

**For discussion
on 23 February 2009**

**Legislative Council
Panel on Environmental Affairs**

Provision of sewerage in Yuen Long and Kam Tin

PURPOSE

This paper seeks Members' support for the Administration's proposed funding application to Public Works Subcommittee (PWSC) and Finance Committee (FC) for upgrading part of the following two projects to Category A –

- (a) **235DS** – Yuen Long and Kam Tin sewerage and sewage disposal at an estimated cost of about \$520 million in money-of-the-day (MOD) prices; and
- (b) **274DS** – Yuen Long and Kam Tin sewerage, stage 3 at an estimated cost of about \$190 million in MOD prices.

PROPOSAL AND JUSTIFICATION

2. Apart from Yuen Long Town Centre and Tin Shui Wai, the remaining areas in the Northwest New Territories (NWNT) are largely not served by public sewers. Sewage from these unsewered areas is currently treated and disposed of by means of privately owned sewage treatment plants or septic tank and soakaway systems. These privately owned facilities 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 nearby stream courses and the receiving waters of Deep Bay. The lack of public sewerage also hinders future development in these areas.

¹ Soakaway systems operate by allowing the effluent to percolate through the gravel whereby 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 their pollutant removal efficiency and may even lead to an overflow of effluent.

3. As a long term measure to address water pollution problem and to meet future development needs in NWNT, we have included **235DS** and **274DS** in the Public Works Programme with a view to providing public sewerage in Yuen Long and Kam Tin areas.

PROJECT SCOPE AND NATURE

235DS –Yuen Long and Kam Tin sewerage and sewage disposal

4. The sewerage works under **235DS** that we propose to part-upgrade to Category A cover the provision of trunk sewer systems and a new sewage pumping station in Yuen Long South to serve a total projected population of about 38 000 and upgrading of relevant sewerage facilities in Ha Tsuen area. The sewage collected from Yuen Long South will be conveyed to San Wai sewage treatment works for treatment and disposal.

5. While the proposed work is the first package under **235DS**, the remaining trunk sewerage and associated pumping facilities for other areas in Yuen Long and Kam Tin and upgrading of Yuen Long sewage treatment works will be implemented in future packages.

6. The scope of the proposed works under **235DS** to be part-upgraded comprises –

- (a) construction of about 9 kilometres (km) of trunk sewers in Yuen Long South and Ha Tsuen areas;
- (b) construction of a new sewage pumping station near Shui Tsiu San Tsuen Road in Yuen Long South and expansion of the existing Ha Tsuen sewage pumping station; and
- (c) ancillary works.

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

7. We plan to commence construction of the proposed works in mid 2009 for completion in late 2013.

274DS – Yuen Long and Kam Tin sewerage, stage 3

8. The sewerage works under **274DS** that we propose to part-upgrade to Category A cover the provision of sewerage facilities to serve a total projected population of about 13 600 in nine unsewered areas in Wang Chau of Yuen Long.

The sewage collected from the unsewered areas will be conveyed via existing sewerage to Yuen Long sewage treatment works for treatment and disposal.

9. Works under **274DS** are being implemented by phases. Phase 1 work which comprised construction of about 2.3 km trunk sewers along Yuen Long Highway and a sewage pumping station near Pok Oi Interchange was upgraded to Category A as **335DS** entitled “Yuen Long and Kam Tin sewerage, stage 3 phase 1” in June 2002 and the construction works were completed in August 2006. The part that we now propose to upgrade to Category A covers the construction of sewerage works at nine unsewered areas in Wang Chau of Yuen Long. Sewerage works for another 25 unsewered areas in Yuen Long under **274DS** will be implemented in future phases.

10. The scope of the proposed works under **274DS** to be part-upgraded comprises –

- (a) construction of about 9 km of sewers at nine unsewered areas in Wang Chau of Yuen Long, namely Lam Uk Tsuen, Yuk Yat Garden, Yeung Uk Tsuen, Tung Tau Wai, Tung Tau Wai San Tsuen, Chung Sam Wai, Fuk Hing Tsuen, Sai Tau Wai and Ting Fook Villas;
- (b) construction of a new sewage pumping station near Tung Tau Industrial Area; and
- (c) ancillary works.

A site plan showing the proposed works is at **Enclosure 2**.

11. We plan to commence construction of the proposed works in mid 2009 for completion in mid 2013.

FINANCIAL IMPLICATIONS

12. We estimate the capital cost³ of the proposed works to be about \$710 million in MOD prices made up as follows –

³ These are the latest estimates of the capital costs and new job opportunities. We will finalize the project costs and new job opportunities, and include the cost breakdown, prior to submitting the proposals to the PWSC for consideration.

	\$ million (MOD)
(a) 235DS – Yuen Long and Kam Tin sewerage and sewage disposal (proposed part)	520
(b) 274DS – Yuen Long and Kam Tin sewerage, stage 3 (proposed part)	190
Total	<hr/> 710 <hr/>

13. We estimate that the proposed works will create about 240 jobs³ (190 for labourers and another 50 for professional/technical staff) providing a total employment of 8 990 man-months as follows –

Project	No. of jobs for		Total no. of jobs created	Employment in man-months
	Labourers	Professional/ Technical staff		
235DS (proposed part)	135	35	170	6 230
274DS (proposed part)	55	15	70	2 760
Total	190	50	240	8 990

PUBLIC CONSULTATION

235DS –Yuen Long and Kam Tin sewerage and sewage disposal

14. We consulted the Shap Pat Heung Rural Committee, Ha Tsuen Rural Committee and the Environmental Improvement Committee of the Yuen Long District Council on 7 September 2007, 5 March 2008 and 19 May 2008 respectively. They supported the proposed works. Furthermore, we consulted the local community including the Village Representatives between November 2007 and May 2008 and they supported the proposed works.

274DS – Yuen Long and Kam Tin sewerage, stage 3

15. We consulted the Ping Shan Rural Committee and the Environmental Improvement Committee of the Yuen Long District Council on 14 November 2006 and 23 July 2007 respectively on the proposed works. They supported the

implementation of the proposed works. Furthermore, we consulted the local community including the Village Representatives between January and March 2007 and they supported the proposed works.

ENVIRONMENTAL IMPLICATIONS

16. Under **235DS**, the proposed expansion of Ha Tsuen sewage pumping station is a designated project under the Environmental Impact Assessment Ordinance (EIAO). We have assessed its potential environmental impacts and concluded that it will not cause long term adverse environmental impact. We have applied for an Environmental Permit from the Environmental Protection Department (EPD) in December 2008. The proposed sewers and sewage pumping station near Shui Tsiu San Tsuen Road in Yuen Long South are not designated projects under EIAO and will not cause long term adverse environmental impact.

17. Under **274DS**, the proposed sewage pumping station near Tung Tau Industrial Area is a designated project under the EIAO. We have assessed its potential environmental impacts and concluded that it will not cause long term adverse environmental impact. We have applied for an Environmental Permit from the EPD in December 2008. The proposed sewers are not designated projects under EIAO and will not cause long term adverse environmental impact.

18. For short term impacts during construction of the proposed works under **235DS** and **274DS**, we will control noise, dust and site run-off within the established standards and guidelines through the implementation of 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 close site inspection to ensure that these recommended mitigation measures and good site practice are properly implemented on site.

19. We will implement the mitigation measures set out in the Environmental Permits to be issued by the Director of Environmental Protection.

20. We have considered measures in the planning and design stages to reduce the generation of construction waste where possible. In addition, we will require the contractor to reuse inert construction waste (e.g. excavated soil and demolished concrete) on site or in other suitable construction sites as far as possible, in order to minimize the disposal of inert construction waste to public fill reception facilities⁴.

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

We will encourage the contractor to maximize the use of recycled or recyclable inert construction waste, as well as the use of non-timber formwork to further minimize the generation of construction waste.

21. We will also 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 approval 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 to public fill reception facilities and landfills respectively through a trip-ticket system.

22. We estimate that the two projects will generate in total about 264 400 tonnes of construction waste as shown in the table below. Of these, we will reuse about 175 300 tonnes (66%) of inert construction waste on site and deliver 71 500 tonnes (27%) of inert construction waste to public fill reception facilities for subsequent reuse. In addition, we will dispose of 17 600 tonnes (7%) of non-inert construction waste at landfills. The total cost for accommodating the construction waste at public fill reception facilities and landfill sites is estimated to be about \$4.1 million for these projects (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne⁵ at landfills.)

Project	Construction waste generated (tonnes)	Inert construction waste to be reused on site (tonnes)	Inert construction waste to be delivered to public fill reception facilities (tonnes)	Non-inert construction waste to be disposed of at landfills (tonnes)
235DS (proposed part)	241 400	162 800	62 900	15 700
274DS (proposed part)	23 000	12 500	8 600	1 900
Total	264 400	175 300	71 500	17 600

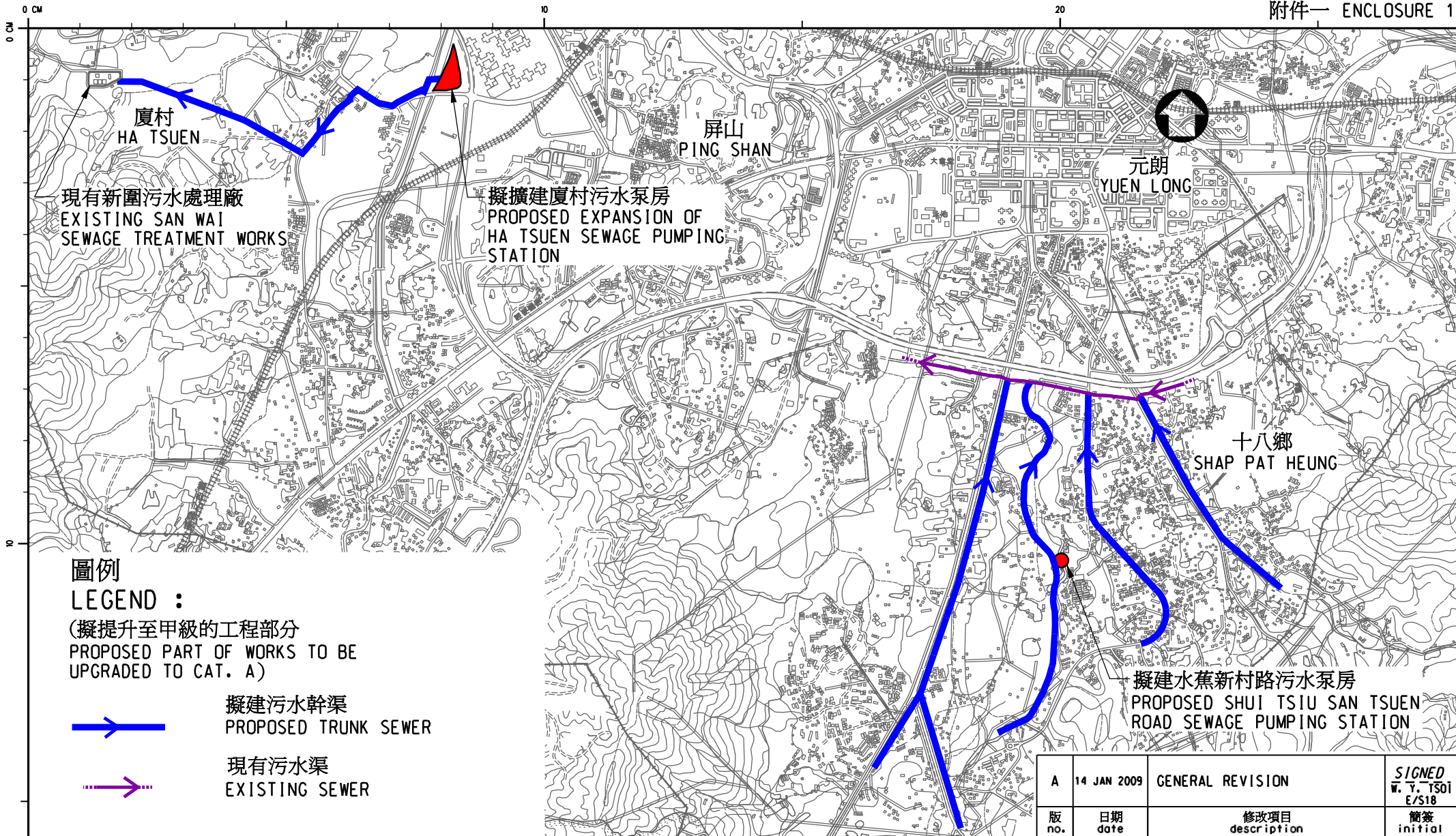
⁵ The estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m³), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

ADVICE SOUGHT

23. Members are invited to support the Administration's proposal to upgrade part of the following two projects to Category A –

- (a) **235DS** – Yuen Long and Kam Tin sewerage and sewage disposal at an estimated cost of \$520 million in MOD prices for consideration by the PWSC in April 2009 with a view to seeking funding approval by the FC in May 2009; and
- (b) **274DS** – Yuen Long and Kam Tin sewerage, stage 3 at an estimated cost of \$190 million in MOD prices for consideration by the PWSC with a view to seeking funding approval by the FC both in June 2009.

Environmental Protection Department
February 2009



圖則名稱 drawing title

工務計劃項目第235DS號
元朗及錦田污水收集系統及污水排放計劃
PWP ITEM NO. 235DS
YUEN LONG AND KAM TIN SEWERAGE AND SEWAGE DISPOSAL

繪畫 drawn SIGNED M. W. CHEUNG

日期 date 11 DEC 2008

圖則編號 drawing no.

DDN/235DS1/8001A

SIGNED
W. Y. TSOI
E/S18

比例 scale
1:25000
OR
AS SHOWN

核對 checked SIGNED Ir W. Y. TSOI

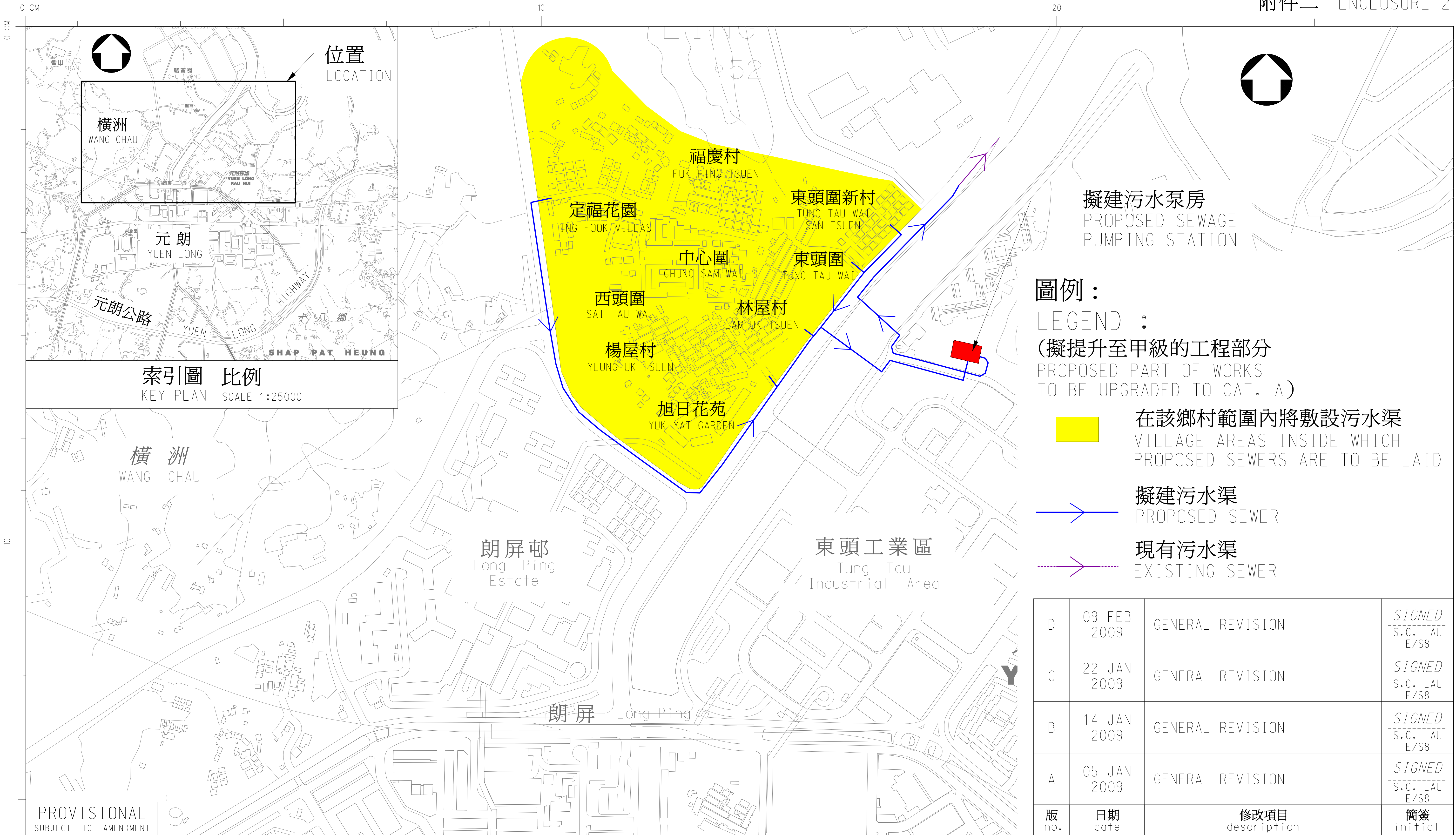
日期 date 17 DEC 2008

批核 approved SIGNED Ir C. H. LAI

日期 date 17 DEC 2008

部門 office 污水工程部
SEWERAGE PROJECTS DIVISION

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DRAINAGE SERVICES DEPARTMENT
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擬建污水泵房
PROPOSED SEWAGE
PUMPING STATION

圖例：
LEGEND：
(擬提升至甲級的工程部分
PROPOSED PART OF WORKS
TO BE UPGRADED TO CAT. A)

- 在該鄉村範圍內將敷設污水渠
VILLAGE AREAS INSIDE WHICH
PROPOSED SEWERS ARE TO BE LAID
- 擬建污水渠
PROPOSED SEWER
- 現有污水渠
EXISTING SEWER

D	09 FEB 2009	GENERAL REVISION	<i>SIGNED</i> S.C. LAU E/S8
C	22 JAN 2009	GENERAL REVISION	<i>SIGNED</i> S.C. LAU E/S8
B	14 JAN 2009	GENERAL REVISION	<i>SIGNED</i> S.C. LAU E/S8
A	05 JAN 2009	GENERAL REVISION	<i>SIGNED</i> S.C. LAU E/S8
版 no.	日期 date	修改項目 description	簡簽 initial

圖則名稱 drawing title 工務計劃項目第274DS號 元朗及錦田污水收集系統第三階段 PWP ITEM NO. 274DS YUEN LONG AND KAM TIN SEWERAGE, STAGE 3	繪 畫 drawn	SIGNED M. W. CHEUNG	日期 date 10 DEC 2008	圖則編號 drawing no. DDN/274DS1/8001D	比例 scale 1 : 7500 OR AS SHOWN	
	核 對 checked	SIGNED Ir S. C. LAU	日期 date 12 DEC 2008			
	批 核 approved	SIGNED Ir C. H. LAI	日期 date 12 DEC 2008	保 留 版 權 COPYRIGHT RESERVED		
	部 門 office	污 水 工 程 部 SEWERAGE PROJECTS DIVISION				香港特別行政區政府渠務署 DRAINAGE SERVICES DEPARTMENT GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION