

**For discussion
on 22 April 2013**

**Legislative Council
Panel on Environmental Affairs**

**355DS — Outlying Islands sewerage, stage 2 – Lamma
village sewerage phase 2**

PURPOSE

This paper seeks Members' support for our proposal to upgrade part of **355DS — Outlying Islands sewerage, stage 2 – Lamma village sewerage phase 2** to Category A at an estimated cost of \$340.2 million in money-of-the-day (MOD) prices.

PROJECT SCOPE

2. The part of **355DS** that we propose to upgrade to Category A comprises the construction of —

- (a) about 9.1 kilometres (km) of sewers for 13 unsewered areas in Yung Shue Wan of Lamma Island, namely Sha Po New Village, Sha Po Old Village, Yung Shue Wan Back Street, Tai Shan West, Tai Shan East, Tai Shan Central, Ko Long, Tai Yuen Village, O Tsai, Po Wah Yuen, Yung Shue Long New Village, Yung Shue Long Old Village and Tai Peng;
- (b) one sewage pumping station (SPS) at O Tsai;
- (c) about 50 metres (m) of twin rising mains in association with construction of the SPS in (b) above; and
- (d) ancillary works.

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

JUSTIFICATIONS

3. At present, sewage from the unsewered areas in Yung Shue Wan of Lamma Island is often treated and disposed of by means of private on-site treatment facilities (such as septic tanks and soakaway (STS) systems). Such facilities might however be ineffective due to their proximity to watercourses ^[1] and inadequate maintenance ^[2]. Sewage from such unsewered areas has therefore been identified as a source of water pollution to nearby watercourses and the receiving waters of Lamma Island.

4. The aforesaid situation will persist unless sewerage infrastructure is made available to collect and treat sewage from the areas concerned properly. In this regard, the Environmental Protection Department has formulated as a long-term measure a programme under the Outlying Islands Sewerage Master Plan to provide public sewerage for these areas.

5. We now propose to upgrade part of **355DS** to Category A for taking forward the proposed sewerage works at 13 unsewered areas in Yung Shue Wan of Lamma Island, namely Sha Po New Village, Sha Po Old Village, Yung Shue Wan Back Street, Tai Shan West, Tai Shan East, Tai Shan Central, Ko Long, Tai Yuen Village, O Tsai, Po Wah Yuen, Yung Shue Long New Village, Yung Shue Long Old Village and Tai Peng. Upon completion of the proposed works, sewage collected from these areas will be conveyed to the Yung Shue Wan Sewage Treatment Works for proper treatment and disposal. This will minimise the discharge of pollutants into the environment and bring about sustainable improvement to the sanitary condition in the villages and the water quality of the nearby streams and near-shore water of Lamma Island.

6. We plan to submit the funding proposal for the proposed works under **355DS** to the Public Works Subcommittee for endorsement in June 2013 with a view to seeking funding approval of the Finance Committee (FC) in July 2013. The proposed works are expected to start in December 2013 for completion in July 2018. We will retain in Category B the remainder of **355DS**, which comprises the construction of about 6.3 km of sewers, 800 m of twin rising mains and two SPSs for seven other

¹ STS systems operate by allowing the effluent to percolate through gravels whereby pollutants are removed in a natural manner. However, if a STS system is located in an area where the ground water table is high, such as an area in proximity to watercourses, it will not function properly due to ineffective percolation.

² Inadequate maintenance of STS systems would affect their pollutant removal efficiency and may even lead to overflow of effluent.

unsewered areas in Yung Shue Wan of Lamma Island. Funding for the remainder will be sought at a later stage after completion of the design and preparatory work.

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the proposed works under **355DS** to be \$340.2 million in MOD prices.

8. We estimate that the proposed works will create about 96 jobs (78 for labourers and another 18 for professional/technical staff), providing a total employment of 4 680 man-months.

PUBLIC CONSULTATION

9. We consulted the Lamma Island (North) Rural Committee and the Tourism, Agriculture, Fisheries and Environmental Hygiene Committee of the Islands District Council on 29 May 2011 and 18 July 2011 respectively. Both committees supported the proposed works.

10. We gazetted the proposed works in accordance with the Water Pollution Control (Sewerage) Regulation under two schemes in August 2012 and January 2013. Two objections were received and one of them was subsequently withdrawn unconditionally. Funding approval of the FC for the works concerned will be sought upon completion of the statutory procedures regarding the remaining objection for authorisation of the schemes.

HERITAGE IMPLICATIONS

11. Part of the proposed works will be located within the Yung Shue Wan site of archaeological interest. There are no proposed monuments, declared monuments, graded historical buildings or Government historic sites identified by the Antiquities and Monuments Office (AMO) within the works area. Based on the preliminary environmental review (PER), areas to be impacted by the proposed works are assessed to be of no, very low or some archaeological potential. The areas identified to have some archaeological potential would require mitigation measures including rescue excavation along a section of the proposed sewer alignment before commencement of the proposed sewerage works at Sha Po Old Village; and an archaeological watching

brief along the proposed sewer alignments in Yung Shue Long New Village, Sha Po Old Village and Sha Po New Village during the construction works. We will closely work with the AMO to formulate and implement the above mitigation measures to minimise the adverse impact on the site of archaeological interest.

LAND ACQUISITION

12. We have to resume a total of 35 private agricultural lots (about 773 square metres) for implementation of the proposed works. The land resumption and clearance will not affect any households or domestic structures.

ENVIRONMENTAL IMPLICATIONS

13. The proposed works are not designated projects under the Environmental Impact Assessment Ordinance (Cap. 499). Drainage Services Department completed a PER for the proposed works in December 2010. It was concluded that, with the implementation of appropriate mitigation measures, the proposed works would not have long-term adverse environmental impacts.

14. For short-term environmental impacts during construction, we will control noise, dust and site run-off to levels within established standards and guidelines through implementation of environmental mitigation measures, such as the use of silenced construction equipment and noise barriers to reduce noise generation, water-spraying to reduce emission of fugitive dust, and proper treatment of site run-off before discharge. We will also carry out regular site inspections to ensure that these recommended mitigation measures and good site practices will be properly implemented on site. We have included a sum of \$2.9 million, (in September 2012 prices) in the project estimates of the proposed works under **355DS** for implementation of the necessary environmental mitigation measures.

15. At the planning and design stages, we have considered ways to reduce the generation of construction waste (e.g. to design the alignment of the proposed sewers in such a manner that excavation and demolition of existing structures will be minimised) 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 (PFRF) ^[3]. We will encourage the contractor to maximise the use of recycled/recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

16. 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 PFRF and landfills respectively through a trip-ticket system.

17. We estimate that the project will generate about 42 160 tonnes of construction waste in total. Of these, we will reuse 34 690 tonnes (82.3%) of the inert construction waste on site and deliver another 6 580 tonnes (15.6%) to PFRF for subsequent reuse. We will dispose of the remaining 890 tonnes (2.1%) of non-inert construction waste at landfills. The total cost of accommodating construction waste at PFRF and landfill sites is estimated to be about \$0.29 million for this project (based on a unit cost of \$27 per tonne for disposal at PFRF and \$125 per tonne ^[4] at landfills).

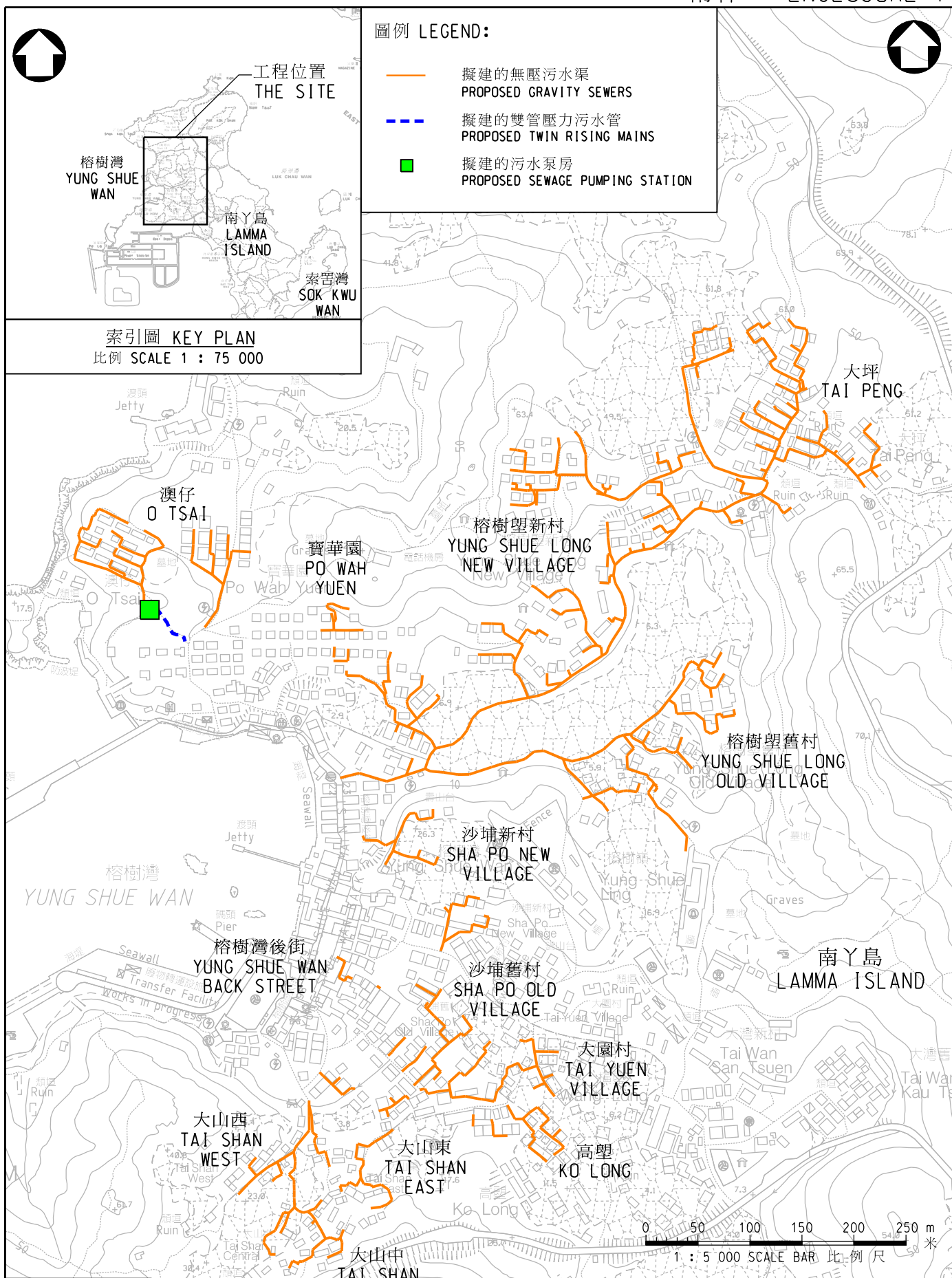
ADVICE SOUGHT

18. Members are invited to support our proposal for upgrading the proposed works under **355DS** to Category A.

Environmental Protection Department
Drainage Services Department
April 2013

³ PFRF are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste in PFRF requires a licence issued by the Director of Civil Engineering and Development.

⁴ 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 per m³), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.



圖例 LEGEND:

- 擬建的無壓污水渠
PROPOSED GRAVITY SEWERS
- - - 擬建的雙管壓力污水管
PROPOSED TWIN RISING MAINS
- 擬建的污水泵房
PROPOSED SEWAGE PUMPING STATION

榕樹灣
YUNG SHUE WAN

南丫島
LAMMA ISLAND

索罟灣
SOK KWU WAN

索引圖 KEY PLAN
比例 SCALE 1 : 75 000

大坪
TAI PENG

澳仔
O TSAI

寶華園
PO WAH YUEN

榕樹壟新村
YUNG SHUE LONG NEW VILLAGE

榕樹壟舊村
YUNG SHUE LONG OLD VILLAGE

榕樹灣
YUNG SHUE WAN

榕樹灣後街
YUNG SHUE WAN BACK STREET

沙埔新村
SHA PO NEW VILLAGE

沙埔舊村
SHA PO OLD VILLAGE

南丫島
LAMMA ISLAND

大山西
TAI SHAN WEST

大山東
TAI SHAN EAST

高壘
KO LONG

大山中
TAI SHAN CENTRAL



PROVISIONAL
SUBJECT TO AMENDMENT

版 no.	日期 date	修改項目 description	簡簽 initial
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圖則名稱 drawing title
工程計劃項目355DS號
- 離島污水收集系統第2階段 - 南丫
鄉村污水收集系統第2期工程
PWP ITEM No. 355DS
- OUTLYING ISLANDS SEWERAGE,
STAGE 2 - LAMMA VILLAGE SEWERAGE
PHASE 2

繪畫 drawn	日期 date	圖則編號 drawing no.	比例 scale
核對 checked	日期 date	DCM/2013/007	如圖示 AS SHOWN
批核 approved	日期 date	保留版權 COPYRIGHT RESERVED	
部門 office	顧問工程管理部 CONSULTANTS MANAGEMENT DIVISION		

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

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