

**For discussion
on 23 March 2020**

**Legislative Council
Panel on Environmental Affairs**

Provision of Sewerage Network in Tseung Kwan O and Tuen Mun

PURPOSE

This paper seeks Members' views on our proposals to upgrade the following sewerage items to Category A for taking forward the provision of sewerage network to parts of the unsewered areas in Tseung Kwan O and Tuen Mun -

- (a) **4362DS – Sewerage for Ma Yau Tong Village, Tseung Kwan O** at an estimated cost of \$179.4 million in money-of-the-day (MOD) prices; and
- (b) part of **4346DS – Upgrading of Tuen Mun sewerage, phase 1** at an estimated cost of \$431.2 million in MOD prices.

PROJECT SCOPE AND NATURE

2. To cater for population growth and development needs of Hong Kong and to safeguard public health and the environment, we need to maintain and enhance the capacity and coverage of the sewerage infrastructure. At present, the public sewerage system of Hong Kong has reached over 93% of the population. There is a continual need to upgrade the system to improve its performance and extend the existing infrastructure further to serve more rural villages throughout the territory.

3. This composite paper consists of two projects covering the districts of Tseung Kwan O and Tuen Mun. Details of the proposals are at **Enclosures 1** and **2** respectively.

4. We will continue to pursue various projects in various areas of the territory to expand or rehabilitate our sewerage network and to enhance the quality of coastal waters of Victoria Harbour and other water bodies.

WAY FORWARD

5. We plan to seek funding approval from the Finance Committee for the proposed works under **4362DS** and part of **4346DS** after consulting the Public Works Subcommittee. Members are invited to comment on the proposed sewerage projects.

Environment Bureau
Drainage Services Department
March 2020

4362DS – Sewerage for Ma Yau Tong Village, Tseung Kwan O

PROJECT SCOPE

The proposed scope of works under **4362DS** comprises -

- (a) the construction of about 4.8 kilometres of gravity sewers for Ma Yau Tong Village in Tseung Kwan O; and
- (b) ancillary works¹.

A plan showing the location of the proposed works is at the **Annex to Enclosure 1**.

JUSTIFICATIONS

2. Currently, the majority part of Tseung Kwan O is served by public sewerage system, but remote area such as Ma Yau Tong Village is still unsewered. The villagers now rely on individual and simple sewage disposal facilities on-site such as septic tanks and soakaway (STS) systems². Extension of the public sewerage system to this area can help improve environmental hygiene and further reduce the amount of pollutants being discharged into nearby stream courses and marine waters.

3. We now propose to provide public sewerage system for Ma Yau Tong Village through the proposed works. The proposed sewerage system will serve an estimated ultimate population of about 2 300 and convey the sewage to the existing Kwun Tong Preliminary Treatment Works for proper treatment and disposal.

4. Subject to the funding approval of the Finance Committee, we aim to commence construction of the proposed works in the first quarter of 2021 for

¹ Ancillary works include the utility diversion, provision of manholes, temporary closure and reinstatement of carriageways/footpaths/open space, necessary landscaping works that are required to complete the proposed works.

² STS systems operate by allowing the effluent to percolate through soil layers so that pollutants may be removed in a natural manner. However, if a STS system is located in an area where the groundwater table is high, such as an area in proximity to the seaside or watercourses, it will not function properly due to ineffective percolation. There are also maintenance problems with some STS systems.

completion in the fourth quarter of 2024.

FINANCIAL IMPLICATIONS

5. We estimate that the total capital cost of the proposed works as detailed in paragraph 1 above to be \$179.4 million in money-of-the-day prices.

PUBLIC CONSULTATION

6. We have consulted the Hang Hau Rural Committee (HHRC) and the Housing and Environmental Hygiene Committee of the Sai Kung District Council (SKDC) on the project, and have reported to the two Committees on 16 October 2018 and 15 November 2018 respectively on the progress of the proposed works. Both Committees expressed support for the proposed works and urged the Government to expedite the progress of works.

7. We gazetted the proposed sewerage works under the Water Pollution Control (Sewerage) Regulation (Cap. 358AL) in February 2019 and re-gazetted them with amendments in August 2019. The proposed works were authorised in November 2019 after the satisfactory resolution of two objections received against the proposal.

ENVIRONMENTAL IMPLICATIONS

8. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). The Drainage Services Department has completed a Preliminary Environmental Review (PER) for the proposed works and updated it in January 2019. The PER concluded, and the Director of Environmental Protection agreed that the proposed works would not cause long-term adverse environmental impacts. We have included in the project estimate of the proposed works the cost for implementing the necessary environmental mitigation measures.

9. At the construction phase, we will require the contractors to control noise, dust and site run-off nuisances to within the established standards and guidelines through the implementation of the recommended mitigation measures. These measures include the use of silenced construction equipment and temporary noise barriers to reduce noise impact. In addition, water-spraying to the construction site will be applied regularly to minimise the emission of fugitive dust, and on-site treatment of site run-off will be carried out

to minimise potential water quality impact. We will also carry out regular site inspections to ensure that these recommended mitigation measures and good practices will be properly implemented on site.

10. At the planning and design stages, we have considered ways to reduce the generation of construction waste (e.g. use of trenchless construction method to avoid excavation works) where possible. 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 the public fill reception facilities (PFRF³). We will encourage the contractors 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.

11. We will also require the contractors to submit for approval a plan setting out the waste management measures at the construction stage, 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.

12. We estimate that the proposed works will generate in total about 11 000 tonnes of construction waste. Of these, we will reuse about 6 600 tonnes (60%) of inert construction waste on site, and deliver about 4 290 tonnes (39%) of inert construction waste to PFRF for subsequent reuse. We will dispose of the remaining 110 tonnes (1%) of non-inert construction waste at landfills. The total cost for disposal of construction waste at PFRF and landfill sites is estimated to be about \$326,000 for the proposed works (based on a unit charge rate of \$71 per tonne for disposal at PFRF and \$200 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap 354N)).

HERITAGE IMPLICATIONS

13. The proposed works will not affect any heritage site, i.e. all declared

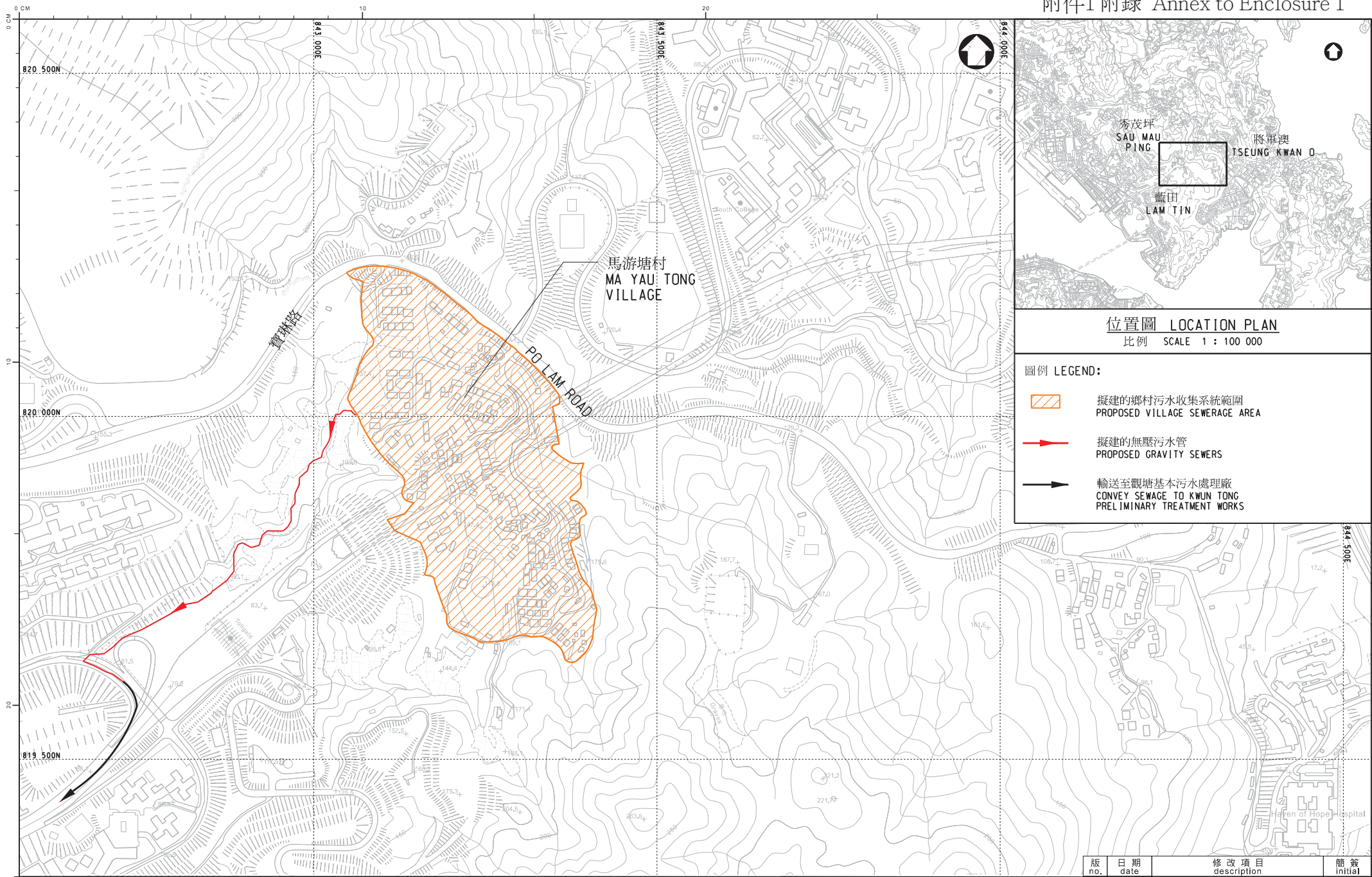
³ PFRF are specified in Schedule 4 of Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N). Disposal of inert construction waste at PFRF requires a licence issued by the Director of Civil Engineering and Development.

monuments, proposed monuments, graded historic sites and buildings, sites of archaeological interest and government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

14. We have reviewed the design of the proposed works to minimise the extent of land acquisition. We will resume about 50 square metres (m²) of private agricultural land and clear about 23 000 m² of government land for implementing the proposed works. Site clearance at Ma Yau Tong Village will not affect any household, but will affect two structures.




**Environment Bureau
Drainage Services Department
March 2020**




位置圖 LOCATION PLAN

比例 SCALE 1 : 100 000

圖例 LEGEND:

-  擬建的鄉村污水收集系統範圍
PROPOSED VILLAGE SEWERAGE AREA
-  擬建的無壓污水管
PROPOSED GRAVITY SEWERS
-  輸送至觀塘基本污水處理廠
CONVEY SEWAGE TO KWUN TONG
PRELIMINARY TREATMENT WORKS

圖則名稱 drawing title
 工務工程計劃編號4362DS
 將軍澳馬游塘村污水收集系統
 PWP ITEM NO.4362DS
 SEWERAGE FOR MA YAU TONG VILLAGE, TSEUNG KWAN O

繪畫 drawn <i>Signed</i> W. H. CHAN	日期 date 07 JAN 2020	修改項目 description	簡簽 initial
核對 checked <i>Signed</i> C. F. YEUNG	日期 date 07 JAN 2020	圖則編號 drawing no. DVD/2019/005	比例 scale 1 : 5 000 OR AS SHOWN
批核 approved <i>Signed</i> Ir C. H. CHAN	日期 date 07 JAN 2020	保留版權 COPYRIGHT RESERVED	
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4346DS - Upgrading of Tuen Mun sewerage, phase 1

PROJECT SCOPE

The part of **4346DS** that we propose to upgrade to Category A comprises—

- (a) the construction of one sewage pumping station (SPS) with a design capacity of about 190 cubic metres per day at Fuk Hang Tsuen (Lower);
- (b) the construction of about 150 metres of twin rising mains in Fuk Hang Tsuen (Lower);
- (c) the construction of about 11 kilometres of gravity sewers in Fuk Hang Tsuen (Lower), Po Tong Ha, Siu Hang Tsuen and Tsz Tin Tsuen; and
- (d) ancillary works¹.

————— A plan showing the locations of the proposed works is at **Annex to Enclosure 2**.

JUSTIFICATIONS

2. Currently, the majority part of Tuen Mun is served by public sewerage system, but some village areas in the district are still unsewered. The villagers now rely on individual and simple sewage disposal facilities on-site such as septic tanks and soakaway (STS) systems². Extension of the public sewerage system to these areas can help improve environmental hygiene and further reduce the amount of pollutants being discharged into the nearby stream courses

¹ Ancillary works include the utility diversion, provision of manholes, temporary closure and reinstatement of carriageways/footpaths/open space, necessary architectural, building services and landscaping works that are required to complete the proposed works.

² STS systems operate by allowing the effluent to percolate through soil layers so that pollutants may be removed in a natural manner. However, if a STS system is located in an area where the groundwater table is high, such as an area in proximity to the seaside or watercourses, it will not function properly due to ineffective percolation. There are also maintenance problems with some STS systems.

and marine waters.

3. We now propose to provide public sewerage system for four unsewered village areas, namely Fuk Hang Tsuen (Lower), Po Tong Ha, Siu Hang Tsuen and Tsz Tin Tsuen through the proposed works. The proposed sewerage system will serve an estimated ultimate population of about 6 250 and convey the sewage to the existing Pillar Point Sewage Treatment Works for proper treatment and disposal.

4. Subject to the funding approval of the Finance Committee, we aim to commence construction of the proposed works in the first quarter of 2021 for completion in the fourth quarter of 2024. The remainder of **4346DS** for provision of public sewerage system for another unsewered area will be retained in Category B, with funding to be sought at a later stage after completion of the design and preparatory works.

FINANCIAL IMPLICATIONS

5. We estimate that the total capital cost of the proposed works as detailed in paragraph 1 above to be \$431.2 million in money-of-the-day prices.

PUBLIC CONSULTATION

6. We have consulted the Tuen Mun Rural Committee and the Environment, Hygiene and District Development Committee of the Tuen Mun District Council on the project and have reported the progress of the proposed works to the two Committees on 20 October 2018 and 23 November 2018 respectively. Both Committees expressed support for the proposed works and urged the Government to expedite the progress of works.

7. We gazetted the proposed sewerage works in four packages under the Water Pollution Control (Sewerage) Regulation (Cap. 358AL). The first package for Siu Hang Tsuen was gazetted in December 2018 and re-gazetted with amendments in July 2019. The proposed works were authorised in November 2019 after the satisfactory resolution of three objections received against the proposal. The second package for Po Tong Ha was gazetted in February 2019 and re-gazetted with amendments in August 2019. The proposed works were authorised in November 2019 after the satisfactory resolution of five objections received against the proposal. The third package for Fuk Hang Tsuen (Lower) was gazetted in March 2019. No objection was received and the proposed works were authorised in August 2019. The fourth

package for Tsz Tin Tsuen was gazetted in July 2019 and re-gazetted with amendments in November 2019. The proposed works were authorised in February 2020 after the satisfactory resolution of five objections received against the proposal.

ENVIRONMENTAL IMPLICATIONS

8. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). The Drainage Services Department has completed a Preliminary Environmental Review (PER) for the proposed works and a supplementary PER for the proposed SPS at Fuk Hang Tsuen (Lower). Both PERs have concluded, and the Director of Environmental Protection agreed that with the implementation of mitigation measures, the proposed works would not cause long-term adverse environmental impacts. We have included in the project estimate the cost of the proposed works for implementation of the necessary environmental mitigation measures.

9. At the construction phase, we will require the contractors to control noise, dust and site run-off nuisances to within the established standards and guidelines through the implementation of the recommended mitigation measures. These measures include the use of silenced construction equipment and temporary noise barriers to reduce noise impact, regular water-spraying to the construction site to minimise emission of fugitive dust, and on-site treatment of site run-off to minimise potential water quality impact. We will also carry out regular site inspections to ensure that these recommended mitigation measures and good practices will be properly implemented on site.

10. At the planning and design stages, we have considered ways to reduce the generation of construction waste (e.g. use of trenchless construction method to avoid excavation works) where possible. 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 disposal of inert construction waste at the public fill reception facilities (PFRF³). We will encourage the contractors 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.

³ PFRF are specified in Schedule 4 of Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N). Disposal of inert construction waste at PFRF requires a licence issued by the Director of Civil Engineering and Development.

11. We will also require the contractors to submit for approval a plan setting out the waste management measures at the construction stage, 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.

12. We estimate that the proposed works will generate in total about 18 600 tonnes of construction waste. Of these, we will reuse about 8 500 tonnes (45.7%) of inert construction waste on site, and deliver about 8 700 tonnes (46.8%) of inert construction waste to PFRF for subsequent reuse. We will dispose of the remaining 1 400 tonnes (7.5%) of non-inert construction waste at landfills. The total cost for disposal of construction waste at PFRF and landfill sites is estimated to be about \$897,000 for the proposed works (based on a unit charge rate of \$71 per tonne for disposal at PFRF and \$200 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap 354N)).

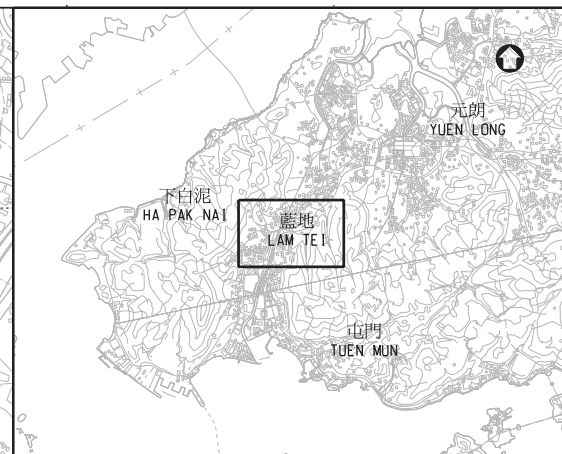
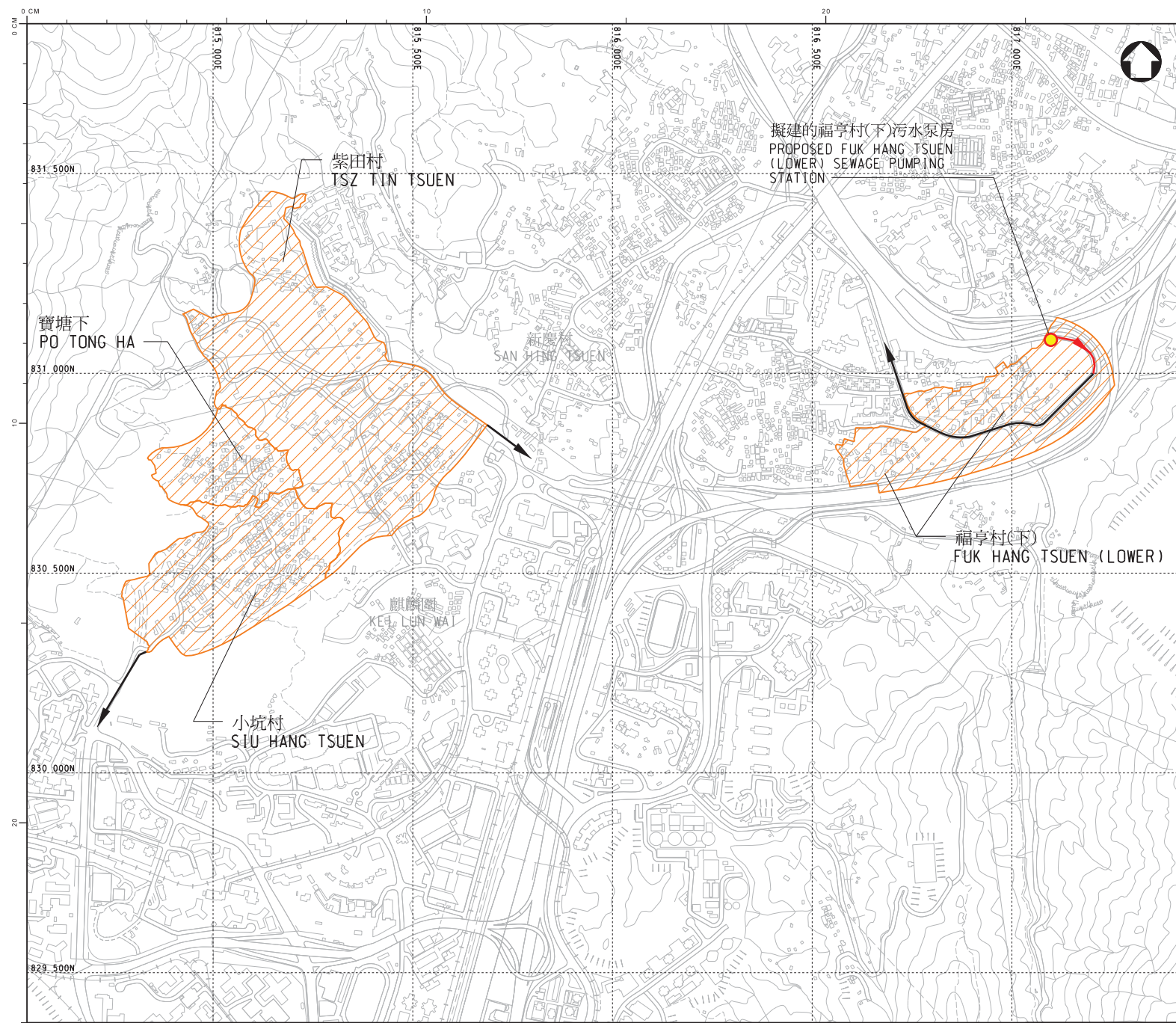
HERITAGE IMPLICATIONS

13. The proposed works will not affect declared monuments, proposed monuments, graded historic sites and buildings, and Government historic sites identified by the Antiquities and Monuments Office (AMO). Part of the proposed works will be carried out within Siu Hang Tsuen and Kei Lun Wai Sites of Archaeological Interest and in the vicinity of San Hing Tsuen Site of Archaeological Interest. We will review the potential archaeological impact on these sites based on results of past study and work with AMO to implement appropriate mitigation measures before the commencement of the proposed works.

LAND ACQUISITION

14. We have reviewed the design of the proposed works to minimise the extent of land acquisition. We will resume about 5 105 square metres (m²) of private agricultural land and clear about 51 440 m² of government land for implementing the proposed works. Site clearance at Fuk Hang Tsuen (Lower), Po Tong Ha, Siu Hang Tsuen and Tsz Tin Tsuen will not affect any household, but will affect 63 structures.

**Environment Bureau
Drainage Services Department
March 2020**



位置圖 LOCATION PLAN
比例 SCALE 1 : 200 000

圖例 LEGEND:

	擬建的鄉村污水收集系統範圍 PROPOSED VILLAGE SEWERAGE AREA
	擬建的污水泵房 PROPOSED SEWAGE PUMPING STATION
	擬建的雙管污水泵喉 PROPOSED TWIN RISING MAINS
	輸送至望后石污水處理廠 CONVEY SEWAGE TO PILLAR POINT SEWAGE TREATMENT WORKS

圖則名稱 drawing title
工務工程計劃編號4346DS
屯門污水收集系統改善計劃第1期
PWP ITEM NO.4346DS
UPGRADING OF TUEN MUN SEWERAGE, PHASE 1

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核對 checked <i>SIGNED</i> W. C. LEE	日期 date 15 JAN 2020	圖則編號 drawing no. DVD/2019/002	比例 scale 1 : 10 000 OR AS SHOWN
批核 approved <i>SIGNED</i> Ir C. H. CHAN	日期 date 15 JAN 2020	保留版權 COPYRIGHT RESERVED	
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