

**For discussion
on 30 April 2019**

**Legislative Council
Panel on Development**

**PWP Item No. 172CD (part)
Rehabilitation of Underground Stormwater Drains – Stage 2**

PURPOSE

This paper briefs Members on the proposal to upgrade part of **172CD** (i.e. **172CD (part)**), entitled “Rehabilitation of underground stormwater drains – stage 2”, to Category A for conducting condition survey and rehabilitation works of underground stormwater drains of concern in districts of Tsuen Wan, Kwai Tsing, Sham Shui Po, Yau Tsim Mong, Kowloon City and Wong Tai Sin districts (the Six Districts).

PROJECT SCOPE

2. The proposed works under **172CD (part)** comprise –
 - (a) condition survey of about 55 kilometers (km) of underground stormwater drains and associated manholes in the Six Districts;
 - (b) rehabilitation of about 11 km of underground stormwater drains and associated manholes in the Six Districts; and
 - (c) ancillary works¹.

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

3. Subject to the funding approval of the Finance Committee (FC), we plan to commence the proposed works in the first quarter of 2020 for completion in the third quarter of 2024. We will retain the remaining works of **172CD** in Category B, which comprise condition survey of about 78 km of underground stormwater drains and associated manholes, together with rehabilitation of about 19 km of underground stormwater drains and associated manholes, in other

¹ Ancillary works include temporary closure and reinstatement of carriageways/footpaths/open space, etc.

districts. We will seek funding approval for the remainder of **172CD** later after completion of the detailed design of the remaining works.

JUSTIFICATION

4. There are about 2 400 km of underground stormwater drains in Hong Kong. Routine inspection and maintenance are conducted on these stormwater drains, and repairs will be made when defects are detected. As many of these stormwater drains have been in service for years and are suffering from ageing and deterioration at an increasing rate, it is necessary to carry out detailed surveys to ensure that defects can be timely detected and thoroughly rectified. In the past few years, there have been incidents of ageing pipe collapse, resulting in road subsidence and hence disruptions to traffic and nuisance to public. Such incidents are expected to become more frequent as the stormwater drains age further.

5. In 2015, the “Enhanced Management of Underground Sewer and Drain Networks - Feasibility Study” (the Study) evaluated the risks of failure of the existing underground stormwater drains. The Study categorised one group of underground stormwater drains as confirmed to have high risk of structural failure, requiring prioritized rehabilitation, while another group of underground stormwater drains is predicted to have high risk of structural failure but their conditions and needs for rehabilitation would have to be verified by further on-site condition surveys. In this regard, a territory-wide replacement and rehabilitation (R&R) programme has been formulated. Details of the R&R programme are outlined in **Enclosure 2**.

6. In respect of the stormwater drains to be rehabilitated in the Six Districts, their average years of service are higher than those in other districts and thus their overall risk of pipe collapse is relatively higher. Further, there are other drainage projects in the Six Districts with the construction works about to start or commenced. The proposed and other drainage works could be implemented in a coordinated manner with a view to avoiding repeated excavation or road closure and shortening the overall time for the drainage works, thereby alleviating the impact of the works to the Six Districts as well as minimising inconvenience to the public.

7. The proposed works under **172CD (part)** include the rehabilitation of about 11 km of underground stormwater drains in the Six Districts, which have been confirmed by previous inspections as having high risk of structural failure. The rehabilitation works would involve the installation of internal lining through the drains. Trenchless technologies will be employed as far as possible to reduce road excavation works and minimise the traffic impact. Besides, the proposed

works include conducting condition survey for 55 km of stormwater drains in the Six Districts.

8. Other than the above proposed works and other on-going works, we will continue to schedule regular inspection plans to monitor the conditions of underground stormwater drains throughout the territory and review the respective R&R needs according to the prevailing conditions of stormwater drains.

FINANCIAL IMPLICATIONS

9. We estimate the cost of the proposed works as detailed in paragraph 2 above to be \$515.1 million in money-of-the-day (MOD) prices.

PUBLIC CONSULTATION

10. We consulted six Committees of the relevant District Councils between December 2018 and February 2019, as listed in **Enclosure 3**. Members of the Committees supported the proposed works.

ENVIRONMENTAL IMPLICATIONS

11. The project is not a designated project under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). The Drainage Services Department conducted a Preliminary Environmental Review (PER) for the proposed works in January 2019. The PER concluded and the Director of Environmental Protection agreed that the proposed works would not have any long-term adverse environmental impacts. We have included in the project estimate of the proposed works the cost for implementation of the environmental mitigation measures.

12. For short-term environmental impacts during construction, we will minimise environmental nuisance to within established standards and guidelines through the implementation of appropriate mitigation measures in the contract. These measures include the use of temporary noise barriers and silenced construction equipment, water-spraying to the construction site and on-site treatment of site run-off. We will carry out regular site inspections to ensure these measures and good site practices will be properly implemented on site.

13. At the planning and design stages, we have considered measures to reduce generation of construction waste where possible. In addition, we will

require the contractor to reuse inert construction waste (e.g. excavated soil) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste to the public fill reception facilities (PFRF)². We will encourage the contractor to maximise the use of recycled or recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

14. At the construction stage, we will require the contractor 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 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 and non-inert construction waste at PFRF and landfills respectively through a trip-ticket system.

15. We estimate that the proposed works will generate a total of about 9 800 tonnes of construction waste. Of these, we will reuse about 4 800 tonnes (49%) of inert construction waste on site, deliver about 2 450 tonnes (25%) of inert construction waste to PFRF for subsequent reuse. We will dispose of the remaining 2 550 tonnes (26%) of non-inert construction waste to landfills for disposal. The total cost for disposal of construction waste at PFRF and landfill sites is estimated to be \$684,000 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

16. 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

17. The proposed works will only involve government land. No land resumption is required.

² PFRF are specified in Schedule 4 of Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N). Disposal of inert construction waste in PFRF requires a licence issued by the Director of Civil Engineering and Development.

TRAFFIC IMPLICATIONS

18. We have conducted a traffic impact assessment (TIA) for the proposed works. The TIA indicated that the proposed works will not cause significant traffic impact to the surrounding road network during construction. Temporary traffic arrangements (TTAs) will be implemented to facilitate the construction works. We will establish a traffic management liaison group to discuss, scrutinize and review the TTAs proposed by the contractors with a view to minimizing traffic impact arising from the proposed works. In addition, we will set up a telephone hotline to respond to public enquiries or complaints.

BACKGROUND

19. In September 2015, we upgraded **172CD** to Category B.

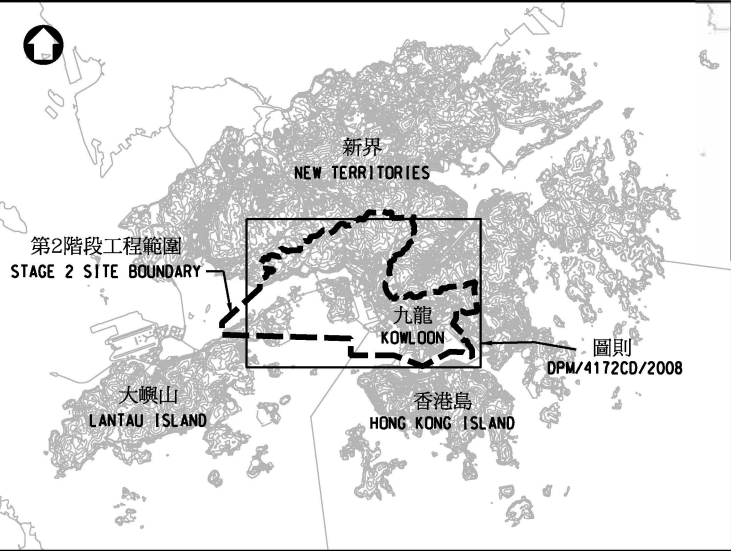
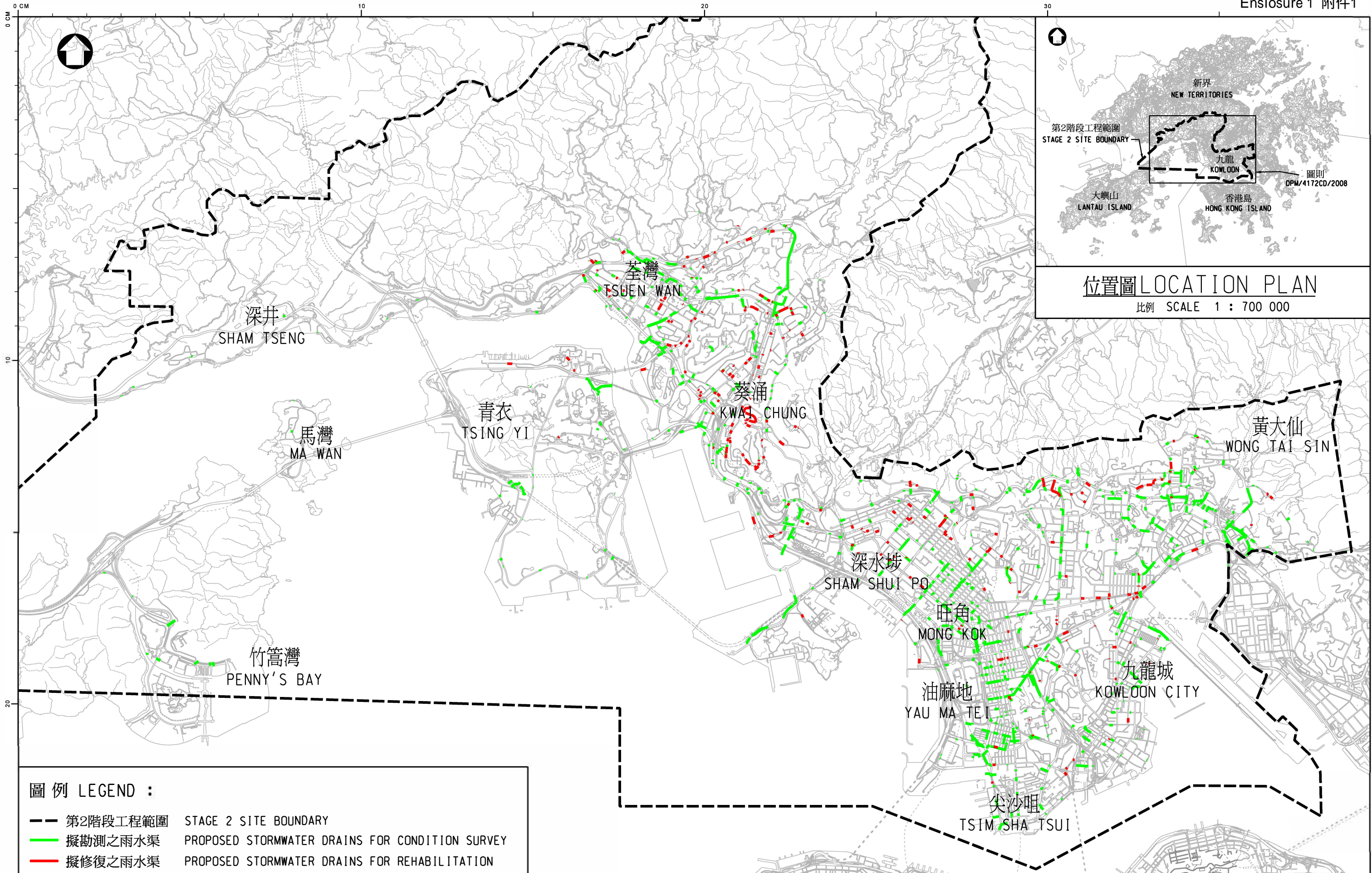
20. In June 2018, we upgraded part of **172CD** to Category A as **180CD** “Rehabilitation of underground stormwater drains stage 1” at an approved project estimate of \$122.8 million in MOD prices for implementing part of the rehabilitation works throughout the territory. The stage 1 works commenced in January 2019 for completion by 2022.

21. We have substantially completed the detailed design of the proposed works mentioned in paragraph 2 above.

WAY FORWARD

22. Regarding the proposed works under **172CD (part)** as stated above, we plan to seek funding approval from the FC in the current legislative session after consulting the Public Works Subcommittee. Members are invited to comment on the proposed funding application.

Development Bureau
Drainage Services Department
April 2019



圖例 LEGEND :

- 第2階段工程範圍 STAGE 2 SITE BOUNDARY
- 擬勘測之雨水渠 PROPOSED STORMWATER DRAINS FOR CONDITION SURVEY
- 擬修復之雨水渠 PROPOSED STORMWATER DRAINS FOR REHABILITATION

圖則名稱 drawing title
工務計劃項目172CD 號(部分)
地下雨水渠修復工程 - 第2階段
PWP ITEM NO. 172CD (PART)
REHABILITATION OF UNDERGROUND STORMWATER DRAINS - STAGE 2

繪畫 drawn	SIGNED H.Y. LEE	日期 date	15 FEB 2019
核對 checked	SIGNED K.Y. CHEN	日期 date	15 FEB 2019
批核 approved	SIGNED K.W. FUNG	日期 date	15 FEB 2019
部門 office	工程管理部 PROJECT MANAGEMENT DIVISION		

圖則編號 drawing no.	比例 scale
DPM/4172CD/2008	1:55 000
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172CD (part) Rehabilitation of Underground Stormwater Drains – Stage 2

Territory-wide Replacement and Rehabilitation Programme for Stormwater Drains

Works Package	Scope of Replacement and Rehabilitation (R&R) Works
180CD “Rehabilitation of underground stormwater drains - stage 1” [On-going]	<ul style="list-style-type: none"> Condition surveys of 35 km of stormwater drains in various areas of the territory Rehabilitation of 11 km of stormwater drains in various areas of the territory
172CD (part) “Rehabilitation of underground stormwater drains – stage 2” [Proposed]	<ul style="list-style-type: none"> Condition surveys of 55 km of stormwater drains in the Six Districts[#] Rehabilitation of 11 km of stormwater drains in the Six Districts[#] <p>[#] Tsuen Wan, Kwai Tsing, Sham Shui Po, Yau Tsim Mong, Kowloon City and Wong Tai Sin districts</p>
Remainder of 172CD	<ul style="list-style-type: none"> Condition surveys of 78 km of stormwater drains in areas other than the Six Districts Rehabilitation of 19 km of stormwater drains in areas other than the Six Districts <p>(FC’s approval will be sought for the above proposed works later after completion of the detailed design.)</p>
R&R works to be carried out by maintenance teams of Drainage Services Department	<ul style="list-style-type: none"> Condition surveys of 78 km of stormwater drains in various areas of the territory Rehabilitation of 30 km of stormwater drains in various areas of the territory
Other R&R works under planning	<ul style="list-style-type: none"> Rehabilitation of stormwater drains confirmed by condition surveys to have high risk of structural failure

172CD (part) Rehabilitation of Underground Stormwater Drains – Stage 2

Consultation with District Councils

Date	District Council	Committee
18 December 2018	Kwai Tsing	Planning and District Facilities Management Committee
18 December 2018	Wong Tai Sin	Food and Environmental Hygiene Committee
3 January 2019	Tsuen Wan	Environmental and Health Affairs Committee
10 January 2019	Kowloon City	Housing and Infrastructure Committee
17 January 2019	Yau Tsim Mong	Food, Environmental Hygiene and Public Works Committee
14 February 2019	Sham Shui Po	Environment and Hygiene Committee