of Government's latest forecast of trend rate of change in the prices of public sector building and construction output for the period 2007 to 2012. We will tender the civil engineering works on a re-measurement basis because the quantities of earthwork are subject to variation during construction to suit actual site conditions. The contract will provide for price adjustment as the contract period will exceed 21 months. For the mechanical and electrical works, the mechanical and electrical equipment will be supplied and installed through a works contract.

8. The annual recurrent expenditure arising from this project is about $2.6 million.

Public Consultation

9. We consulted the Tsuen Wan District Council, Ma Wan Rural Committee and Village Representatives from the north-east part of Lantau Island on the proposed works in January 2006. They had no objection to the proposal.

Environmental Implications

10. The project will not cause long term environmental impact. We will control noise, dust and site run-off during construction to within established standards and guidelines by incorporating standard environmental pollution control clauses in the civil engineering works contract. Further details are at **Enclosure 2**.

Land Acquisition

11. The proposed works do not require land resumption and only minor land clearance is required.

Previous Discussion at Legislative Council

12. This project is part of **660CL** for site formation, construction of associated infrastructure and provision of government, institution and community facilities on Lantau Island. In 1999, the Finance Committee agreed to accept in principle the financial implications for **660CL**, estimated at $13.569 billion in September 1999 prices. The construction of the salt water supply system has been provided for within the budget of **660CL**. This exercise is not an application for new funding.

Background Information

13. The original plan was to construct a salt water pumping station on a site to be reclaimed under the Tai Ho Development to provide salt water supply to Penny's Bay for flushing by 2006. However, owing to changes in the Tai Ho Development, DWS had to identify an alternative site for the salt water pumping station. After study, DWS proposed in 2004 to locate the pumping station in Ta Pang Po as shown in the map in Enclosure 1. In the interim, the short-term option of providing fresh water supply to Penny's Bay for flushing has been adopted.

14. DWS started the detailed design for the proposed works in late 2004 and substantially completed the detailed design using in-house resources in May 2006.

15. We estimate that the proposed works will create 90 jobs (78 for labourers and another 12 for professional/technical staff) providing a total employment of 2,100 man-months.

Way Forward

16. We intend to seek the Public Works Subcommittee's endorsement for upgrading the proposed works to Category A on 21 June 2006.

Economic Development and Labour Bureau
13 May 2006

Enclosure 2

Environmental Measures for the Proposed Works

(a) We completed an Environmental Impact Assessment (EIA) study in 2000 for the "Northshore Lantau Development Feasibility Study" covering, amongst others, the salt water service reservoir and associated laying of water mains at Yan O Tuk. The recommendations made in the approved EIA report relevant to the design stage have been adopted and other recommendations applicable to the construction stage will be effected during the construction of the proposed works.

(b) We completed a Preliminary Environmental Review (PER) in October 2005 for the proposed salt water pumping station and the associated laying of water mains at Ta Pang Po. The Director of Environmental Protection concluded that the proposed works is not a Designated Project under the EIA Ordinance (Cap. 499). The findings of the PER mainly relate to precautions required during construction stage and will be adopted in the construction of the proposed works.

(c) We have considered the location, levels and layout of the proposed salt water service reservoir, pumping station and associated water mains 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 facilities. 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.

(d) We will also require the contractor to submit an environmental management plan (EMP) for approval. The EMP 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 EMP. 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 record the disposal, reuse and recycling of C&D materials for monitoring purpose.

(e) The project will not cause long term environmental impact. We will control noise, dust and site run-off during construction to within established standards and guidelines by incorporating standard environmental pollution control clauses in the civil engineering works contract. We have included about $1 million (in September 2005 prices) in the project estimates to implement suitable mitigation measures to control short term environmental impacts.

(f) We estimate that the project will generate about 76 500 tonnes of C&D materials. Of these, we will reuse about 12 600 tonnes (16.5%) on site and deliver 63 750 tonnes (83.3%) to public fill reception facilities[1] for subsequent reuse. In addition, we will dispose of 150 tonnes (0.2%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be $1.7 million for this project (based on an unit cost of $27/tonne for disposal at public fill reception facilities and $125/tonne[2] at landfills).

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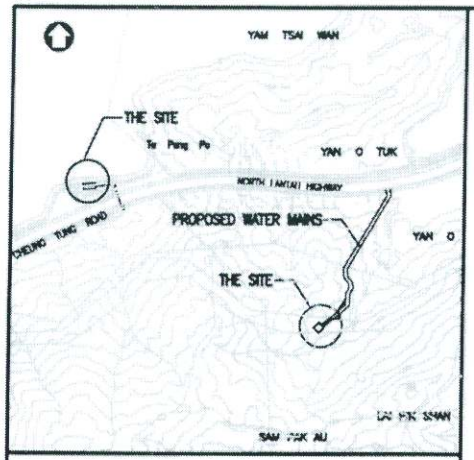
[1] Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of public fill in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

[2] 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 $90/$m^3$), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

附件一
Enclosure I



KEY PLAN
SCALE 1 : 25000

現有的海水管道
EXISTING SALT WATER MAIN

往竹篙灣
TO PENNY'S BAY

擬建的海水抽水站
PROPOSED SALT
WATER PUMPING STATION

欣澳灣
YAN O WAN

打棚埔
TA PANG PO

600

北大嶼山公路
NORTH LANTAU HIGHWAY

600

450

450 (INLET MAIN)

450 (OUTLET MAIN)

CHEUNG TUNG ROAD 塘東路

現有的欣澳食水配水庫
EXISTING SUNNY BAY
FRESH WATER SERVICE
RESERVOIR

擬建的海水配水庫
PROPOSED SALT WATER
SERVICE RESERVOIR

圖 例 LEGEND :

擬敷設的海水管道
PROPOSED SALT WATER MAINS

現有的管道
EXISTING WATER MAINS

比例尺 SCALE 1 : 10000

核准 APPROVED
總工程師/設計 CE / Des

10 / 5 / 2006

(甲級工程)
(CAT 'A' Submission)

工務計劃項目第44WS號 —— 竹篙灣海水供應系統
P.W.P. Item no. 44WS — Salt water supply system for Penny's Bay

水務署
WATER SUPPLIES DEPT.

草圖編號 SKETCH NO. SK 62006 / 018

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