

**For discussion
on 27 November 2006**

**Legislative Council
Panel on Environmental Affairs**

**4339DS – North District Sewerage
Stage 1 Phases 2B and 2C and Stage 2 Phase 1**

PURPOSE

This paper seeks Members' support for the submission of the proposal to upgrade part of **339DS** "North District sewerage, stage 1 phases 2B and 2C and stage 2 phase 1" to Category A at an estimated cost of \$130 million in money-of-the-day (MOD) prices to the Public Works Subcommittee for consideration with a view to seeking Finance Committee's funding approval.

PROPOSAL AND JUSTIFICATION

2. At present, domestic sewage from unsewered areas in North District is discharged into nearby watercourses after treatment by private treatment facilities. Most of these private treatment facilities are septic tanks and soakaway systems in village houses. The facilities in these areas are often ineffective in removing pollutants due to their close proximity to watercourses¹ and inadequate maintenance². Sewage discharged from these unsewered areas is a source of pollution to the existing watercourses and the receiving waters in Deep Bay.

3. In 1994, the Environmental Protection Department completed the North District Sewerage Master Plan Study (the Study) which reviewed the sewerage requirements for North District. As a long-term measure to address the water pollution problem in this district, the Study recommended, among other things, the extension of the existing trunk sewer along Castle Peak Road and Sha Tau Kok Road, and provision of pumping stations and village sewerage to collect and convey sewage from the unsewered areas in North District to the Shek Wu Hui sewage treatment plant for proper treatment and disposal. Apart from the

¹ Soakaway systems operate by allowing the effluent to percolate through the gravel so that pollutants would be removed in a natural manner. However, if a system is located in an area where the underground water table is high such as an area in close proximity to watercourses, it cannot function properly.

² Inadequate maintenance of septic tanks or soakaway systems would affect the pollutant removal efficiency of a system and may even lead to an overflow of effluent.

proposed works in North District, the Study recommended the provision of sewerage for seven unsewered areas in the northern part of Tai Po District as the sewage generated from these unsewered areas is also a source of pollution of the watercourses in North District. Upon completion of the proposed works recommended under the Study, we would be able to alleviate the water pollution problem in North District.

4. We have been implementing the scheme in stages. We completed the works under **219DS** “North District sewerage, stage 1 phase 1A” and **330DS** “North District sewerage, stage 1 phases 1B and 2A” in December 2002 and January 2006 respectively. We have engaged Consultants to carry out the planning and design works under **339DS** for the provision of sewerage to serve 34 unsewered village areas in North District and Tai Po District.

5. The full scope of the **339DS** comprises –

- (a) construction of about 4 kilometres of trunk sewer at Tai Wo Service Road West and Tai Wo Service Road East between Fanling and Tai Po;
- (b) provision of sewerage for 27 unsewered areas in North District; and
- (c) provision of sewerage for 7 unsewered areas in Tai Po District.

6. We propose to upgrade stage 1 phase 2B of **339DS** to Category A. This comprises the following works –

- (a) about 11 km of sewers, ranging from 150 mm to 400 mm in diameter for twelve villages in North District, namely, San Tong Po, Kan Lung Tsuen, San Wai, San Uk Tsuen, Ma Mei Ha, Ma Mei Ha Leng Tsui, Tung Kok Wai, Lo Wai, Tsz Tong Tsuen, Wing Ning Tsuen, Wing Ning Wai and Ma Wat Wai;
- (b) three sewage pumping stations, respectively in San Wai, Tung Kok Wai and Wing Ning Tsuen; and
- (c) about 1.4 km of rising mains, ranging from 100 mm to 250 mm in diameter, in association with the construction of the three sewage pumping stations mentioned in (b) above.

_____ A site plan showing the location of the proposed works is at Enclosure 1.

7. We plan to commence the construction of the proposed works under stage 1 phase 2B in March 2007 for completion in November 2010. We will

continue with the planning and design for the remaining works under **339DS** and target to complete their construction in December 2012.

FINANCIAL IMPLICATIONS

8. We estimate the capital costs³ of the proposed works to be about \$130 million in MOD prices and the annual recurrent costs to be about \$2.5 million.

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

10. We estimate that the proposed works will create about 79 jobs³ (64 for labourers and another 15 for professional/technical staff) providing a total employment of 2,772 man-months.

PUBLIC CONSULTATION

11. We consulted the District Development and Environmental Improvement Committee of the North District Council (the Committee) on 23 May 2005 on the proposed sewerage works for the unsewered areas in North District. Members supported the implementation of the proposed works. Subsequent to the meeting of 23 May 2005, some members of the Committee reflected that a number of the villages did not agree to the current policy that individual house owners would need to complete and pay for the final sewer connection works for their own houses. They requested the Government to consider completing the final sewer connections for individual houses as part of the proposed sewerage works. We attended the Committee meeting again on 18 July 2005 and the North District Council meetings on 13 October and 8 December 2005, explaining to the members that as the sewer connections would be made within private property and would be for private use it would be neither fair nor reasonable for the taxpayer to bear the cost. Furthermore for the Government to undertake the work could raise long-term liability issues in respect of maintenance. Taking these factors into account, and also considering that the value of the

³ These are the 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.

improvement to the property would accrue to the property owner, it is firmly established policy that the property owners should carry out the connections at their own cost.

ENVIRONMENTAL IMPLICATIONS

12. We completed an Environmental Review (ER) for the North District Sewerage Master Plan Study in 1994. The ER concluded that the proposed works would not cause adverse environmental impact and no Environmental Impact Assessment was required.

13. We will provide deodorization facilities and use quieter equipment at the sewage pumping stations in order to mitigate any odour and noise impacts. We will also limit the height of the sewage pumping stations to reduce any visual impact. For short term impacts during construction, we will control noise, dust and site run-off to levels within established standards and guidelines through implementation of mitigation measures, such as temporary noise barriers and quieter construction plant to reduce noise generation, water-spraying to reduce dust emission, and strict control on diversion of site run-off. We will also carry out regular site inspections to ensure that these recommended mitigation measures and good site practices are properly implemented.

14. 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 disposal of public fill and C&D waste to designated public filling reception facilities⁴ 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.

15. We estimate that the project will generate about 52 600 tonnes of C&D materials. Of these, we will reuse about 45 200 tonnes (86%) on site, and deliver 6 900 tonnes (13%) to public fill reception facilities for subsequent reuse. In addition, we will dispose of 500 tonnes (1%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites

⁴ 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.

is estimated to be about \$250,000 for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne⁵ at landfills.)

ADVICE SOUGHT

16. Members are invited to support the submission of the proposal to upgrade part of **339DS** to Category A at an estimated cost of \$130 million in MOD prices to the Public Works Subcommittee in December 2006 for consideration with a view to seeking the Finance Committee's funding approval in January 2007.

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⁵ 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/m³), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

