For discussion
on 23 April 2007

Legislative Council
Panel on Environmental Affairs

342DS – Tai Po sewage treatment works stage 5 phase 2A - disinfection

PURPOSE

This paper seeks Members' support for the Administration's proposal to upgrade the project **342DS** to Category A at an estimated cost of about $50 million in money-of-the-day (MOD) prices, prior to submission to the Public Works Subcommittee for consideration with a view to seeking the Finance Committee's funding approval.

PROPOSAL AND JUSTIFICATION

2. The existing Tai Po sewage treatment works (TPSTW) serving the Tai Po district is a secondary treatment plant with a design capacity of 88 000 cubic metres (m^3) per day but without disinfection facilities. Treated effluent of the TPSTW is conveyed sequentially by two effluent pumping stations located in Tai Po and Sha Tin to the Kai Tak Nullah for disposal. In view of the continuing population growth and sewerage network expansion in the Tai Po district in recent years, the TPSTW is being further expanded and upgraded under the stage 5 extension works.

3. We are implementing the stage 5 extension works in phases, namely phases 1, 2A and 2B to cope with the progressive increase in sewage flow to the TPSTW due to the population growth. In May 2005 we started the construction of **222DS** – TPSTW, stage 5 phase 1. It will increase the design capacity of the TPSTW from 88 000 m^3 per day to 100 000 m^3 per day, and it is scheduled for completion at the end of 2009. We upgraded **342DS** to Category B in September 2005 to provide disinfection to the treated effluent of the TPSTW before disposal. The remaining stage 5 phase 2B works under **236DS** aim at further increasing the treatment capacity of the TPSTW to 120 000 m^3/day and are under the planning and design stage.

4. The treated effluent from the TPSTW is first transported to the Sha Tin sewage treatment works (STSTW). The combined Sha Tin and Tai Po effluents are then pumped through a sewage tunnel for discharge at the head of the Kai Tak Nullah. The proposed disinfection facilities at the TPSTW have been planned to dovetail with the disinfection programme for the STSTW under a Category A item **276DS** "STSTW Stage 3 extension". The disinfection facilities in the two sewage treatment works will significantly reduce the bacterial level in

the treated effluent before it is ultimately discharged into the Kai Tak Nullah, thereby improving the water quality.

5. The scope of **342DS** comprises –

(a) the provision of ultraviolet disinfection facilities; and

(b) ancillary works including power supply systems, control systems, pipeworks, building services installations, fire services installations, lifting appliances and road works.

6. A layout plan showing the scope of the proposed works is at Enclosure 1.

7. We plan to commence construction in February 2008 and commission the proposed disinfection facilities in March 2010.

FINANCIAL IMPLICATIONS

8. We estimate the capital cost[1] of the proposed works to be about $50 million in MOD prices and the annual recurrent costs[1] to be about $2.4 million.

9. Based on the current level of expenditure on operation and day-to-day maintenance of sewerage facilities, the proposed works will lead to an increase in the recurrent cost of providing sewage services by about 0.14%, which has been taken into account in determining the proposed sewage charges.

10. We estimate that the works will create some 17 jobs[1] (13 for labourers and another 4 for professional/technical staff) providing a total employment of 380 man-months.

PUBLIC CONSULTATION

11. On 16 March 2007, we consulted the Environment, Housing and Works Committee of the Tai Po District Council on the project and obtained their support for implementing the proposed works.

ENVIRONMENTAL IMPLICATIONS

12. We have completed an Environmental Impact Assessment (EIA) study in accordance with the EIA Ordinance for the whole stage 5 extension works, of which **342DS** forms a part. The EIA concluded that with the implementation

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

of mitigation measures, the proposed works would not give rise to unacceptable environmental impacts. For short-term impacts during construction, we will control noise, dust and site run-off to levels within established standards and guidelines, through the implementation of mitigation measures such as the use of quiet construction plant to reduce noise generation, water-spraying to reduce dust emission and proper pre-treatment of site run-off. We will also carry out close site inspections to ensure that these recommended mitigation measures and good site practices are properly implemented.

13. We have given due consideration to the need to minimize the construction and demolition (C&D) materials in the planning and design stages of the proposed works. We will 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 control the disposal of public fill and C&D waste to designated public fill reception facilities[2] 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 purposes.

14. We estimate that the project will generate about 3 800 tonnes of C&D materials. Of these, we will reuse about 500 tonnes (13%) on site, deliver 3 100 tonnes (82%) to public fill reception facilities for subsequent reuse, and dispose of 200 tonnes (5%) to landfills. The total cost of accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be about $110 000 for this project (based on a unit cost of $27/tonne for disposal at public fill reception facilities and $125/tonne[3] at landfills.)

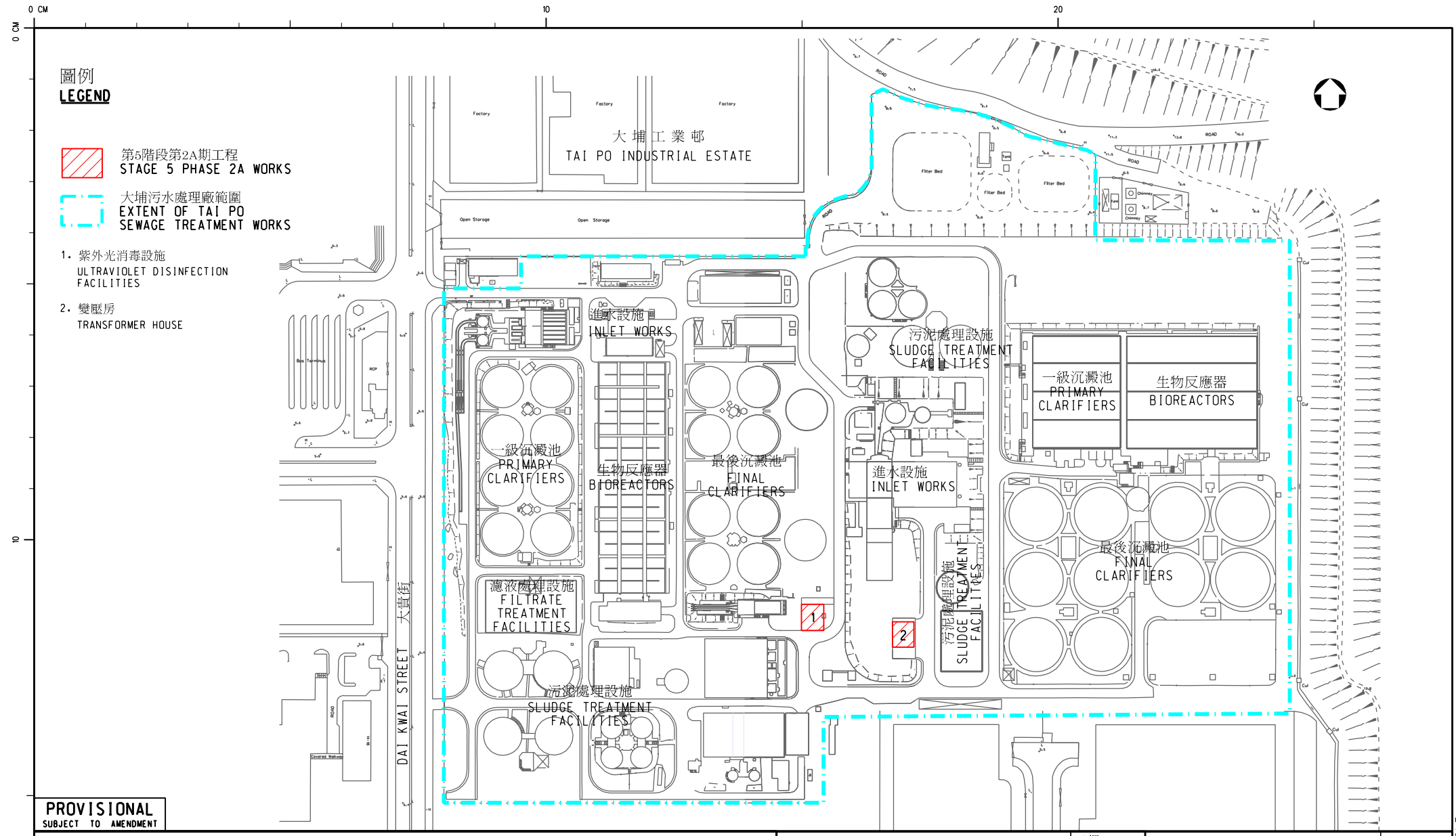
ADVICE SOUGHT

15. Members are invited to support our proposal to seek PWSC support in May 2007 for upgrading of **342DS** to Category A at an estimated cost of about $50 million in MOD prices, with a view to seeking the Finance Committee's funding approval in June 2007.

Environmental Protection Department
April 2007

[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.

[3] The 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.



PROVISIONAL
SUBJECT TO AMENDMENT

圖則名稱 drawing title

工務計劃項目第4342DS號
PWP ITEM NO. 4342DS
大埔污水處理廠第5階段第2A期工程-消毒設施
TAI PO SEWAGE TREATMENT WORKS STAGE 5 PHASE 2A - DISINFECTION

繪畫 drawn	SIGNED	Y.W. YIP	日期 date 22.03.2007
核對 checked	SIGNED	Ir T.K. LIU	日期 date 22.03.2007
批核 approved	SIGNED	Ir H.S. KAN	日期 date 22.03.2007

部門 office 污水工程部 SEWERAGE PROJECTS DIVISION

圖則編號 drawing no. DDN/342DS1/8015

比例 scale DIAGRAMMATIC

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

ENCLOSURE 1 附件1