

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

Head 704 – DRAINAGE

Civil Engineering – Drainage and erosion protection

127CD – Drainage improvement in Northern Hong Kong Island – Sheung Wan stormwater pumping station

Members are invited to recommend to Finance Committee the upgrading of the remainder of **127CD** to Category A at an estimated cost of \$177.6 million in money-of-the-day prices for the construction of Sheung Wan stormwater pumping station and the associated drains along Chung Kong Road in Sheung Wan.

PROBLEM

The low-lying areas bounded by Rumsey Street, Queen's Road Central/West, Queen Street and Connaught Road Central/West in Sheung Wan are susceptible to frequent flooding during heavy rainstorms, particularly at times of high tidal levels.

PROPOSAL

2. The Director of Drainage Services, with the support of the Secretary for the Environment, Transport and Works, proposes to upgrade the remainder of **127CD** to Category A at an estimated cost of \$177.6 million in money-of-the-day (MOD) prices for the construction of Sheung Wan stormwater pumping station and the associated drains along Chung Kong Road in Sheung Wan.

/PROJECT

PROJECT SCOPE AND NATURE

3. The scope of the proposed works comprises –
- (a) construction of a stormwater pumping station;
 - (b) construction of about 350 metres (m) of drains of diameter ranging from 900 millimeters (mm) to 2 100 mm;
 - (c) landscaping works; and
 - (d) ancillary works.

———— A site plan showing the proposed works is at Enclosure 1. A photomontage
———— illustrating the visual effect of the proposed Sheung Wan stormwater pumping station is at Enclosure 2.

4. We plan to commence construction in July 2006 for completion in October 2009.

JUSTIFICATION

5. Sheung Wan is one of the earliest settlements in Hong Kong. Most of the infrastructures including the existing drains were designed and constructed decades ago to meet the flow requirements and standards at that time. Although we have been making local improvements to the drainage systems to cater for developments from time to time, the low-lying areas of about 10 hectares including Bonham Strand, Wing Lok Street and Man Wa Lane are susceptible to flooding during heavy rainstorms with a return period¹ of one in two years coincided with a probable high spring tide in a year. As the lowest ground level in the area is only slightly above the mean high tide level, the flooding situation would become worse with high tide surge because the existing drainage system could not effectively drain the run-off away due to the small difference in ground and sea levels. The situation would be the worst during extreme high tides, when the sea level is higher than the ground level in Sheung Wan causing seawater to flow back and overflow from manholes and gratings.

/6.

¹ “Return period” is the average number of years during which a certain severity of flooding will occur once, statistically. A longer return period means a rarer chance of occurrence of a more severe flooding.

6. To alleviate the flooding problem and to meet the community's increasing expectation for better flood protection standards, we plan to provide stormwater drains to intercept and divert the upland flows away from the low-lying areas and for surface run-off getting into the low-lying areas, the water will be disposed of to the harbour by way of a stormwater pumping station. We have planned to implement the above scheme in two stages. The stage 1, which started in March 2006 for completion in October 2008, comprises the construction of the stormwater drains along Lok Ku Road, Queen's Road Central and Gilman's Bazaar to intercept and divert the upland flows away from the low-lying areas. The remaining works under stage 2 comprises the construction of the proposed stormwater pumping station and the associated works.

7. Upon completion of the proposed works, the general standards of flood protection level of the low-lying areas in Sheung Wan can be raised to withstand rainstorms with a return period of one in 50 years.

FINANCIAL IMPLICATIONS

8. We estimate the cost of the proposed works to be \$177.6 million in MOD prices (see paragraph 9 below), made up as follows –

	\$ million
(a) Construction of Sheung Wan stormwater pumping station	135.5
(i) civil works	111.0
(ii) electrical and mechanical works	24.5
(b) Construction of associated stormwater drains	11.6
(c) Landscaping works	4.0
(d) Ancillary works	0.5
(e) Environmental mitigation measures	3.0
(f) Contingencies	15.1

/Sub-total

		\$ million	
	Sub-total	169.7	(in September 2005 prices)
(g)	Provision for price adjustment	7.9	
	Total	177.6	(in MOD prices)

9. Subject to approval, we will phase the expenditure as follows –

Year	\$ million (Sept 2005)	Price adjustment factor	\$ million (MOD)
2006 – 2007	19.5	1.01500	19.8
2007 – 2008	44.0	1.03023	45.3
2008 – 2009	53.0	1.04568	55.4
2009 – 2010	25.0	1.06136	26.5
2010 – 2011	19.0	1.07728	20.5
2011 – 2012	9.2	1.10152	10.1
	169.7		177.6

10. We have derived the MOD estimate on the basis of the Government’s latest forecast of the trend rate of change in the prices of the public sector building and construction output for the period from 2006 to 2012. We will tender the proposed works under two re-measurement contracts, one for foundation works of the stormwater pumping station together with the associated drainage works and the other for the station itself, because of the uncertainties of underground utilities such as electricity cables, telephone cables and water pipes. The stormwater pumping station contract will provide for price adjustments because the contract period will exceed 21 months.

11. We estimate the annual recurrent expenditure arising from this project to be \$2.7 million.

/PUBLIC

PUBLIC CONSULTATION

12. On 23 May 2002, we consulted the Food, Environment, Hygiene and Works Committee (the FEHW Committee) of the Central and Western (C&W) District Council on the proposed pumping station for discharging the surface run-off during heavy rainstorms.

13. On 4 November 2004, we consulted the Traffic and Transport Committee of C&W District Council on the proposed stormwater drains along Chung Kong Road associated with the proposed stormwater pumping station. Members of the Committee supported the implementation of the proposed works.

14. On 28 July 2005, we consulted the FEHW Committee on the design of the proposed pumping station including the revised location of the proposed pumping station to the western part of the site next to the seawater pumping station of the Water Supplies Department. Members supported the proposal and requested us to expedite the implementation of the project.

15. We consulted the Legislative Council Panel on Planning, Lands and Works on the proposed works by circulation of an information paper on 14 November 2005. Members raised no objection to the proposed works.

16. As the site for the proposed pumping station is currently zoned as “Open Space”, we consulted the Harbour Planning Review (HPR) Subcommittee of the Harbour-front Enhancement Committee on 15 June 2005. At the request of the HPR Subcommittee, we revised the scheme of the pumping station to minimise the visual impact on the harbour front and made a re-submission on 10 August 2005. Members of the HPR Subcommittee had no adverse comments on the location of the proposed pumping station but considered that there was still room to further refine the pumping station design, which was forwarded to the Town Planning Board for consideration. We obtained the Board’s approval under Section 16 of the Town Planning Ordinance to construct the proposed pumping station within the site on 10 December 2005.

LAND ACQUISITION

17. The proposed works do not require any land acquisition.

ENVIRONMENTAL IMPLICATIONS

18. The project is not a designated project under the Environmental Impact Assessment Ordinance. We have completed a Preliminary Environmental Review which concluded that there would not be any long term adverse environmental impacts arising from the proposed works. For short term impacts caused by the works during construction, we will control noise, dust and site run-off to levels within established standards and guidelines through implementation of mitigation measures, such as the use of temporary noise barriers, silenced construction plant and water-spraying to reduce noise and dust generated by the works. We will also carry out regular site inspections to ensure that these recommended mitigation measures and good site practices would be properly implemented on site. We have included in the project estimate \$3 million in September 2005 prices for implementation of the environmental mitigation measures.

19. We have considered in the planning and design stages ways of minimising the generation of construction and demolition (C&D) materials by carefully designing the alignment and levels of the proposed drains. In addition, we will require the contractor to reuse inert C&D materials on site or in other suitable construction sites as far as possible, in order to minimise the disposal of C&D materials to public fill reception facilities². We will encourage the contractor to maximise the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimise the generation of construction waste.

20. We will also require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to avoid, reduce, reuse and recycle C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMP. We will control the disposal of public fill and C&D waste to public fill reception facilities and landfills respectively through a trip-ticket system. We will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

/21.

² Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of public fill in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

21. We estimate that the project will generate about 71 600 tonnes of C&D materials. Of these, we will reuse about 7 400 tonnes (10%) on site and deliver 62 200 tonnes (87%) to public filling reception facilities for subsequent reuse. In addition, we will dispose of 2 000 tonnes (3%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be about \$1.9 million for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne³ at landfills.)

TRAFFIC IMPACTS

22. We have completed a traffic impact assessment and worked out mitigation measures to minimise possible disruption to traffic during construction of the drains. We will maintain smooth traffic flow through temporary traffic management measures. We will also display notice boards on site to explain the reason for the temporary traffic arrangements and to show the expected completion date of the concerned section. We will set up a telephone hotline for public enquiries or complaints. We will maintain existing vehicular entry and exit points, pedestrian routes and pedestrian crossing facilities, and design temporary traffic arrangements according to prevailing site constraints and up to the required standards.

23. To facilitate the pipelaying works along Chung Kong Road and maintain the traffic flow, we will widen the carriageway temporarily so as to maintain the number of traffic lanes to the east of its junction with Chung King Road during construction. To the west of its junction with Chung King Road, we will divide the proposed pipelaying works into a number of sections, each generally not exceeding 50 m in length. Each section will normally require the closure of one traffic lane.

24. During the construction period, we will establish a Traffic Management Liaison Group to discuss, scrutinise and review the proposed temporary traffic arrangements. We will maintain close contacts with the Transport Department, public transport operators, the Hong Kong Police Force and relevant government departments to review the situation so as to minimise any disruption caused. We will also maintain close contacts with the management offices of adjacent commercial buildings to derive temporary traffic arrangements which would cause lesser disruption to these commercial buildings.

/BACKGROUND

³ 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.

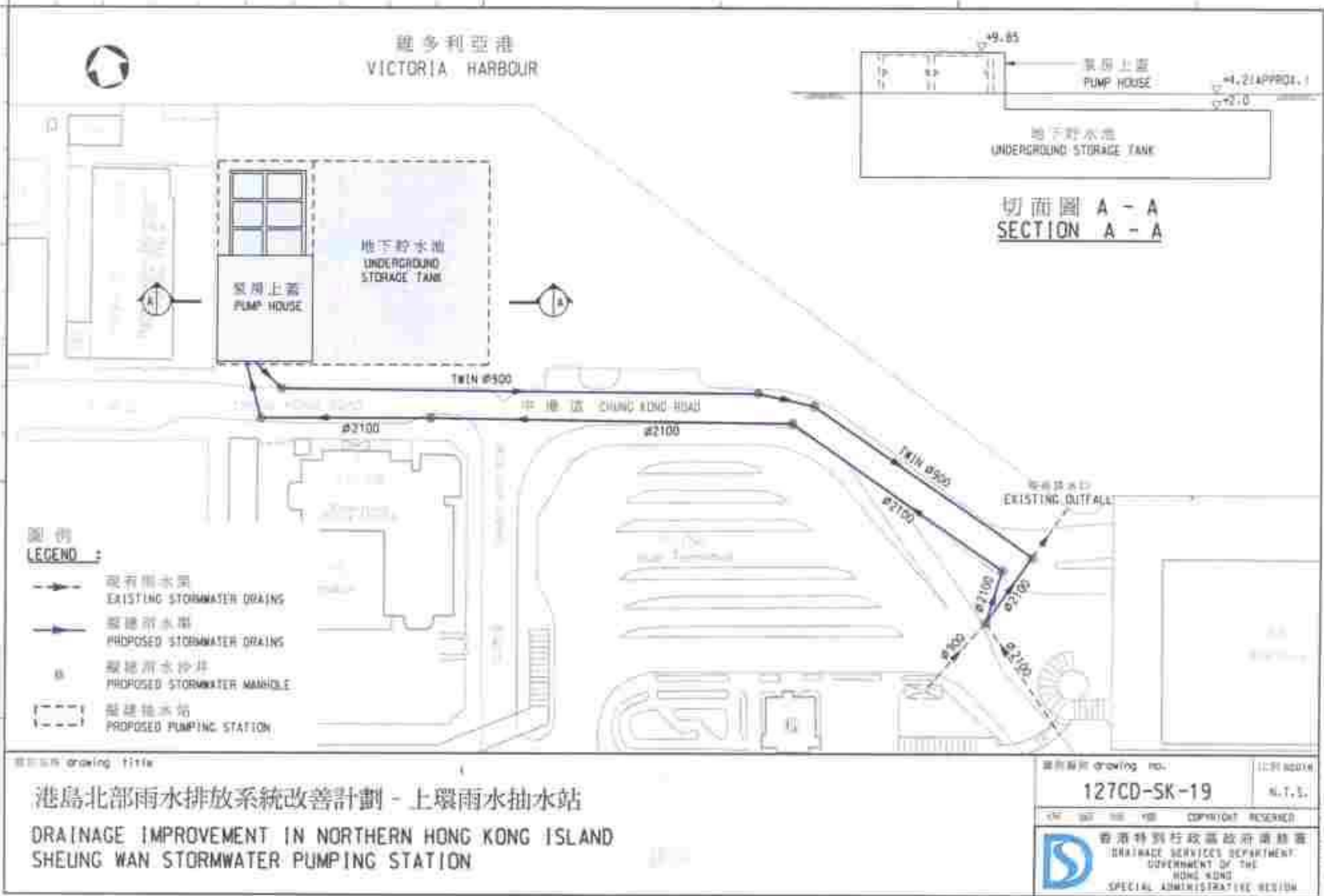
BACKGROUND INFORMATION

25. We included **127CD** in Category B in April 2002 for alleviating the flooding problem in the low-lying areas in Sheung Wan. We have deployed in-house resources to carry out the detailed design and will also deploy in-house resources to supervise the proposed works. We have completed the detailed design of the pumping station.

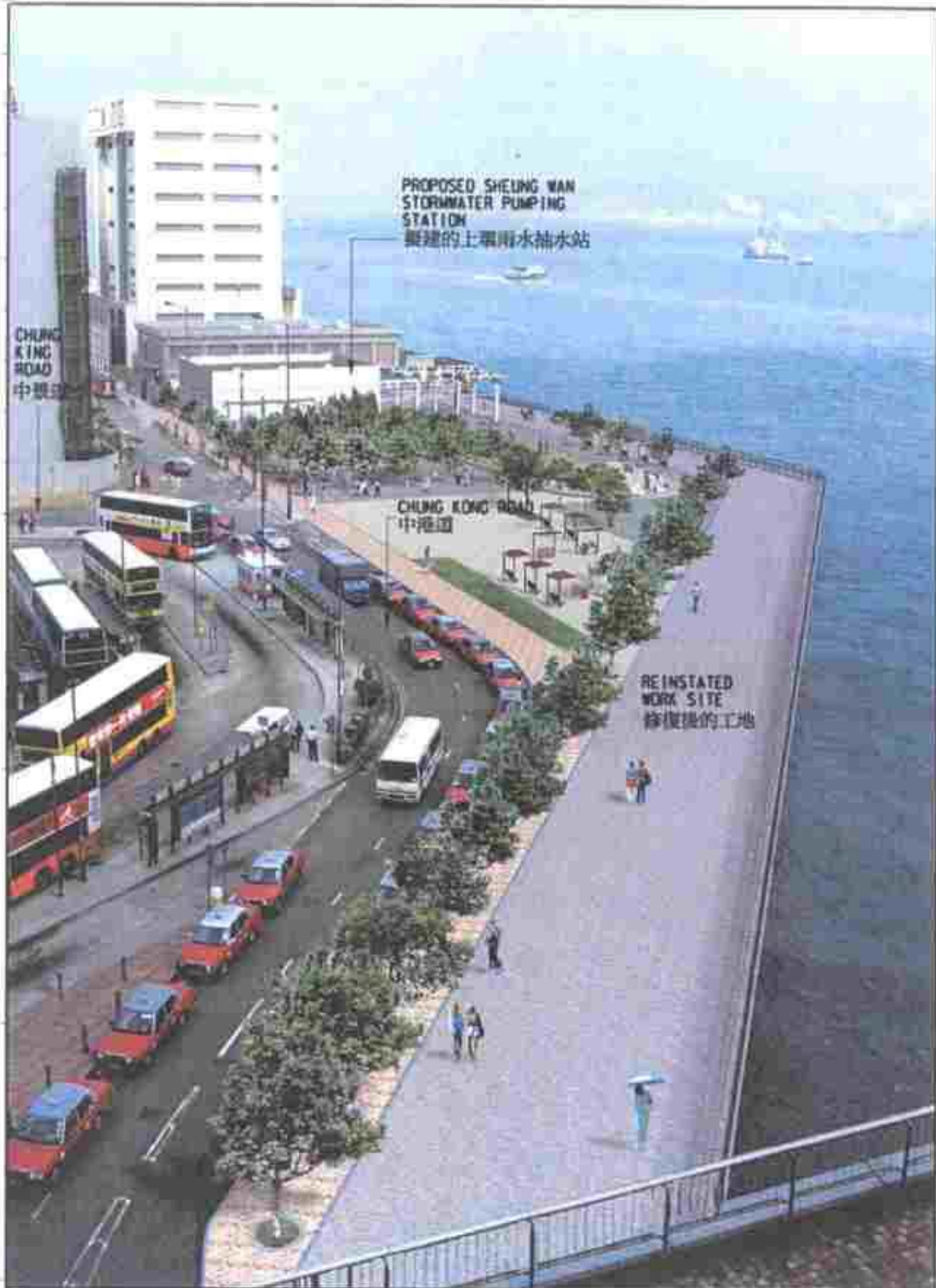
26. In January 2006, we upgraded part of **127CD** to Category A as **143CD** “Drainage improvement in Northern Hong Kong Island – intercepting drains at Queen’s Road Central” at an estimated cost of \$46.3 million in MOD prices. We started the works in March 2006 and will complete them in October 2008.

27. The proposed drainage improvement works will not involve any tree felling, but eight trees would need to be temporarily transplanted off site during construction. We will incorporate planting proposal as part of the project, including the planting of 110 trees, 20 270 shrubs and 525 square m of grassed area within the reinstated works site in the open space.

28. We estimate that the proposed works will create about 138 jobs (120 for labourers and 18 for professional/technical staff) providing a total employment of 4 250 man-months.



附圖 1 ENCLOSURE 1



drawing title

擬建之上環雨水抽水站模擬圖像

PHOTOMONTAGE OF THE PROPOSED SHEUNG WAN STORMWATER PUMPING STATION

drawing no.

127CD-SK-12

scale

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