

**For discussion
on 21 December 2015**

**Legislative Council
Panel on Environmental Affairs**

**381DS — Construction of additional sewage rising main and
rehabilitation of the existing sewage rising main
between Tung Chung and Siu Ho Wan**

PURPOSE

This paper seeks Members' support for our proposal to upgrade **381DS — Construction of additional sewage rising main and rehabilitation of the existing sewage rising main between Tung Chung and Siu Ho Wan** to Category A at an estimated cost of \$1,942.1 million in money-of-the-day (MOD) prices.

PROJECT SCOPE

2. The works under **381DS** that we propose to upgrade to Category A comprise :-
- (a) construction of an additional sewage rising main of about 6.5 kilometres (km) with diameter of 1 200 millimetres (mm) from the Tung Chung sewage pumping station (TCSPS) to the Siu Ho Wan sewage treatment works (SHWSTW);
 - (b) construction of the associated connection works for the additional sewage rising main;
 - (c) rehabilitation of the existing sewage rising main with diameter of 1 200 mm; and
 - (d) ancillary works ^[1].

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

¹ Ancillary works involve ground investigation and monitoring works.

JUSTIFICATIONS

3. The existing sewage rising main along Cheung Tung Road is the only pipework for the conveyance of sewage collected from the Tung Chung Town and Airport Island to the SHWSTW for treatment. It has been operating round the clock since 1997 for about 19 years and it is not possible to shut down the rising main or divert the sewage away for carrying out inspection or maintenance works. There is thus no viable means to ascertain the structural or serviceable condition of the existing sewage rising main. However, the existing trunk sewers upstream of the TCSPS have shown signs of serious corrosion, due to ageing as well as high hydrogen sulphide level in the sewage. The existing sewage rising main is assessed to be in a similar deteriorating condition with serious corrosion problem and hence a growing risk of structural failure. The existing sewage rising main, if collapsed, would cause spillage of raw sewage onto Cheung Tung Road and the adjacent North Lantau Highway. This would create severe disruption to road traffic and affect the transportation of airport users and goods, and therefore the operation of the Hong Kong International Airport (HKIA). In addition, the spillage could cause detrimental environmental impacts to the nearby coastal water. Construction of the proposed additional sewage rising main is needed to allow for rehabilitation of the existing rising main and avoid disruption of sewerage service due to reliance on a single rising main.

4. In addition, the planned housing development of Tung Chung New Town Extension and the planned expansion of the HKIA into a three-runway system are both tentatively targeted for population intake or operation in late 2023. The projected sewage flow is anticipated to increase to about 2 400 litre per second in 2023, exceeding the maximum allowable capacity of the existing sewage rising main of 1 840 litre per second, and increase further with continued population growth. The additional sewage rising main is required also to support the projected increase in sewage flow.

5. Upon the completion and operation of the new sewage rising main, the existing one will be temporarily decommissioned for rehabilitation. With the completion of the relevant works, both sewage rising mains would be in operation to enhance the sewage conveyance capacity, maintenance and reliability of the sewerage network.

6. We plan to submit the proposed works under **381DS** to the Public Works Subcommittee for support in early 2016 with a view to seeking funding approval of the Finance Committee (FC). Subject to funding approval of FC, we aim to commence construction of the proposed works in the third quarter of 2016 for commissioning the new rising main in mid-2023 and completing the rehabilitation of the existing rising main by end 2025.

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the proposed works under **381DS** to be \$1,942.1 million in MOD prices.

8. We estimate that the proposed works will create about 420 jobs (340 for labourers and another 80 for professional or technical staff), providing a total employment of 21 000 man-months.

PUBLIC CONSULTATION

9. We consulted the Tourism, Agriculture, Fisheries and Environmental Hygiene Committee of the Islands District Council (IsDC) on 30 September 2013, the Mui Wo Rural Committee on 14 November 2013 and the Traffic and Transport Committee of the IsDC on 19 January 2015. Both the Rural Committee and the Committees of the IsDC supported the proposed works.

ENVIRONMENTAL IMPLICATIONS

10. The proposed works are not designated projects under the Environmental Impact Assessment Ordinance (Cap.499). Drainage Services Department completed an Environmental Review for the proposed works in September 2014. It was concluded that, with the timely implementation of appropriate mitigation measures as mentioned in the following paragraphs, the proposed works would not have long-term adverse environmental impacts.

11. For short-term environmental impacts during construction, we will control noise, dust and site run-off to levels within the 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 in the project estimates the cost of necessary environmental mitigation measures.

12. 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 sewage rising main in such a manner that excavation and modification 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 need for disposal of inert construction waste to the public fill reception facilities (PFRF) ^[2]. We will also encourage the contractor to maximise the use of recycled or recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

13. At the construction stage, the contractor is required to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation measures 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 inert and non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert and non-inert construction waste at PFRF and landfills respectively through a trip-ticket system.

14. We estimate that the proposed works will generate about 208 000 tonnes of construction waste. Of these, we will reuse 128 000 tonnes (62%) of inert construction waste on site and deliver another 77 000 tonnes (37%) to PFRF for subsequent reuse. We will dispose of the remaining 3 000 tonnes (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 \$2.5 million for the proposed works (based on a unit charge rate of \$27 per tonne for disposal at PFRF and \$125 per tonne at landfills) as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation.

HERITAGE IMPLICATIONS

15. The proposed works under **381DS** will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites or buildings, sites of archaeological interest and government historic sites identified by the Antiquities and Monuments Office.

² 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.

LAND ACQUISITION

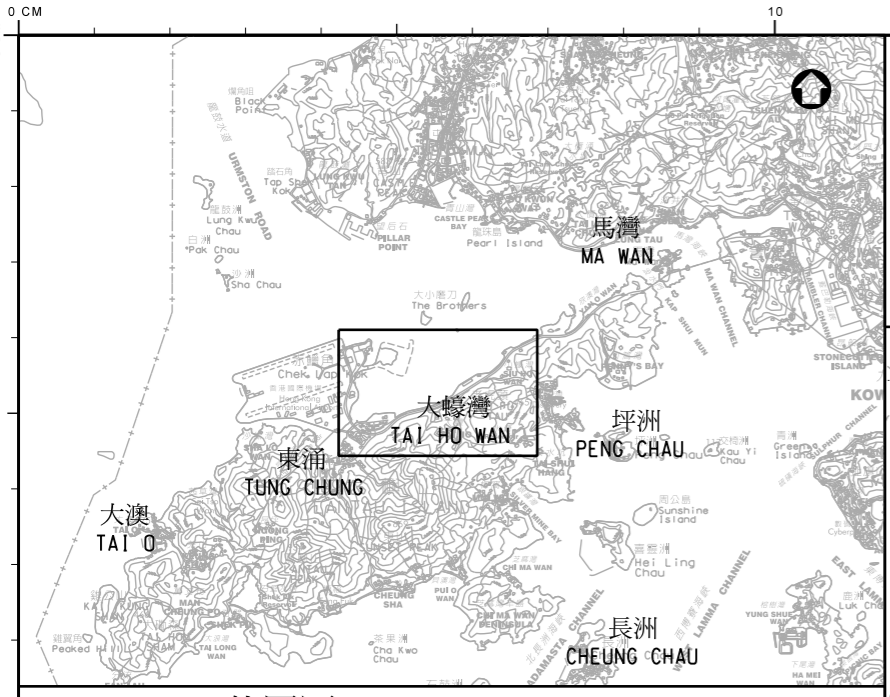
16. Only government lands will be involved for implementation of the proposed works. No land resumption is required.

ADVICE SOUGHT

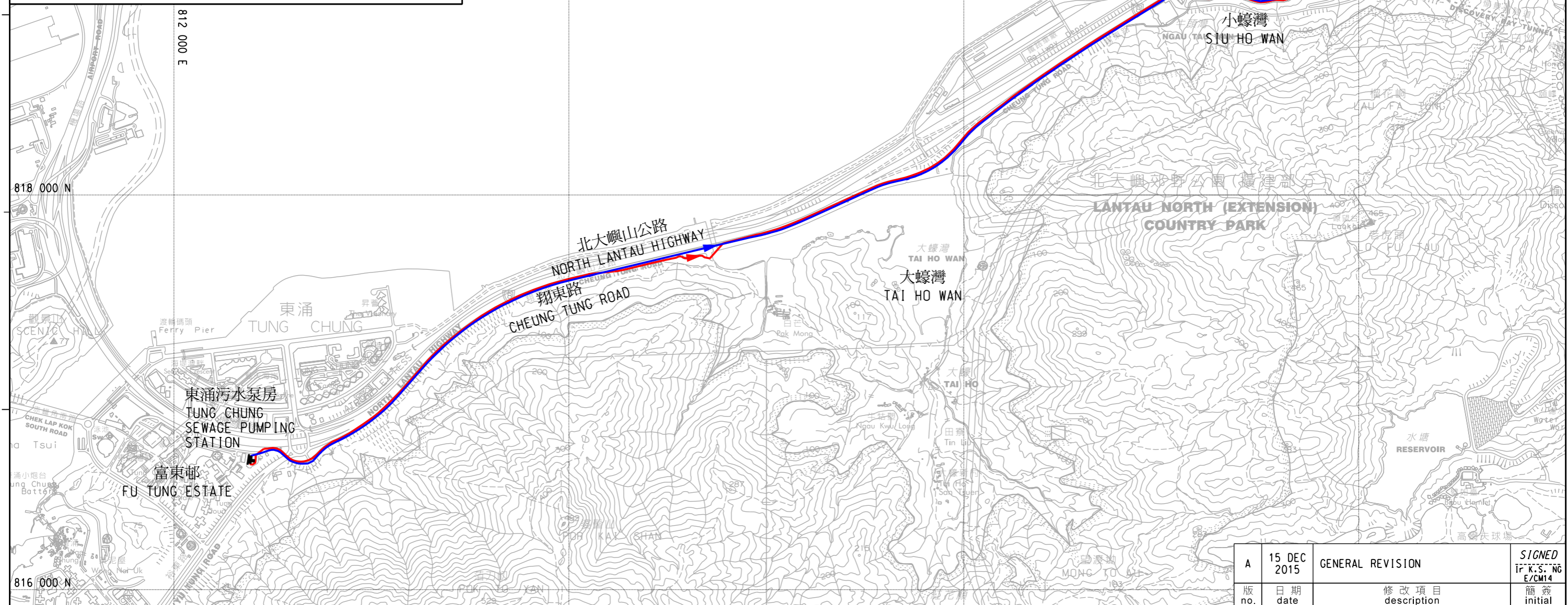
17. Members are invited to support our proposal to upgrade the proposed works under **381DS** to Category A.

**Environmental Protection Department
Drainage Services Department
December 2015**

圖例 LEGEND :
 擬建造的1200mm直徑加壓污水管
 PROPOSED CONSTRUCTION OF 1200mm DIA. SEWAGE RISING MAIN
 擬復修的現有1200mm直徑加壓污水管
 PROPOSED REHABILITATION OF THE EXISTING 1200mm DIA. SEWAGE RISING MAIN



位置圖 LOCATION PLAN
 比例 SCALE 1:300000



圖則名稱 drawing title
 工務計劃項目第4381DS號 -
 在東涌及小蠔灣之間增建一條加壓污水管及修復現有加壓污水管
 PWP ITEM No.4381DS -
CONSTRUCTION OF ADDITIONAL SEWAGE RISING MAIN AND REHABILITATION OF THE EXISTING SEWAGE RISING MAIN BETWEEN TUNG CHUNG AND SIU HO WAN

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批核 approved	SIGNED Ir W. F. WONG	日期 date	15 OCT 2015
部門 office	顧問工程管理部 CONSULTANTS MANAGEMENT DIVISION		

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