

For information

**Legislative Council Panel on Planning, Lands and Works
102CD – Drainage improvement in Tuen Mun and Sham Tseng — package B**

PURPOSE

This paper briefs Members on the Administration's proposal to upgrade **102CD** "Drainage improvement in Tuen Mun and Sham Tseng (package B)" to Category A, at an estimated cost of about \$70 million in money-of-the-day (MOD) prices, for improving the flow capacity of the drainage system at Nai Wai and So Kwun Wat, Tuen Mun.

PROJECT SCOPE

2. The scope of the proposed works to be upgraded comprises –
 - (a) construction of about 1 100 m long drainage channel of width ranging from 14 to 20 metres (m) and ancillary works at So Kwun Wat; and
 - (b) construction of about 30 m of 3.8 m wide drainage channel, about 420 m of 4.8 m wide box culvert, and about 300 m of drainage pipeline with diameter ranging from 0.9 to 1.8 m and ancillary works at Nai Wai.

We plan to commence construction in May 2007 for completion in December 2009. A site plan and typical sections of the proposed works are at **Enclosure 1**.

JUSTIFICATION

3. The Tuen Mun and Sham Tseng Stormwater Drainage Master Plan Study identified that the existing drainage systems at Nai Wai and So Kwun Wat were insufficient to provide the required protection standard, resulting in flooding during heavy rainstorms. Flood incidents were recorded during the period from 1999 to 2005.
4. We propose to carry out drainage improvement works at Nai Wai and So Kwun Wat to alleviate the risks of flooding. Upon completion of the

proposed works, the standard of flood protection at Nai Wai and So Kwun Wat will be improved to withstand rainstorms with a one-in-50 year return period¹.

FINANCIAL IMPLICATIONS

5. We estimate the cost of the proposed works to be \$70 million (in MOD prices), made up as follows –

	\$ million
(a) Construction of drainage and ancillary works at	63.4
(i) So Kwun Wat	40.2
(ii) Nai Wai	23.2
(b) Environmental mitigation measures	2.4
(c) Contingencies	4.2
Total	<u>70.0</u> (in MOD prices)

6. We estimate that the annual recurrent expenditure arising from the proposed works to be about \$740,000.

PUBLIC CONSULTATION

7. We consulted the Environmental, Hygiene and District Development Committee (EHDDC) of Tuen Mun District Council on 20 May 2005 on the proposed drainage improvement works. Members of the EHDDC supported implementation of the proposed works.

ENVIRONMENTAL IMPLICATIONS

8. The project is not a designated project under the Environmental Impact Assessment Ordinance. We completed an Environmental Study (ES) for the project in June 2004, which concluded that with full implementation of the

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.

recommended mitigation measures and environmental monitoring and audit programme, there would not be any long term adverse environmental impacts arising from the proposed works. We would incorporate the recommendations of the ES into the works contract for implementation. For short-term impacts caused by the works during construction, we will control noise, dust and site run-off within the established standards and guidelines through implementation of mitigation measures, such as the use of temporary noise barriers and silenced construction equipment to reduce noise generation, water-spraying to reduce emission of dust and working in dry environment with barriers to control water pollution during excavation. We will also carry out regular site inspections to ensure that these recommended mitigation measures and good site practices will be properly implemented.

9. We have considered ways in the planning and design stages to reduce the generation of construction and demolition (C&D) materials. For example, we have determined the alignments of the proposed drainage channels such that excavation and demolition of existing structures would be minimized, and adopted standardized sections of reinforced concrete structures to minimize the use of formwork. We have adopted environmental friendly design such as gabion and rip-rap for most of the channel construction. We will encourage the contractor to use non-timber formwork and recyclable material for temporary works. We will also require the contractor to carry out on-site sorting to recover reusable or recyclable materials from C&D materials and to reuse inert C&D materials (e.g. the excavated material as filling material) on site or in other suitable construction sites as far as possible, in order to minimize the disposal of C&D materials to public fill reception facilities². We will encourage the contractor to maximize the use of recycled and recyclable C&D materials to further minimize the generation of construction waste.

10. We will also require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures (e.g. allocation of an area for waste segregation) to avoid, reduce and recycle C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMP. We will control 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 contractors 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.

11. We estimate that the project will generate about 82 900 tonnes of C&D materials. Of these, we will reuse about 13 400 tonnes (16%) on site and deliver 66 100 tonnes (80%) to public fill reception facilities for subsequent reuse. In addition, we will dispose of 3 400 tonnes (4%) at landfills. The total cost for

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 license issued by the Director of Civil Engineering and Development.

accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be about \$2.2 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 IMPLICATIONS

12. We have carried out a traffic impact assessment (TIA) for the proposed works. The TIA has concluded that the proposed works would not cause unacceptable traffic impact.

BACKGROUND INFORMATION

13. We included **102CD** “Drainage improvement in Tuen Mun and Sham Tseng (package B)” in Category B of the Public Works Programme in October 2003 for alleviating the flooding problems at Nai Wai and So Kwun Wat, Tuen Mun.

14. We have substantially completed the design by in-house resources and plan to start the drainage improvement works in May 2007 for completion in December 2009. We will also deploy in-house resources to supervise the construction.

15. Of the 215 trees within the project boundary, 69 trees will be preserved. The proposed works will involve the removal of 146 common trees including 141 trees to be felled and five trees to be replanted within the project site. All trees to be removed are not important trees⁴. We will incorporate planting proposal as part of the project, including estimated quantities of 4 672 trees, 11 465 shrubs and 10 622 square metres of grassed area.

16. We estimate that the proposed works will create about 47 jobs (40 for labourers and another seven for professional/technical staff) providing a total employment of 1 200 man-months.

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.

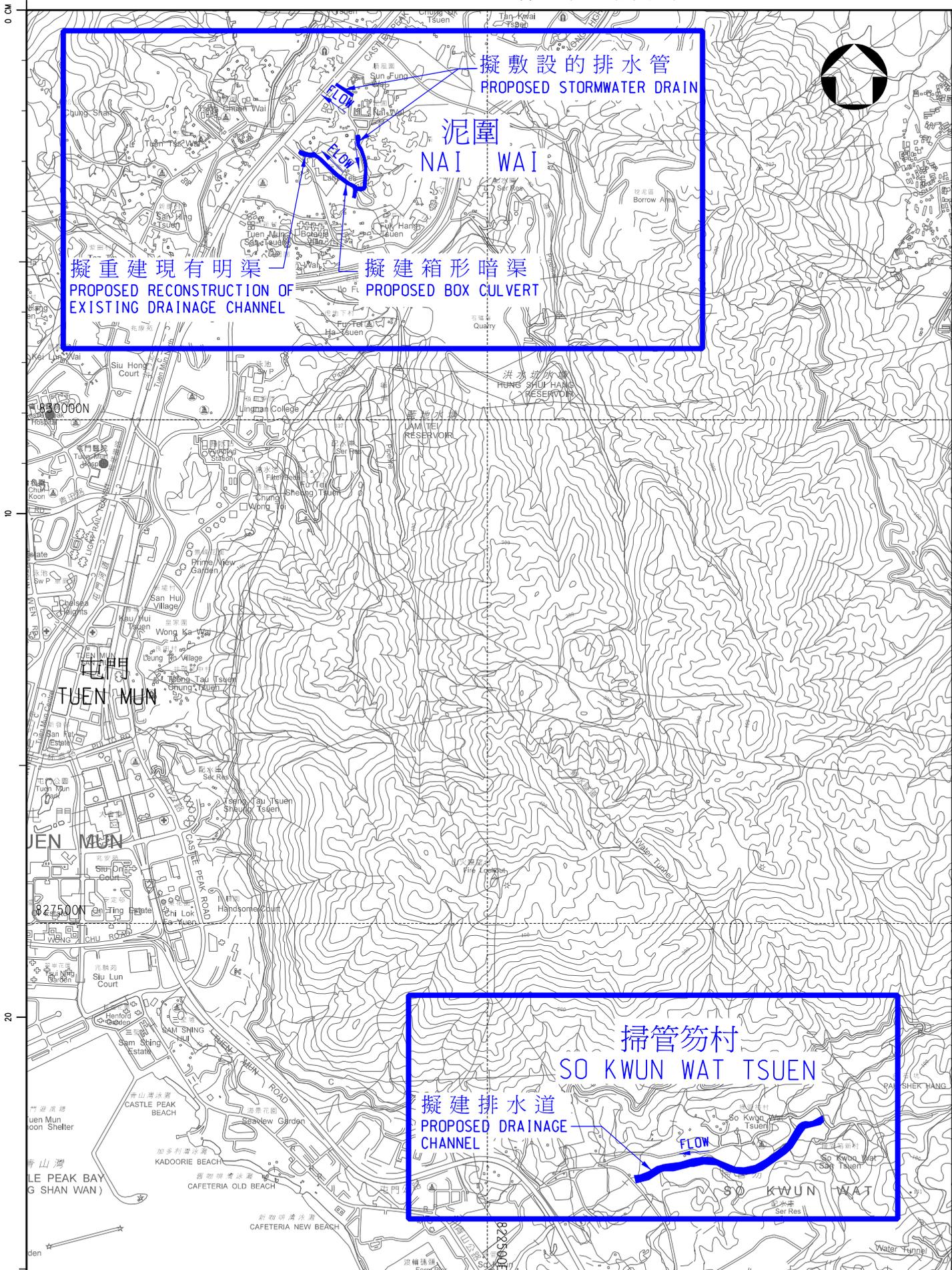
⁴ “Important trees” refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

- (a) trees over 100 years old or above;
- (b) trees of cultural, historical or memorable significance e.g. Fung Shui trees, trees as landmark of monastery or heritage monument, and trees in memory of important persons or event;
- (c) trees of precious or rare species;
- (d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0 m (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25 m.

WAY FORWARD

17. Members are invited to support our proposal for upgrading **102CD** to Category A for consideration by the Public Works Subcommittee and for funding approval by the Finance Committee in mid-2007.

Environment, Transport and Works Bureau
January 2007



擬敷設的排水管
PROPOSED STORMWATER DRAIN

泥圍
NAI WAI

擬重建現有明渠
PROPOSED RECONSTRUCTION OF EXISTING DRAINAGE CHANNEL

擬建箱形暗渠
PROPOSED BOX CULVERT

掃管笏村
SO KWUN WAT TSUEN

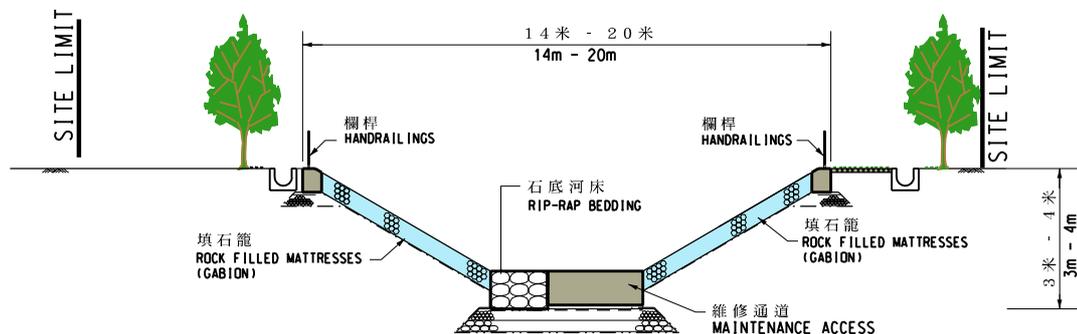
擬建排水道
PROPOSED DRAINAGE CHANNEL

圖則名稱 drawing title 工程編號第 4102CD 屯門及深井排水改善工程(組合乙) (頁一之二) PROJECT No. 4102CD DRAINAGE IMPROVEMENT IN TUEN MUN AND SHAM TSENG - PACKAGE B (SHEET 1 OF 2)	繪畫 drawn S. C. TAM 日期 date	圖則編號 drawing no. DDN/102CD/6938 比例 scale 1:25000
	核對 checked Y. C. NG 日期 date	保留版權 COPYRIGHT RESERVED
	批核 approved M. L. WONG 日期 date	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 排水工程部 DRAINAGE PROJECTS DIVISION	



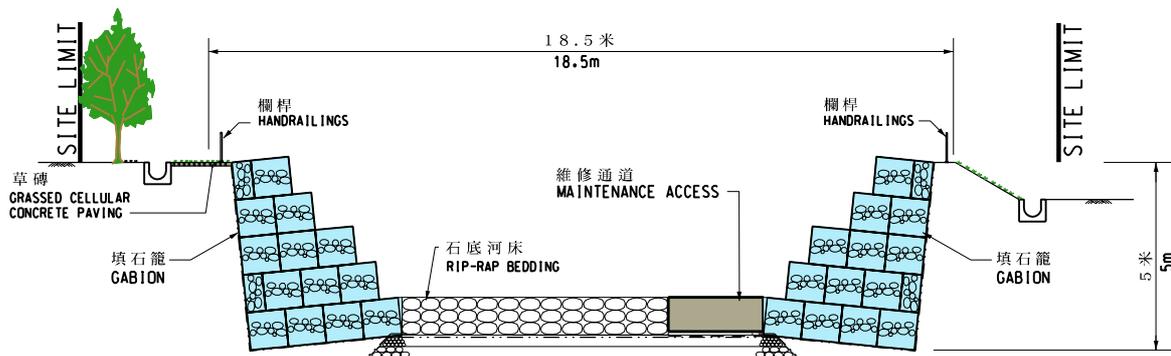
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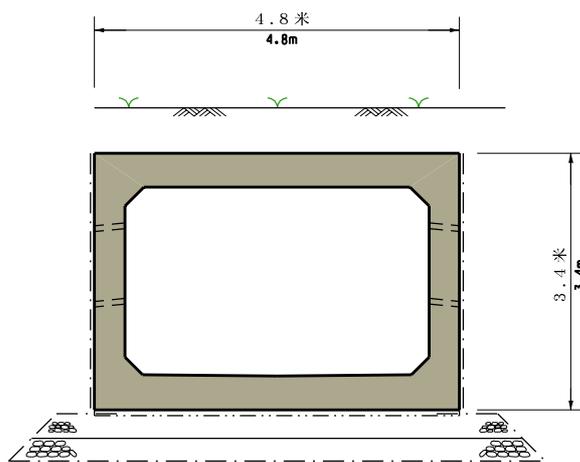
掃管笏梯形排水道典型橫切面

TYPICAL SECTION OF TRAPEZOIDAL CHANNEL IN SO KWUN WAT



掃管笏填石籠排水道典型橫切面

TYPICAL SECTION OF CHANNEL WITH GABION BLOCK IN SO KWUN WAT



泥圍箱形暗渠典型橫切面

TYPICAL SECTION OF BOX CULVERT IN NAI WAI

10

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圖則名稱 drawing title 工程編號第 4102CD 屯門及深井排水改善工程 (組合乙) (頁二之二) PROJECT No. 4102CD DRAINAGE IMPROVEMENT IN TUEN MUN AND SHAM TSENG - PACKAGE B (SHEET 2 OF 2)	繪畫 drawn	S. C. TAM	日期 date	圖則編號 drawing no.	比例 scale
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	批核 approved	M. L. WONG	日期 date	保留版權 COPYRIGHT RESERVED	
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