For discussion
on 26 November 2007

Legislative Council
Panel on Environmental Affairs

352DS - Harbour Area Treatment Scheme, stage 2A – construction of advance disinfection facilities at Stonecutters Island sewage treatment works

PURPOSE

This paper seeks Members' support for the Administration's proposal to upgrade the project **352DS** to Category A at an estimated cost of about $110 million in money-of-the-day (MOD) prices, prior to submission to the Public Works Subcommittee for consideration with a view to seeking Finance Committee's funding approval.

PROPOSAL AND JUSTIFICATION

2. The water quality in respect of the bacteria level on the western side of Victoria Harbour and at the Tsuen Wan beaches is unsatisfactory. At present, seven Tsuen Wan beaches are closed. One of the reasons is that the treated effluent discharged from Stonecutters Island Sewage Treatment Works (SCISTW) is not disinfected. To tackle the problem, the Government plans to implement further improvement works, including disinfection and sewerage works under Stage 2 of the Harbour Area Treatment Scheme (HATS), as well as the local sewerage programmes in the area. As requested by the Public Accounts Committee when deliberating on the Director of Audit's Report No. 42 in 2004, part of the disinfection facilities is proposed to be advanced so as to reduce bacteria levels in the sea and facilitate the early re-opening of the closed Tsuen Wan beaches.

3. In July 2005, we commissioned an environmental impact assessment (EIA) study for the provision of disinfection facilities at the SCISTW, including the part to be advanced as proposed under this project. The EIA study confirmed the need for disinfection in order to reinstate the water quality at the Tsuen Wan beaches.

4. Under the EIA Study, we have examined various disinfection technologies that are available for water and wastewater disinfection, including some emerging technologies, and have carried out a careful evaluation exercise to select the most appropriate disinfection technology for HATS. Local and international disinfection practices were also reviewed. The study concluded that chlorination by the use of sodium hypochlorite solution was the preferred disinfection technology for HATS. This is the only viable option that will allow the early commissioning of disinfection facilities and re-opening of the Tsuen Wan beaches given the time, land, and planning constraints.

5. We now propose to implement the advance disinfection facilities at the SCISTW under **352DS**. In parallel, we are progressing with the local sewerage programmes for the unsewered areas which are also causing pollution at the Tsuen Wan beaches. The works under **352DS** and these sewerage programmes will facilitate the re-opening of the closed Tsuen Wan beaches as soon as possible. At the same time, we are proceeding with the necessary planning and design work to enable timely implementation of HATS Stage 2A. The other main components of HATS Stage 2A include a deep sewage tunnel network connecting the northern and western shores of Hong Kong Island to the SCISTW, expansion and upgrading works for the SCISTW together with the installation of the remaining disinfection facilities, and the upgrading of the associated preliminary treatment works. Upon completion of HATS Stage 2A and the other sewerage improvement projects in the area, the water quality in Victoria Harbour and at the Tsuen Wan beaches will be further improved.

PROJECT SCOPE

6. The scope of the proposed works under **352DS** comprises –

(a) construction of four sodium hypochlorite storage tanks;

(b) construction of two sodium bisulphite storage tanks; and

(c) provision of ancillary works including chemical delivery, dosing and control systems.

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

7. We plan to start the above construction works in April 2008 for completion in October 2009.

FINANCIAL IMPLICATIONS

8. We estimate the capital cost of the proposed project to be about $110 million[1] in MOD prices. There will also be recurrent cost implications estimated to be in the order of $88 million per annum. This estimate is yet to be confirmed, and the final figure will be included in the PWSC paper in due course.

9. We estimate that the proposed project will create about 86 jobs[1] (70 for labourers and 16 for professional/technical staff) providing a total employment of 1 401 man-months.

PUBLIC CONSULTATION

10. We consulted the Kwai Tsing District Council on 21 August 2007, the Tsuen Wan District Council on 6 September 2007, and the Sham Shui Po District Council on 6 September 2007 and 28 September 2007. Members of the Kwai Tsing District Council raised no objection to the proposed works and requested the Government to conduct environmental monitoring work when the disinfection facilities are in operation. The Tsuen Wan District Council indicated strong support for the proposal and urged early implementation to facilitate re-opening of the Tsuen Wan beaches. The Sham Shui Po District Council members were supportive of the proposal. At the same time, they requested and we undertook that adequate measures would be taken to improve the odour treatment at SCISTW.

11. On 15 October 2007 the Advisory Council on the Environment (ACE) endorsed the Environmental Impact Assessment (EIA) report for the advance disinfection facilities, with conditions. The conditions, accepted by the Administration, stipulate, *inter alia,* that there should be more frequent monitoring of key pollutant parameters in the effluent and in the receiving waters, that there should be appropriate automated systems put in place to control the dosage of the disinfection chemicals, and that the results should be placed on a

[1] These are the latest estimates. We will finalize the project costs and new job opportunities, and include the cost breakdown prior to submitting the proposal to the PWSC for consideration.

publicly-accessible website and reported to the ACE EIA Sub-committee on a quarterly basis.

ENVIRONMENTAL IMPLICATIONS

12. The project is a designated project under the EIA Ordinance and an environmental permit is required for its construction and operation. In November 2007 the EIA report for the project together with the enhanced monitoring, control and reporting arrangements described in paragraph 11 above were approved under the EIAO. The EIA report concluded that the environmental impact of the project can be controlled to within the criteria under the EIAO and the Technical Memorandum on the EIA Process. We shall implement the measures recommended in the approved EIA report.

13. For short term impacts during construction, we will control noise, dust and site runoff to levels within established standards and guidelines through the implementation of mitigation measures and good construction practices. We will also conduct a comprehensive environmental monitoring and audit programme during the construction and operation stages to ensure compliance with the environmental permit requirements.

14. We have considered in the planning and design stages how to minimise the generation of construction waste. 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 to public fill reception facilities and landfills respectively through a trip-ticket system.

15. We estimate that the project will generate in total about 8 600 tonnes of construction waste. Of these, we will deliver 8 300 tonnes (97%) of inert construction waste to public fill reception facilities[2] for subsequent reuse. In

[2] 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 licence issued by the Director of Civil Engineering and Development.

addition, we will dispose of 300 tonnes (3 %) of non-inert construction waste at landfills. The total cost of accommodating construction waste at public fill reception facilities and landfill sites is estimated to be $0.3 million for this project (based on a unit cost of $27/tonne for disposal at public fill reception facilities and $125/tonne[3] at landfills).

ADVICE SOUGHT

16. Members are invited to support the Administration's proposal to upgrade the project **352DS** to Category A at an estimated cost of $110 million in MOD prices for consideration by the Public Works Subcommittee in December 2007 with a view to seeking funding approval by the Finance Committee by January 2008.

Environmental Protection Department
November 2007

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

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八號貨櫃碼頭
CONTAINER TERMINAL 8

八號幹線 ROUTE 8

擬建加氯消毒設施
PROPOSED
CHLORINATION
FACILITIES

昂船洲污水處理廠
STONECUTTERS ISLAND
SEWAGE TREATMENT WORKS

擬建除氯消毒設施
PROPOSED DECHLORINATION FACILITIES

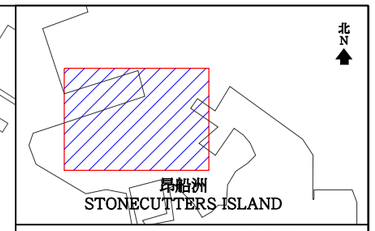
Bus Depot

West Kowloon Refuse Transfer Station

Pumping Station

Ruin

SIGNED



KEY PLAN 示意圖

圖例
LEGEND :

擬建工程
PROPOSED WORKS

擬敷管道
PROPOSED PIPEWORKS

圖則名稱 drawing title

工務計劃項目第352DS號
「淨化海港計劃」第二期甲－在昂船洲污水處理廠建造前期消毒設施
PWP ITEM No. 352DS
HARBOUR AREA TREATMENT SCHEME, STAGE 2A - CONSTRUCTION OF ADVANCE DISINFECTION FACILITIES AT STONECUTTERS ISLAND SEWAGE TREATMENT WORKS

繪畫 drawn	*ORIGINAL SIGNED* H.K. LAI	日期 date	04-10-2007
核對 checked	*ORIGINAL SIGNED* C.Y. LAI	日期 date	13-11-2007
批核 approved	*ORIGINAL SIGNED* K.M. HO	日期 date	13-11-2007

部門 office 淨化海港計劃部
HARBOUR AREA TREATMENT SCHEME DIVISION

圖則編號 drawing no. DSS/2007/009

比例 scale 1:5000 FOR A3

香港特別行政區政府渠務署
DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION

附件1 ENCLOSURE 1