

**For discussion
on 22 March 2021**

**Legislative Council
Panel on Environmental Affairs**

**North District, Lamma Island and Lantau Sewerage, and the
Construction and Rehabilitation of Sewage Rising Mains in
Yuen Long, Tai Po Kau and Yau Tong**

PURPOSE

This paper seeks Members' views on the Government's proposals to upgrade the following sewerage items to Category A for taking forward the upgrading of sewerage system in North District, provision of sewerage network for part of unsewered areas in Lamma Island and Lantau, and construction and rehabilitation of sewage rising mains in Yuen Long, Tai Po Kau and Yau Tong –

- (a) **4409DS – North East New Territories sewerage system upgrade** at an estimated cost of \$825.8 million in money-of-the-day (MOD) prices;
- (b) **4355DS – Outlying Islands sewerage stage 2 – Lamma village sewerage phase 2, package 2** at an estimated cost of \$502.9 million in MOD prices;
- (c) **4353DS – Outlying Islands sewerage, stage 2 – extension of sewerage system to other unsewered villages in Mui Wo** at an estimated cost of \$135.7 million in MOD prices;
- (d) **4417DS – Construction and rehabilitation of trunk sewage rising mains in Yuen Long** at an estimated cost of \$886.3 million in MOD prices;

- (e) **4419DS – Construction and rehabilitation of sewage rising mains in Tai Po Kau** at an estimated cost of \$107.6 million in MOD prices; and
- (f) **4420DS – Construction and rehabilitation of trunk sewage rising mains in Yau Tong** at an estimated cost of \$621.1 million in MOD prices.

Details of the proposals are at **Enclosures 1 to 6** respectively.

PROJECT SCOPE AND NATURE

2. The Government has been planning and extending the sewerage infrastructure proactively over the years to strive for continuous improvement in the public hygiene condition and water quality in rivers, harbours and open waters. In recent years, the sewerage planning strategy focusing on four aspects, namely upgrading sewage treatment facilities and extending public sewerage systems to cater for population growth and development needs; providing village sewerage systems to improve the rural environment; installing dry weather flow interceptors to improve the water quality of nearshore waters of Victoria Harbour; and rehabilitating aging sewers progressively.

3. The construction of village sewerage systems started in the 1990s. The current village sewerage programme covers about 550 villages, of which the sewerage systems for 258 villages have been completed and that of 59 are under construction. For those remaining projects under the programme, in addition to the three proposed items (a) to (c) of this paper, we will continue to seek funding for their implementation in the coming years, subject to the progress of the programme and availability of resources.

4. At present, there are about 1 800 kilometres (km) of underground sewers in Hong Kong, of which 180 km are sewage rising mains. Many of these rising mains have been in service for many years and are of single-pipe design, with the risk of pipe burst increasing over the remaining usage life. Depending on the extent of ageing and deterioration, we will rehabilitate aged rising mains progressively and upgrade them to twin-pipe system in order to enhance their

operational reliability and prevent pollution caused by leakage. Currently, there are 9 km of rising mains under replacement and rehabilitation and we plan to carry out similar works for another 75 km of rising mains in the coming 10 years, including the three proposed items (d) to (f), and part of item (a).

5. Apart from the above-mentioned plans, we are planning sewerage facilities to cope with various regional and housing developments and conducting feasibility studies for pollutant interception projects to improve the quality of nearshore waters of Victoria Harbour. We will submit further recommendations on these projects at appropriate time for the Panel's consideration.

6. This composite paper consists of the following projects, serving an ultimate population of about 500 000 –

- (a) three sewerage upgrading and provision projects in North District, Lamma Island and Lantau; and
- (b) three rising main construction and rehabilitation projects in Yuen Long, Tai Po Kau and Yau Tong.

WAY FORWARD

7. We plan to seek funding approval from the Finance Committee for the proposed works under **4409DS**, **4355DS**, **4353DS**, **4417DS**, **4419DS** and **4420DS** after consulting the Public Works Subcommittee. Members are invited to comment on these six sewerage projects.

Environment Bureau
Drainage Services Department
March 2021

4409DS — North East New Territories sewerage system upgrade

PROJECT SCOPE

The proposed scope of works under **4409DS** comprises –

- (a) the construction of two sewage pumping stations (SPSs) with design capacities of about 16 000 and 6 000 cubic metres per day at Sha Ling and Tong Fong respectively;
- (b) the upgrading of seven existing SPSs;
- (c) the construction of about 8.9 kilometres (km) of twin rising mains with diameters ranging from 200 millimetres (mm) to 450 mm and about 5.5 km of single rising main with diameter of 250 mm;
- (d) the construction of about 1.1 km of gravity sewer with diameter of 800 mm;
- (e) the demolition of the existing Sha Ling and Tong Fong SPS; and
- (f) ancillary works¹.

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

¹ Ancillary works include the utilities diversion, road and drainage works, 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, and local improvement works for the community.

JUSTIFICATION

2. The current sewage flow in the North East New Territories sewerage system is about to reach its design capacity. To cope with the progressive implementation of village sewerage programme and the development of other planned public facilities, we are required to upgrade the sewerage system in Ping Che, Ta Kwu Ling, Man Kam To and Sha Ling to increase its handling capacity.

3. The proposed works include the reconstruction of two SPSs at Sha Ling and Tong Fong; upgrading of seven SPSs at Pak Hok Shan, Ng Chow South Road, Ping Yeung, Kat Tin, Lin Ma Hang Road and North East New Territories Landfill; and construction of about 15.5 km of sewers along Ping Che Road, Lin Ma Hang Road, Man Kam To Road and Fu Tei Au Road to convey the sewage in this region to the Shek Wu Hui Effluent Polishing Plant for treatment and polishing. The proposed sewerage system will serve an estimated ultimate population of about 23 000.

4. We plan to commence the proposed works upon obtaining funding approval from the Finance Committee for target completion in around six years.

FINANCIAL IMPLICATIONS

5. We estimate that the total capital cost of the proposed works (as detailed in paragraph 1 above) to be \$825.8 million in money-of-the-day prices.

PUBLIC CONSULTATION

6. We have consulted the District Minor Works and Environmental Improvement Committee of the North District Council and the Ta Kwu Ling District Rural Committee on 21 May 2018 and 5 February 2021 respectively, and they both supported the proposed works.

ENVIRONMENTAL IMPLICATIONS

7. The proposed reconstruction of the Sha Ling and Tong Fong SPS and the proposed upgrading works at Kat Tin SPS are designated projects under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) requiring an Environmental Permit (EP) for their construction and operation. Having regarded to the project profile (PP), the Director of Environmental Protection (DEP) is satisfied that with the implementation of the recommended mitigation measures, the proposed works would not cause adverse environmental impact. An EP for the construction and operation of the proposed works was issued on 5 February 2021. The Drainage Services Department (DSD) will implement the mitigation measures set out in the PP and comply with the conditions of the EP.

8. Other than the above mentioned in paragraph 7, the remaining part of the proposed works is not a designated project under the EIAO (Cap. 499). DSD completed a Preliminary Environmental Review (PER) for the remaining part of the proposed works. The PER concluded that and DEP agreed that with the implementation of appropriate mitigation measures, the proposed works would not cause long-term adverse environmental impact. We have included in the project estimate for implementation of the necessary environmental mitigation measures to control the short-term environmental impacts during construction.

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. For the operation phase, we will implement the measures recommended in the relevant PER, PP and as stipulated in the relevant EP. For the operation of the Sha Ling and Tong Fong SPS, the key measures will include placing most of the equipment in underground enclosed structures, provision of deodourisation units as well as landscaping works and vertical greening to the structures to minimise potential noise, odour and visual impact to nearby sensitive receivers.

11. 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 sewers in such a manner that excavation and modification of existing structures will be minimised) 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 (PFRF²). 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.

12. We will also 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.

13. We estimate that the proposed works will generate in total about 128 000 tonnes of construction waste. Of these, we will reuse 64 300 tonnes (50%) of inert construction waste on site, and deliver about 57 700 tonnes (45%) of inert construction waste to PFRF for subsequent reuse. We will dispose of the remaining 6 000 tonnes (5%) of non-inert construction waste at landfills. The total cost for disposal of the construction waste at PFRF and landfill sites is estimated to be about \$5.3 million for the proposed works (based on a unit charge

² PFRF are specified in Schedule 4 of the 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.

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

14. The proposed works 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

15. The proposed works will only involve Government land. No land resumption is required.

Environment Bureau
Drainage Services Department
March 2021

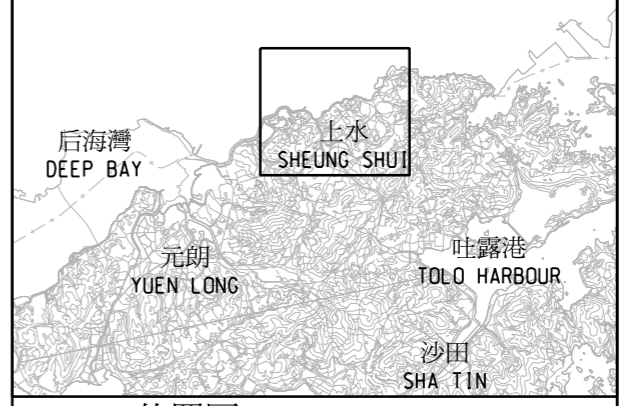
- 圖例**
LEGEND :
- 現有污水泵喉及無壓污水渠
EXISTING RISING MAINS AND GRAVITY SEWERS
 - - 擬建的雙管污水泵喉及無壓污水渠
PROPOSED TWIN RISING MAINS AND GRAVITY SEWERS
 - · - 擬建的單管污水泵喉
PROPOSED SINGLE RISING MAIN

重建現有污水泵房
EXISTING SEWAGE PUMPING STATION TO BE RECONSTRUCTED

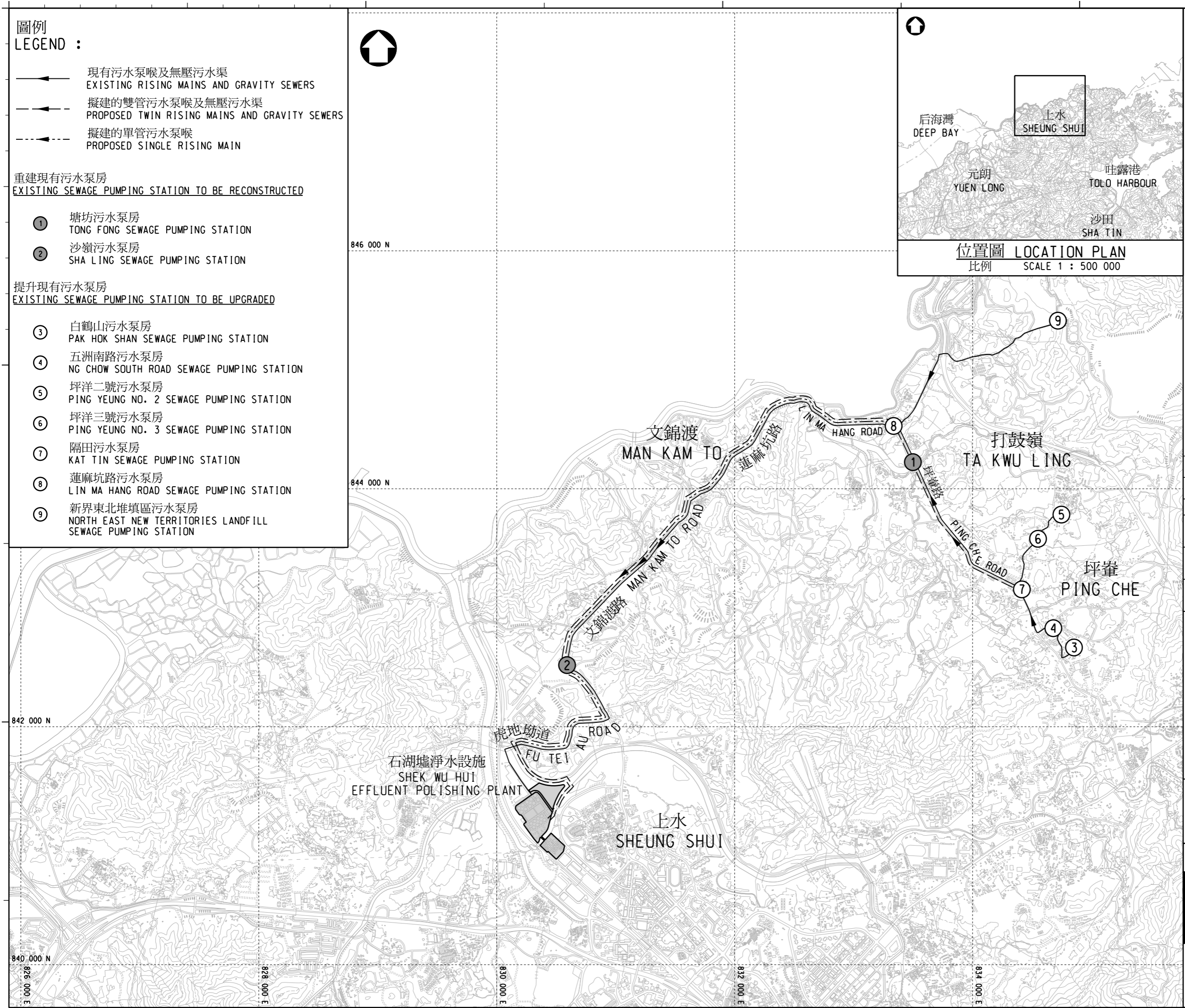
- ① 塘坊污水泵房
TONG FONG SEWAGE PUMPING STATION
- ② 沙嶺污水泵房
SHA LING SEWAGE PUMPING STATION

提升現有污水泵房
EXISTING SEWAGE PUMPING STATION TO BE UPGRADED

- ③ 白鶴山污水泵房
PAK HOK SHAN SEWAGE PUMPING STATION
- ④ 五洲南路污水泵房
NG CHOW SOUTH ROAD SEWAGE PUMPING STATION
- ⑤ 坪洋二號污水泵房
PING YEUNG NO. 2 SEWAGE PUMPING STATION
- ⑥ 坪洋三號污水泵房
PING YEUNG NO. 3 SEWAGE PUMPING STATION
- ⑦ 隔田污水泵房
KAT TIN SEWAGE PUMPING STATION
- ⑧ 蓮麻坑路污水泵房
LIN MA HANG ROAD SEWAGE PUMPING STATION
- ⑨ 新界東北堆填區污水泵房
NORTH EAST NEW TERRITORIES LANDFILL SEWAGE PUMPING STATION



位置圖 LOCATION PLAN
比例 SCALE 1 : 500 000



版 no.	日期 date	修改項目 description	簡簽 initial
修訂 REVISION			
		姓名 name	日期 date
繪畫 drawn		SIGNED L. L. LIU	2 MAR 2021
核對 checked		SIGNED C. M. MAK	2 MAR 2021
批核 approved		SIGNED P. Y. CHENG	2 MAR 2021

圖則名稱 drawing title

工務工程計劃編號4409DS
- 提升新界東北污水收集系統
PWP ITEM NO. 4409DS
- NORTH EAST NEW TERRITORIES SEWERAGE SYSTEM UPGRADE

圖則編號 drawing no.	比例 scale
DCM/2020/040	1 : 30 000

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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

**4355DS – Outlying Islands sewerage stage 2 –
Lamma village sewerage phase 2, package 2**

PROJECT SCOPE

The proposed scope of works under **4355DS** comprises –

- (a) the construction of two sewage pumping stations (SPSs) with design capacities of about 820 and 300 cubic metres per day at Tai Wan To and Hung Shing Ye respectively;
- (b) the construction of about 1 kilometre (km) of twin rising mains with diameters ranging from 100 millimetres (mm) to 200 mm;
- (c) the construction of about 5 km of gravity sewers with diameters ranging from 150 mm to 225 mm; and
- (d) ancillary works¹.

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

¹ Ancillary works include the utilities diversion, road and drainage works, 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 and provision of temporary sewage treatment facilities at Hung Shing Yeh Beach during the construction of the proposed works.

JUSTIFICATION

2. Currently, the majority of areas between Tai Yuen and Hung Shing Ye of Lamma Island are still unsewered. The villagers in these areas now rely on individual and simple on-site facilities such as septic tanks and soakaway (STS) systems² for sewage treatment and disposal. There is also a sewage trickling filter (STF) in operation for over twenty years at Hung Shing Yeh Beach used for treating sewage generated by visitors before discharge into Hung Shing Ye Bay. Extension of public sewerage system to these areas can help improve environmental hygiene, reduce the amount of pollutants being discharged into the nearby stream courses and marine waters, and further protect the water quality of the bathing beach.

3. We now propose to provide public sewerage system for seven unsewered village areas, namely Wang Long, Tai Wan Kau Tsuen, Tai Wan San Tsuen, Tai Wan To (part), Ko Long (part), Tai Yuen (part) and Hung Shing Ye; and Hung Shing Yeh Beach through the proposed works.

4. It is estimated that the proposed sewerage system will serve an ultimate population of about 1 830 and a large number of beach-goers by conveying the sewage to the existing Yung Shue Wan Sewage Treatment Works for proper treatment and disposal.

5. We plan to commence the proposed works upon obtaining funding approval from the Finance Committee for target completion of the works in around five years.

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 ground water 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.

FINANCIAL IMPLICATIONS

6. We estimate that the total cost of the proposed works (as detailed in paragraph 1 above) to be \$502.9 million in money-of-the-day prices.

PUBLIC CONSULTATION

7. We have consulted the Lamma Island (North) Rural Committee (RC) and the Tourism, Agriculture, Fisheries and Environmental Hygiene Committee of the Islands District Council (IsDC) on the project several times at the early stage of the project. Both Committees have provided continual support to the proposed works. We further consulted the two Committees on the project details and progress on 19 May 2019 and 27 May 2019. Both Committees maintained their support for the proposed works.

8. We gazetted the proposed sewerage works in two packages under the Water Pollution Control (Sewerage) Regulation (Cap. 358AL). The first package for Hung Shing Ye was gazetted on 12 December 2014 with no objection received and the proposed works was authorised on 12 June 2015. The second package for Wang Long, Tai Wan Kau Tsuen, Tai Wan San Tsuen, Tai Wan To (part), Ko Long (part) and Tai Yuen (part) was gazetted on 27 September 2019 and re-gazetted with amendments on 19 June 2020. A total of 15 objections were received for the two gazettals. Ten objections were satisfactorily resolved. The remaining five objections could not be resolved. After the Chief Executive in Council considered the unresolved objections submitted by the members of the public, the proposed works were authorised on 26 February 2021.

ENVIRONMENTAL IMPLICATIONS

9. 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 Tai Wan To, which concluded, and the Director of Environmental Protection agreed that with the implementation of appropriate mitigation measures, the proposed works would not cause long-term adverse environmental impact. We have included in the project estimate of the proposed works the cost for implementation of the necessary environmental mitigation measures to control the short-term environmental impacts brought by the project.

10. 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.

11. At the planning and design stages, we have considered ways to reduce the generation of construction waste 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.

12. We will also 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.

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.

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.

13. We estimate that the proposed works will generate in total about 33 400 tonnes of construction waste. Of these, we will reuse about 27 050 tonnes (81%) of inert construction waste on site and deliver about 5 680 tonnes (17%) of inert construction waste to PFRF for subsequent reuse. We will dispose of the remaining 670 tonnes (2%) 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 \$537,000 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)).

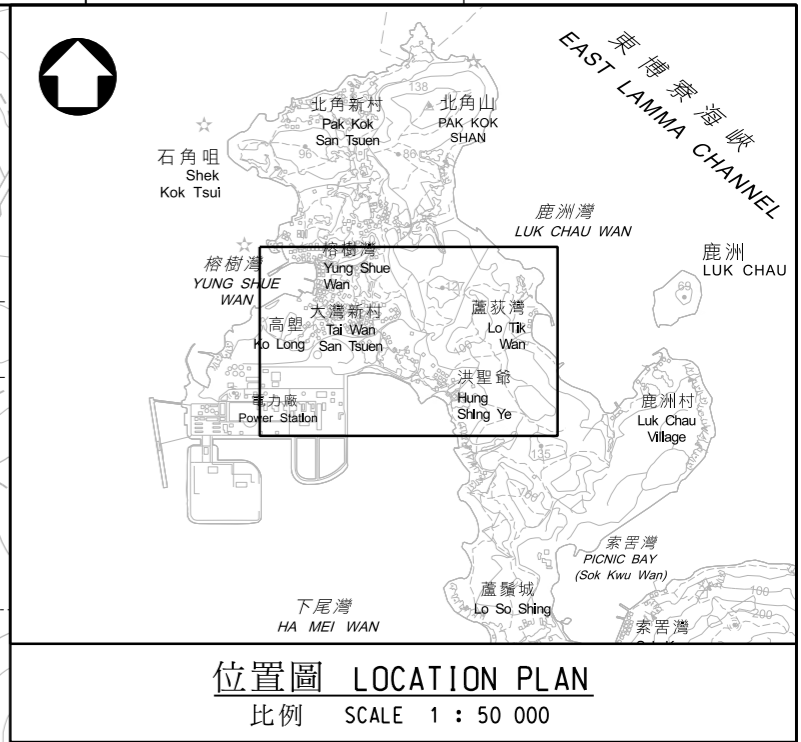
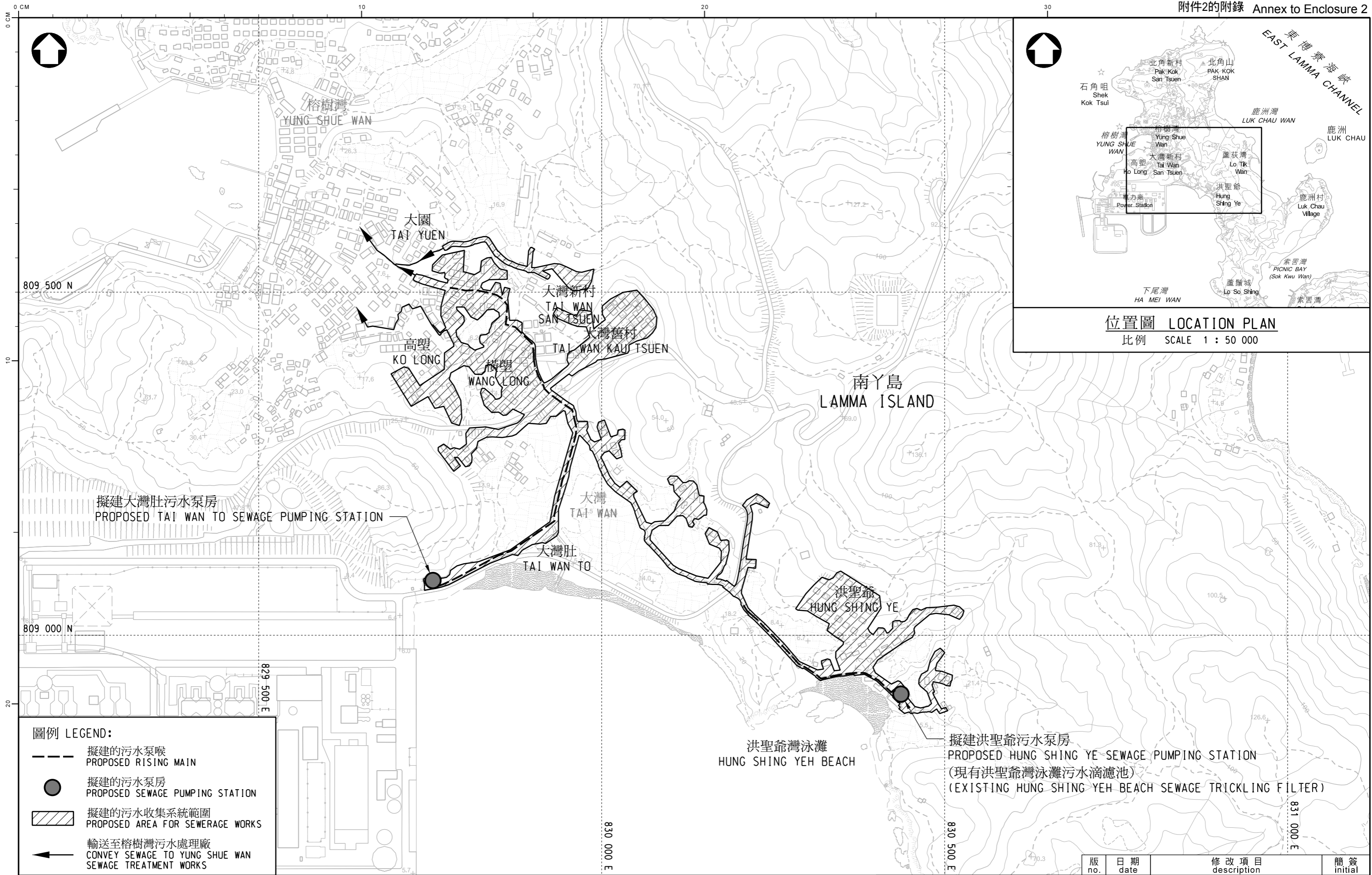
HERITAGE IMPLICATIONS

14. The proposed works will not affect any declared monument, proposed monument, graded historic site and building and Government historic site identified by the Antiquities and Monuments Office (AMO). Since part of the proposed works will be carried out within Tai Wan, Yung Shue Wan and Hung Shing Ye Sites of Archaeological Interest of Lamma Island, we will implement appropriate mitigation measures as recommended by the PER and Supplementary PER in agreement with AMO.

LAND ACQUISITION

15. We have reviewed the design of the proposed works to minimise the extent of land acquisition. We will resume about 844 square metres (m²) of private land and clear about 16 952 m² of government land for implementing the proposed works. The land resumption and clearance at Wang Long, Tai Wan Kau Tsuen, Tai Wan San Tsuen, Tai Wan To, Ko Long, Tai Yuen and Hung Shing Ye will not affect any household but will affect 21 non-domestic structures.

Environment Bureau
Drainage Services Department
March 2021



圖例 LEGEND:

- 擬建的污水泵喉
PROPOSED RISING MAIN
- 擬建的污水泵房
PROPOSED SEWAGE PUMPING STATION
- 擬建的污水收集系統範圍
PROPOSED AREA FOR SEWERAGE WORKS
- 輸送至榕樹灣污水處理廠
CONVEY SEWAGE TO YUNG SHUE WAN SEWAGE TREATMENT WORKS

圖則名稱 drawing title	繪畫 drawn <i>SIGNED</i> K. S. LEUNG	日期 date 5 MAR 2021	修改項目 description DVD/2020/023	簡簽 initial 比例 scale 1 : 5000 OR AS SHOWN
工務工程計劃編號4355DS - 離島污水收集系統第2階段 - 南丫鄉村污水收集系統第2期第2部分 PWP ITEM NO.4355DS - OUTLYING ISLANDS SEWERAGE STAGE 2 - LAMMA VILLAGE SEWERAGE PHASE 2, PACKAGE 2	核對 checked <i>SIGNED</i> Ir H. Y. YUEN	日期 date 5 MAR 2021	保留版權 COPYRIGHT RESERVED	
	批核 approved <i>SIGNED</i> Ir K.K. LEUNG	日期 date 5 MAR 2021	香港特別行政區政府渠務署 DRAINAGE SERVICES DEPARTMENT GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION	
	部門 office 特別職務部 SPECIAL DUTY DIVISION			

**4353DS – Outlying Islands sewerage, stage 2 –
extension of sewerage system to other unsewered villages
in Mui Wo**

PROJECT SCOPE

The proposed scope of works under **4353DS** comprises –

- (a) the construction of a sewage pumping station with design capacity of about 365 cubic metres per day at Luk Tei Tong;
- (b) the construction of about 300 metres of twin rising mains with a diameter of 150 millimetres (mm);
- (c) the construction of about 2.9 kilometres of gravity sewers with diameters ranging from 150 mm to 250 mm; and
- (d) ancillary works¹.

A plan showing the locations of the proposed works is at **Annex to Enclosure 3**.

JUSTIFICATION

2. Currently, there is no public sewerage in the areas of Ma Po Tsuen and Luk Tei Tong in Mui Wo of Lantau. The villagers in these areas now rely on individual and simple on-site facilities such as septic tanks and soakaway (STS)

¹ Ancillary works include the utilities diversion, road and drainage works, 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.

systems². Extension of 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 and marine waters.

3. We now propose to provide public sewerage system for two unsewered village areas, namely Ma Po Tsuen and Luk Tei Tong through the proposed works. It is estimated that the proposed sewerage system will serve an ultimate population of about 1 100 by conveying the sewage to the existing Mui Wo Sewage Treatment Works for proper treatment and disposal.

4. We plan to commence the proposed works upon obtaining funding approval from the Finance Committee for target completion of the works in around five years.

FINANCIAL IMPLICATIONS

5. We estimate that the total cost of the proposed works (as detailed in paragraph 1 above) to be \$135.7 million in money-of-the-day prices.

PUBLIC CONSULTATION

6. We have consulted the Mui Wo Rural Committee on 6 May 2008. The Committee supported the proposed works. We further consulted the Tourism, Agriculture, Fisheries and Environmental Hygiene Committee of the Islands District Council in January 2009 and November 2018. The Committee also supported 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 ground water 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.

7. We gazetted the proposed sewerage works for Luk Tei Tong under the Water Pollution Control (Sewerage) Regulation (Cap. 358AL) on 3 July 2020. No objection was received and the proposed works at Luk Tei Tong was authorised on 13 November 2020.

8. We gazetted the proposed sewerage works for Ma Po Tsuen under the Water Pollution Control (Sewerage) Regulation (Cap. 358AL) on 3 July 2020 and re-gazetted the works with amendments on 6 November 2020. A total of three objections to the two gazettals were received. Two objections were satisfactorily resolved. The remaining one objection cannot be resolved. We plan to submit the proposed works with the unresolved objection to the Chief Executive in Council for consideration.

ENVIRONMENTAL IMPLICATIONS

9. 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 rising mains which concluded, and the Director of Environmental Protection agreed, that with the implementation of appropriate mitigation measures, the proposed works would not cause long-term adverse environmental impact. We have included in the project estimate of the proposed works the cost for implementation of the necessary environmental mitigation measures to control the short-term environmental impact brought by the project.

10. 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.

11. At the planning and design stages, we have considered ways to reduce the generation of construction waste 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.

12. We will also 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.

13. We estimate that the proposed works will generate in total about 21 100 tonnes of construction waste. Of these, we will reuse about 15 600 tonnes (74%) of inert construction waste on site and deliver about 4 300 tonnes (20%) of inert construction waste to PFRF for subsequent reuse. We will dispose of the remaining 1 200 tonnes (6%) of non-inert construction waste at landfills. The total cost for disposal of the construction waste at PFRF and landfill sites is estimated to be about \$545,000 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)

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.

Regulation (Cap 354N).

HERITAGE IMPLICATIONS

14. The proposed works will not affect any declared monument, proposed monument, graded historic site, site of archaeological interest and Government historic site identified by the Antiquities and Monuments Office. The supplementary PER report identified within the boundary of the project a historic building, i.e. Luk Tei Tong Watchtower. We will implement appropriate mitigation measures to preserve the Watchtower in accordance with the recommendations of the supplementary PER.

LAND ACQUISITION

15. We have reviewed the design of the proposed works to minimise the extent of land acquisition. We will resume about 3 694 square metres (m²) of private agricultural land and clear about 14 893 m² of government land for implementing the proposed works. The land resumption and clearance at Ma Po Tsuen and Luk Tei Tong will not affect any household but will affect 36 non-domestic structures.

Environment Bureau
Drainage Services Department
March 2021

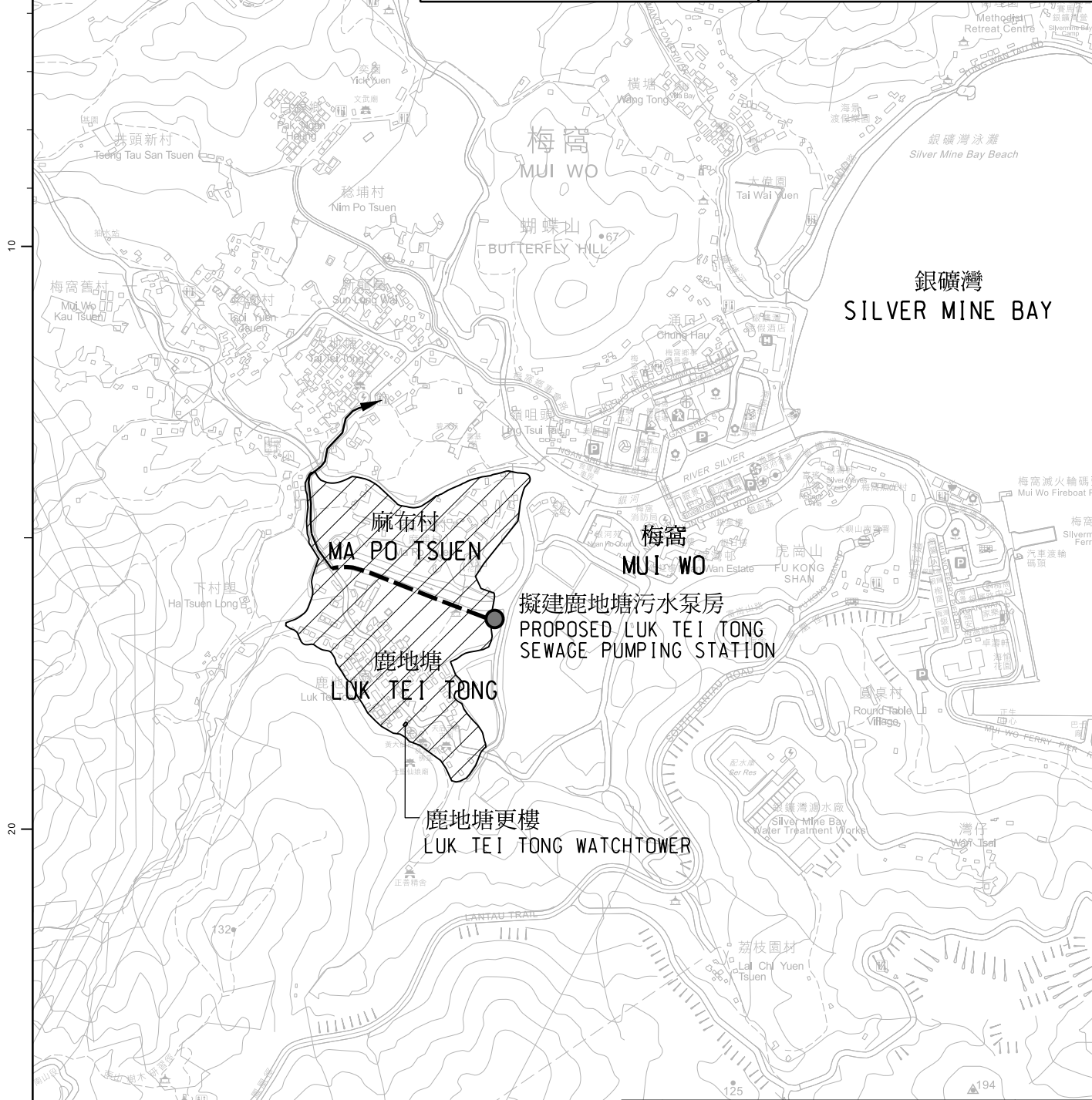
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10

圖例
LEGEND :

- 擬建的污水泵喉
PROPOSED RISING MAIN
- 擬建的鹿地塘污水泵房
PROPOSED LUK TEI TONG SEWAGE PUMPING STATION
- 擬建的污水收集系統範圍
PROPOSED AREA FOR SEWERAGE WORKS
- 輸送至梅窩污水處理廠
CONVEY SEWAGE TO MUI WO SEWAGE TREATMENT WORKS

位置圖 LOCATION PLAN
比例 SCALE 1 : 200 000



no.	date	description	initial
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<p>drawing title 工務項目編號 4353DS - 離島污水收集系統第2階段 - 擴展污水收集系統至梅窩其他未有污水設施的鄉村</p> <p>PWP ITEM NO. 4353DS - OUTLYING ISLANDS SEWERAGE STAGE 2 - EXTENSION OF SEWERAGE SYSTEM TO OTHER UNSEWERED VILLAGES IN MUI WO</p>	<p>drawn SIGNED L. S. TSE</p>	<p>date 8 MAR 2021</p>	<p>drawing no. DCM/2020/039</p>	<p>scale 1:10 000</p>	
	<p>checked SIGNED Y. LEE</p>	<p>date 8 MAR 2021</p>	COPYRIGHT RESERVED		
	<p>approved SIGNED K. F. CHAN</p>	<p>date 8 MAR 2021</p>	DRAINAGE SERVICES DEPARTMENT GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION		
	<p>office CONSULTANTS MANAGEMENT DIVISION</p>				

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4417DS – Construction and rehabilitation of trunk sewage rising mains in Yuen Long

PROJECT SCOPE

The proposed scope of works under **4417DS** comprises –

- (a) the construction of about 2.7 kilometres (km) of sewage rising main with a diameter of 1 000 millimetres (mm) between Ping Shun Street Sewage Pumping Station (PSSPS) and the sewerage network at Tin Fuk Road, and about 1 km of sewage rising main with a diameter of 900 mm between PSSPS and the sewerage network at Wang Lok Street;
- (b) the rehabilitation of about 2.7 km of rising main with a diameter of 1 000 mm between PSSPS and sewerage network at Tin Fuk Road, and about 1 km of rising main with a diameter of 900 mm between PSSPS and the sewerage network at Wang Lok Street; and
- (c) ancillary works¹.

— A plan showing the locations of the proposed works is at **Annex to Enclosure 4**.

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

JUSTIFICATION

2. According to the evaluation of the “Enhanced Management of Underground Sewer and Drain Networks – Feasibility Study” conducted in 2015, two sections of the trunk rising main in Yuen Long between PSSPS and the sewerage network at Tin Fuk Road, and between PSSPS and sewerage network at Wang Lok Street, should be rehabilitated. These two existing rising mains serve a planned population of about 280 000. As the rising mains have been in services continuously for more than 21 years, they are suffering from ageing and deterioration. If the rising mains are damaged or encountered operational failure, the water quality of Deep Bay will be adversely affected.

3. We now propose to rehabilitate the two existing rising mains mentioned above and construct two new rising mains of a total length of about 3.7 km. Trenchless technologies will be employed as far as possible to reduce inconvenience to the public.

4. We plan to commence the proposed works upon obtaining funding approval from the Finance Committee for target completion of the works in around five years.

FINANCIAL IMPLICATIONS

5. We estimate that the total cost of the proposed works (as detailed in paragraph 1 above) to be \$886.3 million in money-of-the-day prices.

PUBLIC CONSULTATION

6. We have consulted the Housing, Town Planning and Development Committee of Yuen Long District Council on 18 November 2020. The Committee had no objection to the proposed works.

ENVIRONMENTAL IMPLICATIONS

7. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). The project will not cause long-term environmental impacts. We have included in the project estimate the cost to implement suitable mitigation measures to control the short-term environmental impacts.

8. 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.

9. 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 (PFRF²). 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.

10. We will also 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

² 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.

will control the disposal of inert and non-inert construction waste at PFRF and landfills respectively through a trip-ticket system.

11. We estimate that the proposed works will generate in total about 48 200 tonnes of construction waste. Of these, we will reuse about 31 300 tonnes (65%) of inert construction waste on site, and deliver about 13 300 tonnes (28%) of inert construction waste to PFRF for subsequent reuse. We will dispose of the remaining 3 600 tonnes (7%) 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 \$1.7 million 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)).

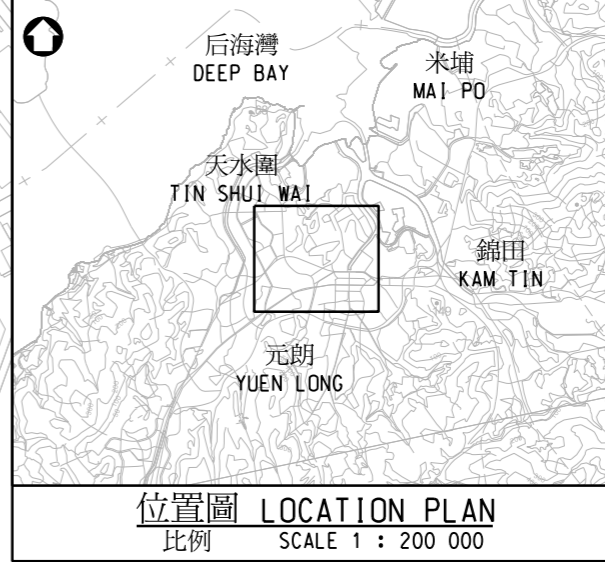
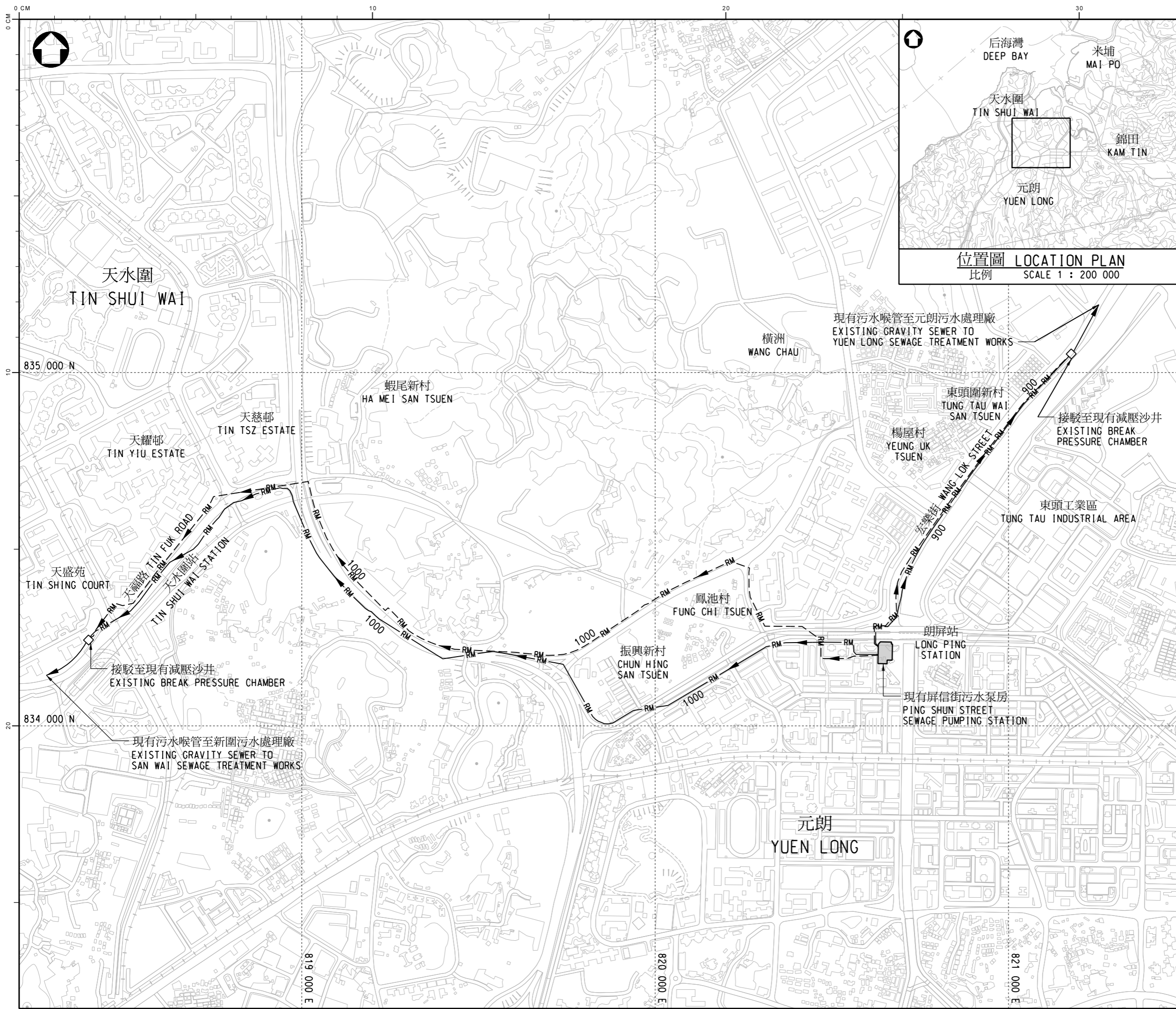
HERITAGE IMPLICATIONS

12. The proposed works 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

13. No land resumption is required for the proposed works.

Environment Bureau
Drainage Services Department
March 2021



圖例 LEGEND :

—RM— 900	擬修復現有直徑900毫米的污水泵喉 EXISTING 900mm DIAMETER RISING MAIN TO BE REHABILITATED
—RM— 1000	擬修復現有直徑1000毫米的污水泵喉 EXISTING 1000mm DIAMETER RISING MAIN TO BE REHABILITATED
—RM— 900	擬新建直徑900毫米的污水泵喉 PROPOSED 900mm DIAMETER RISING MAIN TO BE CONSTRUCTED
—RM— 1000	擬新建直徑1000毫米的污水泵喉 PROPOSED 1000mm DIAMETER RISING MAIN TO BE CONSTRUCTED

位置圖 LOCATION PLAN
比例 SCALE 1 : 200 000

版 no.	日期 date	修改項目 description	簡簽 initial
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修訂 REVISION

	姓名 name	日期 date
繪畫 drawn	SIGNED K. S. LEUNG	15 DEC 2020
核對 checked	SIGNED Ir Y. H. LEE	15 DEC 2020
批核 approved	SIGNED Ir S. Y. CHAN	15 DEC 2020

圖則名稱 drawing title

工務工程計劃編號4417DS
- 元朗污水主幹泵喉建造及修復工程
PWP ITEM NO. 4417DS
- CONSTRUCTION AND REHABILITATION OF TRUNK SEWAGE RISING MAINS IN YUEN LONG

圖則編號 drawing no.	比例 scale
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DCM/2020/036 1 : 10 000

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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

4419DS – Construction and rehabilitation of sewage rising mains in Tai Po Kau

PROJECT SCOPE

The proposed scope of works under **4419DS** comprises –

- (a) the construction of about 600 metres (m) of twin sewage rising mains with a diameter of 300 millimetres (mm) between Tai Po Kau Sewage Pumping Station (TPKSPS) and the sewerage network at Nam Wan Road; and
- (b) ancillary works¹.

— A plan showing the locations of the proposed works is at **Annex to Enclosure 5**.

JUSTIFICATION

2. According to the evaluation of the “Enhanced Management of Underground Sewer and Drain Networks Feasibility Study” conducted in 2015, a section of rising main between TPKSPS and the sewerage network at Nam Wan Road should be replaced. This existing single-pipe rising main serves a planned population of about 11 000. As it has been in services continuously for more than 35 years, it is suffering from ageing and deterioration. If this rising main is damaged or encountered operational failure, the water quality of Tolo Harbour will be adversely affected.

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

3. We now propose to construct about 600 m of twin rising mains with a diameter of 300 mm to substitute for the existing one. Trenchless technologies will be employed as far as possible to reduce inconvenience to the public.

4. We plan to commence the proposed works upon obtaining funding approval from the Finance Committee for target completion of the works in around two years.

FINANCIAL IMPLICATIONS

5. We estimate that the total cost of the proposed works (as detailed in paragraph 1 above) to be \$107.6 million in money-of-the-day prices.

PUBLIC CONSULTATION

6. We have consulted the Planning, Housing and Works Committee of the Tai Po District Council on 17 November 2020. The Committee supported the proposed works.

ENVIRONMENTAL IMPLICATIONS

7. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). The project will not cause long-term environmental impacts. We have included in the project estimate the cost to implement suitable mitigation measures to control the short-term environmental impacts.

8. 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.

9. 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 (PFRF²). 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.

10. We will also 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.

11. We estimate that the proposed works will generate in total about 6 000 tonnes of construction waste. Of these, we will reuse about 1 200 tonnes (20%) of inert construction waste on site and deliver about 4 400 tonnes (73%) of inert construction waste to PFRF for subsequent reuse. We will dispose of the remaining 400 tonnes (7%) of non-inert construction waste at landfills. The total cost for disposal of the construction waste at PFRF and landfill sites is estimated to be about \$392,000 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)).

² 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.

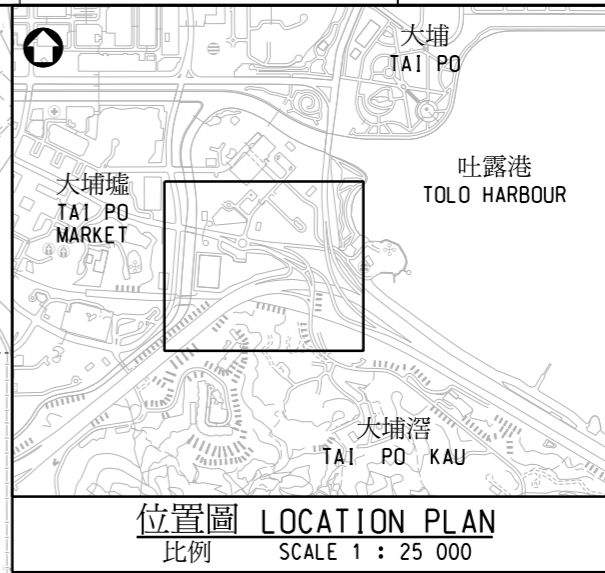
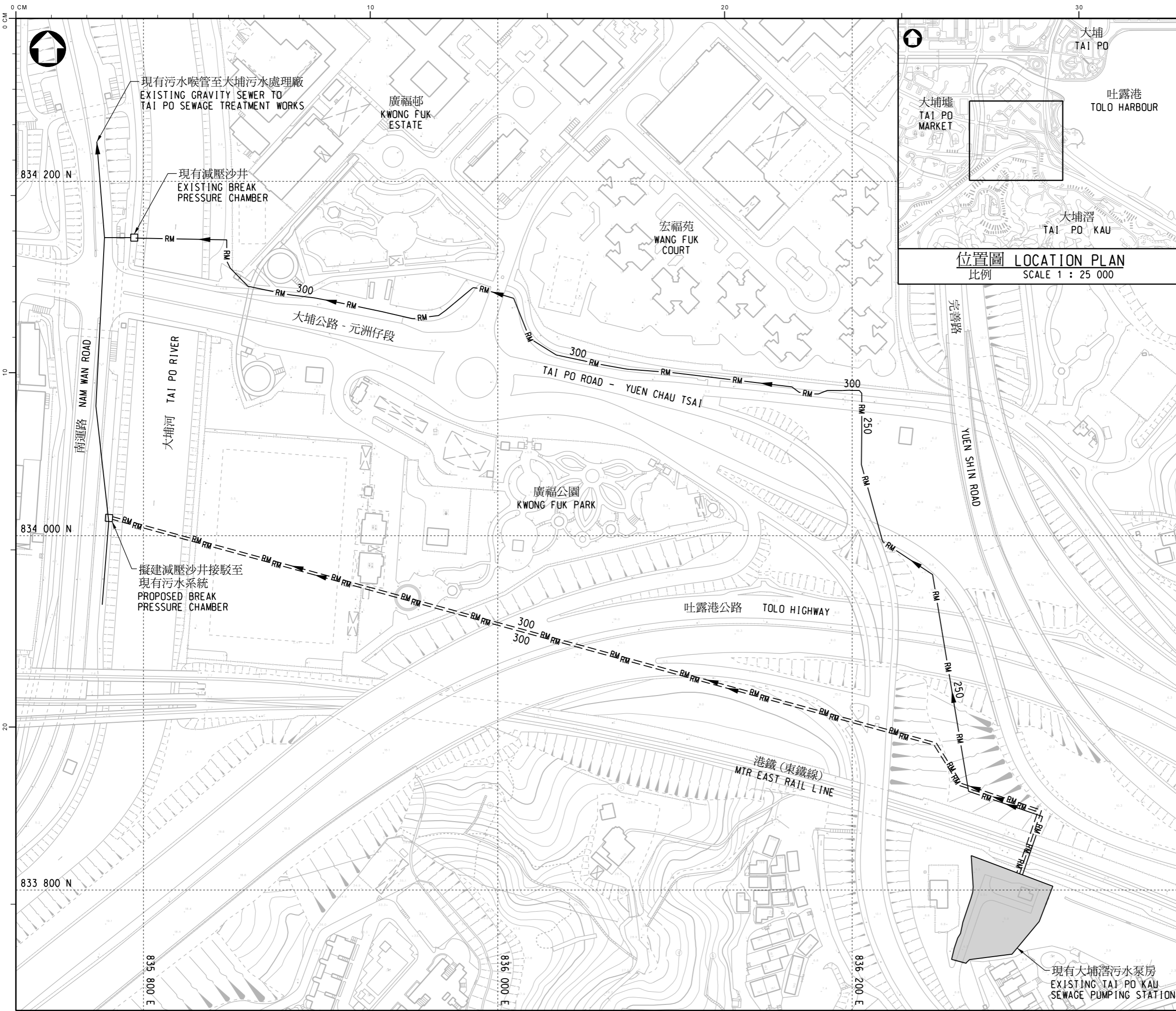
HERITAGE IMPLICATIONS

12. The proposed works 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

13. The proposed works will only involve Government land. No land resumption is required.

Environment Bureau
Drainage Services Department
March 2021



圖例 LEGEND :

	擬保留現有直徑250毫米的污水泵喉作緊急備用喉管 EXISTING 250mm DIAMETER RISING MAIN TO BE RETAINED AS EMERGENCY BACKUP
	擬保留現有直徑300毫米的污水泵喉作緊急備用喉管 EXISTING 300mm DIAMETER RISING MAIN TO BE RETAINED AS EMERGENCY BACKUP
	擬新建直徑300毫米的污水泵喉 PROPOSED 300mm DIAMETER RISING MAIN TO BE CONSTRUCTED

版 no.	日期 date	修改項目 description	簡簽 initial
修訂 REVISION			
	姓名 name	日期 date	
繪畫 drawn	SIGNED K. S. LEUNG	11 MAR 2021	
核對 checked	SIGNED Ir Y. H. LEE	11 MAR 2021	
批核 approved	SIGNED Ir S. Y. CHAN	11 MAR 2021	

圖則名稱 drawing title

工務工程計劃編號4419DS
- 大埔灣污水泵喉建造及修復工程
PWP ITEM NO. 4419DS
- CONSTRUCTION AND REHABILITATION OF SEWAGE RISING MAINS IN TAI PO KAU

圖則編號 drawing no.	比例 scale
DCM/2020/037	1 : 2000

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

4420DS – Construction and rehabilitation of trunk sewage rising mains in Yau Tong

PROJECT SCOPE

The proposed scope of works under **4420DS** comprises –

- (a) the construction of about 3.1 kilometres (km) of sewage rising main with a diameter of 900 millimetres (mm) between Yau Tong Sewage Pumping Station (YTSPS) and Kwun Tong Preliminary Treatment Works (KTPTW);
- (b) the rehabilitation of about 2.5 km of rising main with a diameter of 900 mm between YTSPS and KTPTW; and
- (c) ancillary works¹.

— A plan showing the location of the proposed works is at **Annex to Enclosure 6**.

JUSTIFICATIONS

2. According to the evaluation of the “Enhanced Management of Underground Sewer and Drain Networks – Feasibility Study” conducted in 2015, a section of the trunk rising main between YTSPS and KTPTW should be rehabilitated. This existing single-pipe rising main serves a planned population of about 180 000. As it has been in service continuously for more than 27 years, it is suffering from ageing and deterioration. If the rising main is damaged or encountered operational failure, the water quality of Victoria Harbour will be

¹ Ancillary works include the utilities diversion, provision of manholes, demolition of about 30 metres of existing RM, temporary closure and reinstatement of carriageways/footpaths/open space, necessary landscaping works that are required to complete the proposed works.

adversely affected.

3. We now propose to rehabilitate about 2.5 km of the existing rising main and construct about 3.1 km of new rising main. Approximate 300 metres of the existing rising main will be abandoned, of which, a small section across Tsui Ping River will be demolished. Trenchless technologies will be employed as far as possible to reduce inconvenience to the public.

4. We plan to commence the proposed works upon obtaining funding approval from the Finance Committee for target completion of the works in around five years.

FINANCIAL IMPLICATIONS

5. We estimate that the total cost of the proposed works (as detailed in paragraph 1 above) to be \$621.1 million in money-of-the-day prices.

PUBLIC CONSULTATION

6. We have consulted the Food, Environment and Hygiene Committee of Kwun Tong District Council on 17 November 2020. The Committee supported the proposed works.

ENVIRONMENTAL IMPLICATIONS

7. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). The project will not cause long-term environmental impacts. We have included in the project estimate the cost to implement suitable mitigation measures to control the short-term environmental impacts.

8. 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.

9. 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 (PFRF²). 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.

10. We will also require the contractors to submit for approval a plan setting out 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.

11. We estimate that the proposed works will generate in total about 21 300 tonnes of construction waste. Of these, we will reuse about 5 300 tonnes (25%) of inert construction waste on site, and deliver about 14 600 tonnes (68%) of inert construction waste to PFRF for subsequent reuse. We will dispose of the remaining 1 400 tonnes (7%) of non-inert construction waste at landfills. The

² 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.

total cost for disposal of construction waste at PFRF and landfill sites is estimated to be about \$1.3 million 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)).

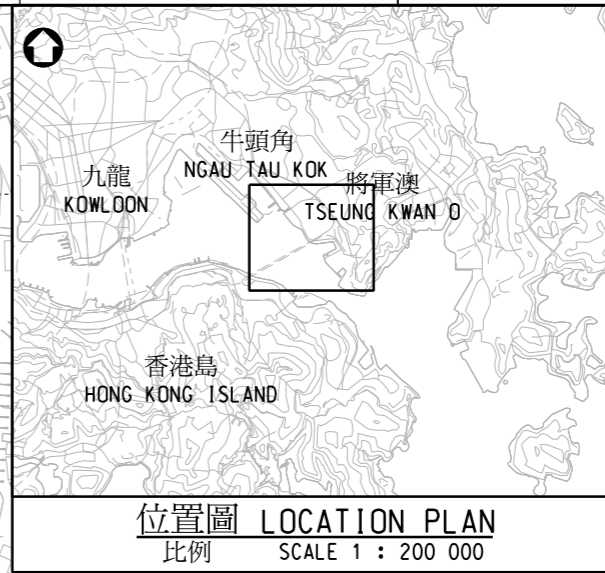
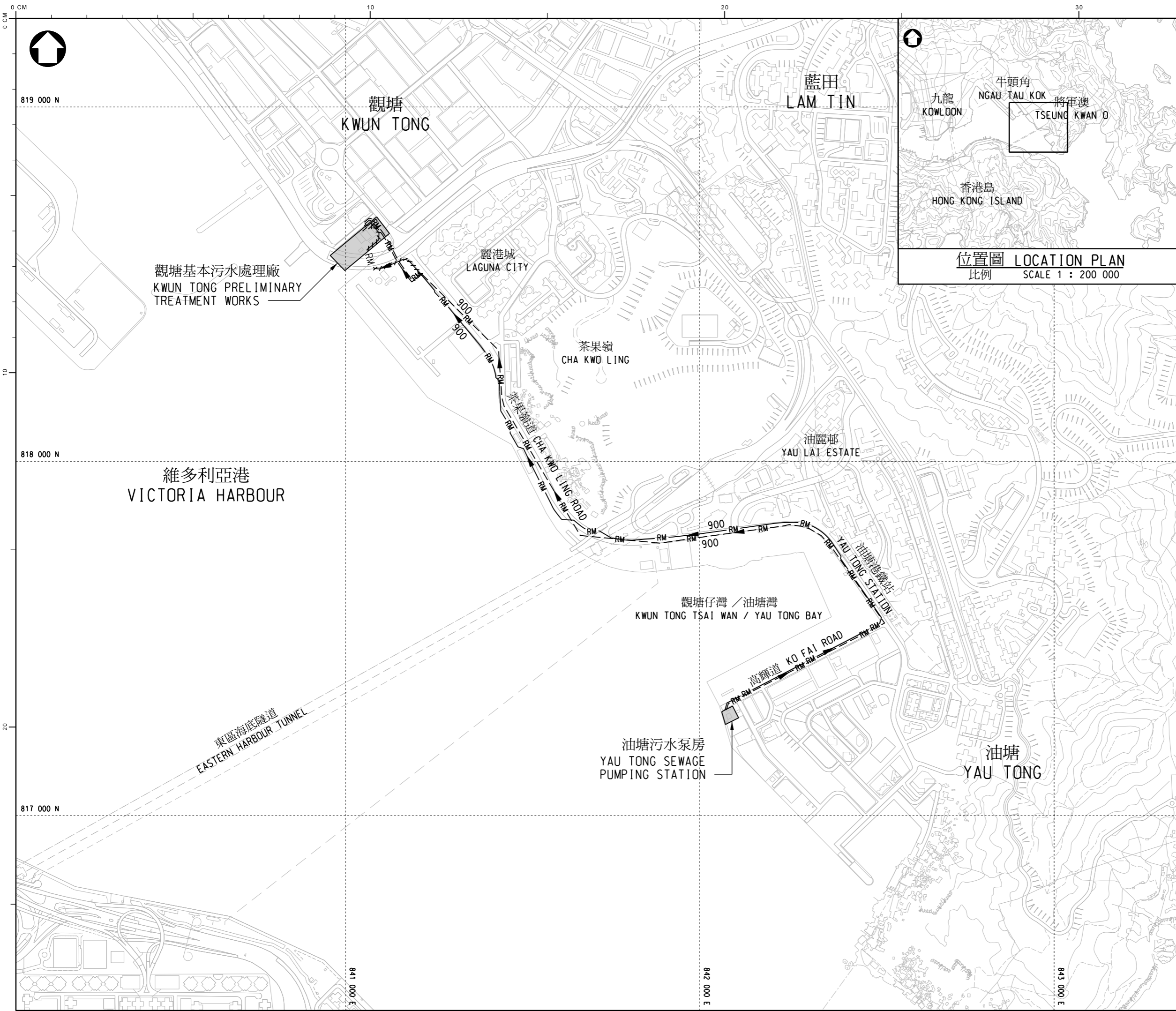
HERITAGE IMPLICATIONS

12. The proposed works 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

13. The proposed works will only involve Government land. No land resumption is required.

Environment Bureau
Drainage Services Department
March 2021



圖例 LEGEND :

	擬修復現有直徑900毫米的污水泵喉 EXISTING 900mm DIAMETER RISING MAIN TO BE REHABILITATED
	擬新建直徑900毫米的污水泵喉 PROPOSED 900mm DIAMETER RISING MAIN TO BE CONSTRUCTED
	擬廢棄/拆除現有直徑900毫米的污水泵喉 EXISTING 900mm DIAMETER RISING MAIN TO BE ABANDONED/DEMOLISHED

版 no.	日期 date	修改項目 description	簡簽 initial
修訂 REVISION			
		姓名 name	日期 date
繪畫 drawn		SIGNED L. L. LIU	1 MAR 2021
核對 checked		SIGNED Ir Y. H. LEE	1 MAR 2021
批核 approved		SIGNED Ir S. Y. CHAN	1 MAR 2021

圖則名稱 drawing title

工務工程計劃編號4420DS
- 油塘污水主幹泵喉建造及修復工程
PWP ITEM NO. 4420DS
- CONSTRUCTION AND REHABILITATION OF TRUNK SEWAGE RISING MAINS IN YAU TONG

圖則編號 drawing no.	比例 scale
DCM/2020/038	1 : 10 000

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香港特別行政區政府渠務署
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