

**For discussion  
on 26 January 2015**

**Legislative Council  
Panel on Environmental Affairs**

**272DS – Port Shelter sewerage, stage 2**

**408DS – Yuen Long effluent polishing plant**

**PURPOSE**

This paper seeks Members' support for our proposals to —

- (a) upgrade part of **272DS – Port Shelter sewerage, stage 2** to Category A at an estimated cost of \$68.9 million; and
- (b) upgrade part of **408DS – Yuen Long effluent polishing plant (YLEPP)** to Category A at an estimated cost of \$88.9 million.

in money-of-the-day (MOD) prices.

**PROJECT SCOPE**

**272DS – Port Shelter sewerage, stage 2**

2. The part of **272DS** that we propose to upgrade to Category A comprises the construction of —

- (a) about 1.3 kilometres (km) of trunk sewers along Hiram's Highway between Marina Cove and Ho Chung;
- (b) about 620 metres of trunk sewers along Ho Chung Road and Luk Mei Tsuen Road; and
- (c) ancillary works.

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

## **408DS – Yuen Long effluent polishing plant**

3. The part of **408DS** that we propose to upgrade to Category A comprises:

- (a) the engagement of consultants for the YLEPP that includes –
  - (i) the investigation study, preliminary and detailed design of sewage and sludge treatment facilities of the YLEPP;
  - (ii) the impact assessments on the environmental, drainage, geotechnical, traffic and other aspects necessary for the design of the YLEPP;
  - (iii) the public engagement and consultation with relevant stakeholders;
  - (iv) the preparation of tender documents and assessment of tenders; and
  - (v) the supervision of the site investigation, surveys and laboratory testing relating to (b) below.
  
- (b) the site investigation, surveys and laboratory testing in support of the detailed design and impact assessments.

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A site plan showing the project boundary is at **Enclosure 2**.

## **JUSTIFICATIONS**

### **272DS – Port Shelter sewerage, stage 2**

4. At present, sewage from a number of village areas in the Port Shelter catchment is mostly treated and disposed of by means of private on-site treatment facilities (such as septic tanks and soakaway (STS) systems). These facilities are however not as effective in removing pollutants as proper sewerage infrastructure, in particular if maintenance of the facilities is not adequate, sewage from these unsewered areas could be a source of water pollution to the receiving waters of Port Shelter.

5. The Environmental Protection Department has formulated a long-term programme under the Port Shelter Sewerage Master Plan to expand the public sewerage in the Port Shelter catchment. The programme is divided into three stages for implementation. Stage 1 has been completed whereas Stages 2 and 3 are being implemented in phases.

6. We now propose to upgrade part of **272DS** to Category A for implementation of the proposed works as set out in paragraph 2 under Stage 2 of Port Shelter sewerage. The works proposed for upgrade aim to provide

trunk sewers along Hiram's Highway (from Marina Cove to Ho Chung), Ho Chung Road and Luk Mei Tsuen Road for the collection and transfer of sewerage from the unsewered areas in Ho Chung alongside Hiram's Highway to the proposed local sewage treatment plant at Ho Chung in subsequent phases of Stage 2 works under planning. This will minimise the discharge of pollutants into the environment and bring about sustainable improvement to the water quality of Port Shelter.

7. In order to achieve cost synergy, avoid repeated road opening and any interfacing problems that may arise from multiple contractors working on the same site, subject to funding approval of the Finance Committee (FC), construction of the proposed works will be entrusted to the Highways Department (HyD) for implementation in conjunction with the proposed roadworks to be constructed under **703TH – Dualling of Hiram's Highway between Clear Water Bay Road and Marina Cove and improvement to local access to Ho Chung.**

8. We plan to submit the funding proposal for the proposed works mentioned in paragraph 2 under **272DS** to the Public Works Subcommittee (PWSC) for support in early 2015 with a view to seeking funding approval of the FC in the second quarter of 2015. Subject to approval of the FC, the proposed works are expected to commence in the third quarter of 2015 for completion by end 2020. We will retain the remainder of **272DS** in Category B, which involves construction of about 28 km of sewers with associated pumping stations and two local sewage treatment plants in Ho Chung and Wo Mei for unsewered areas in the Port Shelter catchment. Funding for the subsequent phases of Stage 2 works under **272DS** will be sought at a later stage after completion of the design and preparatory work.

#### **408DS – Yuen Long effluent polishing plant**

9. The Yuen Long sewage treatment works (YLSTW) currently provides secondary level treatment to sewage collected from Yuen Long Old Town, Yuen Long Industrial Estate, Kam Tin, San Tin and Pat Heung areas with a capacity of 70 000 cubic metres (m<sup>3</sup>) per day.

10. According to the latest planning data and housing development programme, the total volume of sewage to be treated by the YLSTW is estimated to reach 150 000 m<sup>3</sup> per day in 2036 arising from major housing developments under planning as well as the village sewerage projects in Yuen Long District.

11. It is therefore necessary to increase the treatment capacity of the YLSTW from 70 000 m<sup>3</sup> per day to 150 000 m<sup>3</sup> per day. However, this increase in treatment capacity if retained at secondary level treatment will

generate additional residual pollution loading to Deep Bay. To keep pace with the latest standards and to reflect the YLSTW's enhanced functionality, it is also necessary to concurrently upgrade the YLSTW to an effluent polishing plant with tertiary treatment level to reduce the residual pollution loading of the treated effluent.

12. We now propose to upgrade part of **408DS** to Category A for engaging consultants to carry out an investigation study, design and associated investigation works for the YLEPP. Subject to PWSC's support, we aim to seek funding approval of the FC in the second quarter of 2015, with a view to commencing the investigation study, design and associated investigation works in the fourth quarter of 2015 for completion in phases in 2018 to 2021.

13. We will retain the remainder of **408DS** in Category B for the construction of the YLEPP. Funding for the upgrading works will be sought at a later stage after completion of the investigation study, design and associated investigation works.

## FINANCIAL IMPLICATIONS

14. We estimate the total capital cost of the proposed works under **272DS** and **408DS** to be \$157.8 million in MOD prices made up as follows —

	<b>\$ million (MOD)</b>
(a) <b>272DS</b> — Port Shelter sewerage, stage 2 <i>(part)</i>	68.9
(b) <b>408DS</b> — Yuen Long effluent polishing plant <i>(part)</i>	88.9
<b>Total</b>	<b>157.8</b>

15. We estimate that the proposed works under **272DS** and **408DS** will create about 25 jobs (11 for labourers and another 14 for professional or technical staff) providing a total employment of 1 570 man-months.

## PUBLIC CONSULTATION

### **272DS – Port Shelter sewerage, stage 2**

16. We consulted Sai Kung Rural Committee on the proposed works on 26 September 2001 and 25 October 2007. We also consulted the Housing

and Environmental Hygiene Committee under Sai Kung District Council on 15 April 2008 and 14 March 2013. Both Committees supported the proposed works.

#### **408DS – Yuen Long effluent polishing plant**

17. We consulted the Ping Shan Rural Committee and the Environmental Improvement Committee of the Yuen Long District Council on the proposed investigation study, design and associated investigation works on 24 October and 10 November 2014 respectively. Both committees generally supported the proposed investigation study, design and associated investigation works.

### **ENVIRONMENTAL IMPLICATIONS**

#### **272DS – Port Shelter sewerage, stage 2**

18. The proposed works are not designated projects under the Environmental Impact Assessment Ordinance (EIAO) (Cap.499). Drainage Services Department completed an Environmental Review that covers the proposed works in December 2010 and it was concluded that the proposed works would not have long-term adverse environmental impacts upon implementation of appropriate mitigation measures.

19. 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 a sum of \$1.4 million (in September 2014 prices) in the project estimates of the proposed works for implementation of the necessary environmental mitigation measures.

20. At the planning and design stages, we have considered ways to reduce the generation of construction waste where possible. For example, in addition to the need for meeting the hydraulic and traffic requirements, we have also designed the alignment of the proposed sewers in such a manner that excavation and demolition of existing structures will be minimised. In addition, we will require the contractors 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) <sup>[1]</sup>. We will encourage the contractors to maximise the use of recycled or recyclable inert construction waste, as well as the use of non-timber formwork to further minimise the generation of construction waste.

21. At the construction stage, we will require the contractors 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 contractors to separate the inert portion from 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.

22. We estimate that the proposed works will generate about 20 500 tonnes of construction waste. Of these, we will reuse 14 100 tonnes (69%) of inert construction waste on site and deliver another 5 400 tonnes (26%) to PFRF for subsequent reuse. We will dispose of the remaining 1 000 tonnes (5%) of non-inert construction waste at landfills. The total costs for accommodating construction waste at PFRF and landfill sites are estimated to be about \$0.27 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).

#### **408DS – Yuen Long effluent polishing plant**

23. The proposed investigation study, design and associated investigation works are not designated projects under the EIAO and will not cause any long-term environmental impact. We have included a sum of \$0.3 million (in September 2014 prices) in the project estimate the cost of implementing suitable mitigation measures to control the short-term environmental impacts arising from the site investigation works.

24. The proposed site investigation works will only generate a small quantity of construction waste. We will require the consultants to minimize the generation of construction waste and to reuse or recycle construction waste as much as possible during the implementation of the construction stage of the project in future.

25. The construction and operation of the YLEPP is a designated project under Schedule 2 of the EIAO and an Environmental Permit is required. We will conduct environmental impact assessment (EIA) under the

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<sup>1</sup> 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.

investigation study to address the environmental impacts and prepare EIA report in accordance with the requirements under the EIAO, and propose mitigation measures if necessary. We will submit the EIA report to the Director of Environmental Protection for approval under the EIAO. We will follow the statutory procedures, including provision of the EIA report for inspection and comment by the public and the Advisory Council on the Environment.

## **HERITAGE IMPLICATIONS**

26. The proposed works under **272DS** and the proposed investigation study, design and associated investigation works under **408DS** 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.

## **LAND ACQUISITION**

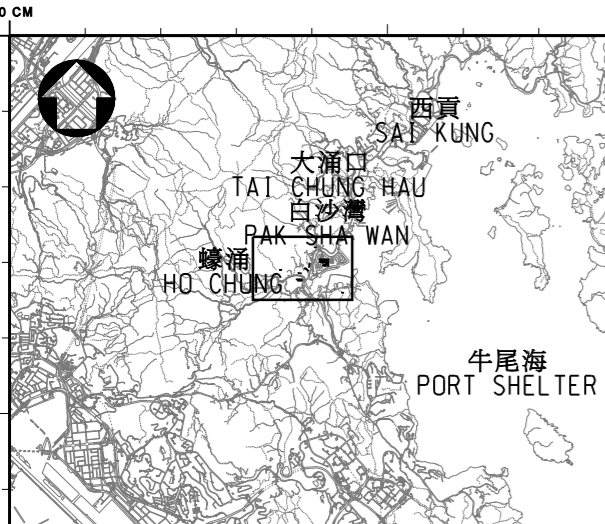
27. Land resumption is not required for the proposed works under **272DS** and the proposed investigation study, design and associated investigation works under **408DS**.

## **ADVICE SOUGHT**

28. Members are invited to support our proposals for upgrading the proposed works under **272DS** and **408DS** to Category A.

**Environmental Protection Department**  
**Drainage Services Department**  
**January 2015**

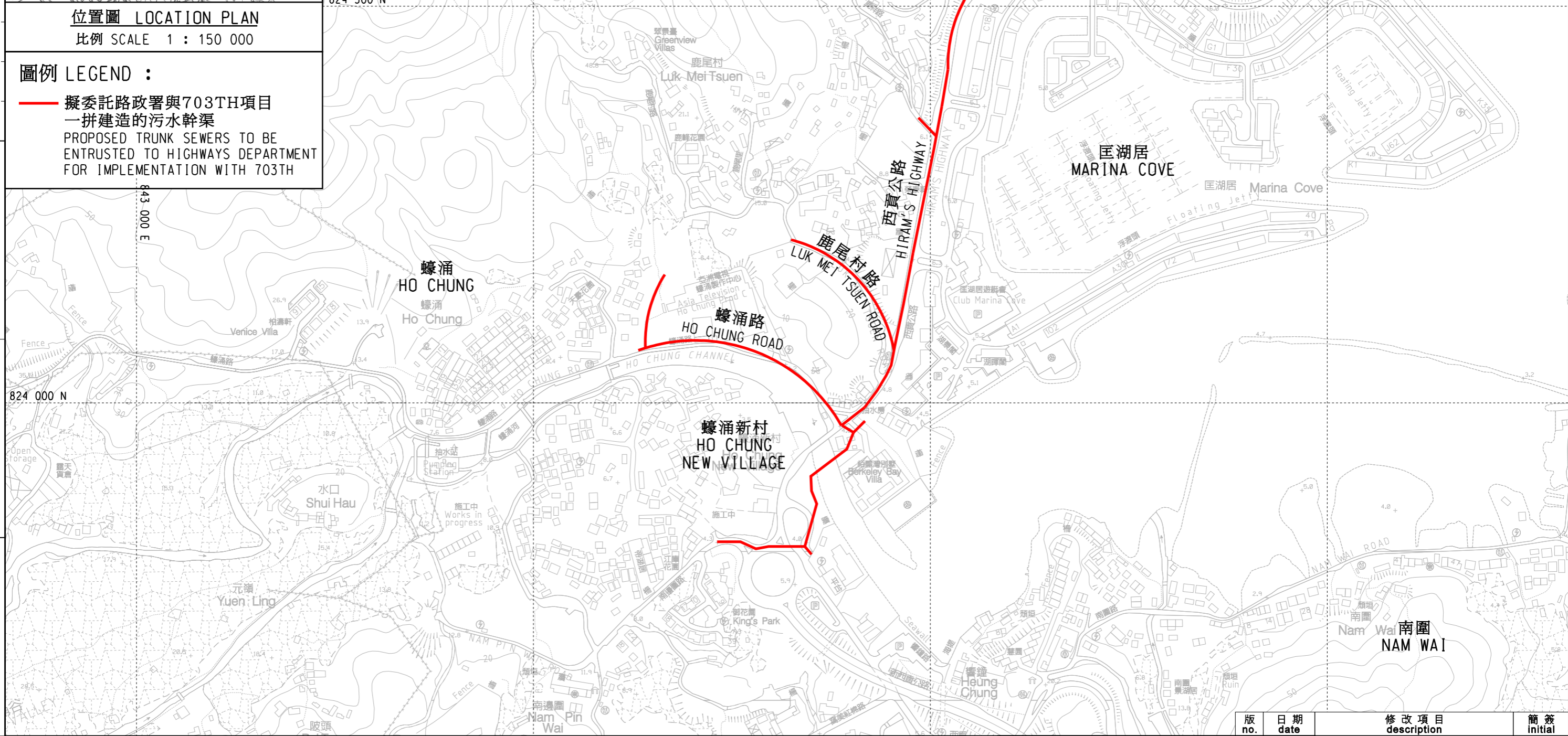




位置圖 LOCATION PLAN  
比例 SCALE 1 : 150 000

圖例 LEGEND :

— 擬委託路政署與703TH項目一併建造的污水幹渠  
PROPOSED TRUNK SEWERS TO BE ENTRUSTED TO HIGHWAYS DEPARTMENT FOR IMPLEMENTATION WITH 703TH



圖則名稱 drawing title  
牛尾海污水收集系統第2階段工程  
PORT SHELTER SEWERAGE, STAGE 2

繪畫 drawn	SIGNED K. H. CHAN	日期 date	15 JAN 2015
核對 checked	SIGNED Ir S. P. CHOW	日期 date	15 JAN 2015
批核 approved	SIGNED Ir C. C. YEUNG	日期 date	15 JAN 2015
部門 office	顧問工程管理部 CONSULTANTS MANAGEMENT DIVISION		

修改項目 description	圖則編號 drawing no.	簡簽 initial
	DCM/2015/001	比例 scale 1 : 5000 OR AS SHOWN
保留版權 COPYRIGHT RESERVED		
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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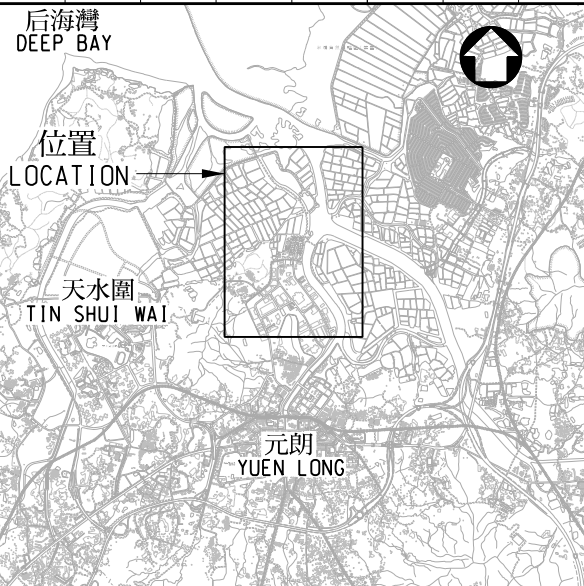
附件二  
ENCLOSURE 2

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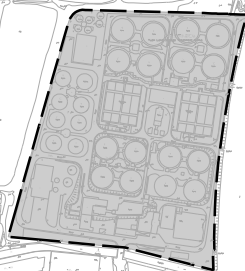
A4 297x210



索引圖 KEY PLAN  
比例 SCALE 1:100 000

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元朗工業邨  
YUEN LONG  
INDUSTRIAL ESTATE

錦田河 KAM TIN RIVER

南生圍  
NAM SANG WAI

山貝河 SHAN PUJ RIVER

圖例 LEGEND:



擬建元朗淨水設施位於  
現有元朗污水處理廠範圍之內  
PROPOSED YUEN LONG EFFLUENT  
POLISHING PLANT LOCATED WITHIN THE  
SITE BOUNDARY OF EXISTING YUEN LONG  
SEWAGE TREATMENT WORKS

版 no.	日期 date	修改項目 description	簡簽 initial
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圖則名稱 drawing title

工程計劃項目第408DS號  
PWP ITEM NO. 408DS  
- YUEN LONG EFFLUENT  
POLISHING PLANT

繪畫 drawn	K. W. CHAN	日期 date	03 NOV 2014
核對 checked	Ir S. K. PUN	日期 date	03 NOV 2014
批核 approved	Ir L. K. TSANG	日期 date	03 NOV 2014
部門 office	污水工程部 SEWERAGE PROJECTS DIVISION		

圖則編號 drawing no.	DSP/S1403/11022	比例 scale	1:10000 OR AS SHOWN
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