

For information

Legislative Council Panel on Planning, Lands and Works

119CD – Drainage improvement in Northern New Territories – package C

PURPOSE

This paper briefs Members on the Administration's proposal to upgrade part of **119CD** entitled "Drainage improvement in Northern New Territories – package C" to Category A, at an estimated cost of about \$123.7 million in money-of-the-day (MOD) prices, for improving the existing drainage systems in Lung Yeuk Tau, Kwan Tei South and Leng Tsai in Fanling.

PROJECT SCOPE

2. The scope of the proposed drainage works to be part-upgraded comprises -
 - (a) construction of about 3 kilometres (km) of drainage channels of width ranging from 1.5 to 35 metres (m) and about 0.2 km of box culverts with width ranging from 5 to 16 m, and provision of ancillary works in Lung Yeuk Tau and Kwan Tei South; and
 - (b) construction of about 0.3 km of drainage channels of width 2 m and provision of ancillary works in Leng Tsai.

We plan to commence construction in mid 2007 for completion in mid 2010. A location plan and typical cross-sections showing the proposed works are at **Enclosure 1**.

JUSTIFICATION

3. Owing to developments and extensive changes in land use in the Northern New Territories over the years, large tracts of natural ground have been paved over and become impermeable. Rainwater which would previously dissipate naturally through ground infiltration can no longer do so. This has led to significant increase in surface run-off and overloading of the existing drainage systems and

streamcourses. As such, many areas of the Northern New Territories are susceptible to flooding during heavy rainstorms.

4. Upon completion of the proposed works, the risk of flooding during heavy rainstorms in the areas concerned will be reduced. The drainage systems in Lung Yeuk Tau, Kwan Tei South and Leng Tsai will be generally improved to withstand rainstorms with a return period¹ of one in 10 years.

FINANCIAL IMPLICATIONS

5. We estimate the cost of the proposed works to be \$123.7 million in MOD prices, made up as follows-

		\$ million
(a)	Construction of drainage channels and ancillary works in	98.0
	(i) Lung Yeuk Tau and Kwan Tei South	82.0
	(ii) Leng Tsai	16.0
(b)	Environmental mitigation measures	4.7
(c)	Consultants' fees for	9.9
	(i) contract administration	0.7
	(ii) site supervision	9.2
(d)	Contingencies	11.1
	Total	123.7 (in MOD prices)

6. We estimate that annual recurrent expenditure arising from this proposed works to be about \$0.8 million.

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.

PUBLIC CONSULTATION

7. We consulted the North District Council and the Fanling Rural Committee on 23 May 2005 and 13 April 2005 respectively for the proposed works. Members supported the implementation of the proposed works.

8. We gazetted the proposed works under the Roads (Works, Use and Compensation) Ordinance on 2 December 2005 and received a total of four objections. Three objectors were concerned about land resumption, and one was concerned about the adverse environmental impacts during construction. Three objectors withdrew their objections upon clarification of project details and revision of the scheme to reduce resumption and clearance of lands and structures. We did not receive any response from the remaining objector despite our detailed explanation to him on the need for the resumption. This objection was considered unresolved. After considering the objections, the Chief Executive in Council authorised the proposed works with modifications on 5 December 2006.

ENVIRONMENTAL IMPLICATIONS

9. The proposed works is not a designated project under the Environmental Impact Assessment Ordinance. We completed an Environmental Study 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 within established standards and guidelines through implementation of mitigation measures, such as the use of temporary noise barriers, silenced construction equipment 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 will be properly implemented on site.

10. We have considered ways in the planning and design stages to reduce the generation of construction and demolition (C&D) materials where possible. For example, we have determined the alignments of the proposed drainage channels such that excavation and demolition of existing structures would be minimised, and adopted standardised sections of reinforced concrete structures to minimise the use of formwork. 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/recyclable material 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 minimise the disposal of C&D

materials to public fill reception facilities². We will encourage the contractor to maximise the use of recycled and recyclable C&D materials to further minimise the generation of construction waste.

11. 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.

12. We estimate that the project will generate about 289 400 tonnes of C&D materials. Of these, we will reuse about 87 700 tonnes (30%) on site and deliver 191 600 tonnes (66%) to public fill reception facilities for subsequent reuse. In addition, we will dispose of 10 100 tonnes (4%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be about \$6.4 million for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne at landfills³).

TRAFFIC IMPACT

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

BACKGROUND INFORMATION

14. To alleviate the flooding risks in the Northern New Territories and to meet the community's increasing expectation for better flood protection, we have planned and implemented a comprehensive drainage improvement programme in phases starting from the downstream end. Since 1995, we have

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.

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.

started training of major downstream rivers including the Shenzhen River and the Ng Tung River. As those works were completed, we reviewed the upstream and local drainage systems in the Northern New Territories under **55CD** “Drainage Master Plan Study in the Northern New Territories” (the Study).

15. Based on the findings of the Study, many areas in Lung Yeuk Tau and Kwan Tei South (including areas around Ma Liu Shui San Tsuen, Shung Him Tong, Kwan Tei River and Tan Shan River) and Leng Tsai are susceptible to flooding during heavy rainstorms mainly due to the inadequate drainage capacity of the existing local streamcourses. We have substantially completed the detailed design for the proposed drainage channels in Lung Yeuk Tau, Kwan Tei South and Leng Tsai and plan to start works as soon as possible so as to bring early improvement to these areas.

16. In November 2001, we first included **119CD** “Drainage improvement in Northern New Territories – package C” in Category B for implementing the drainage improvement works recommended under the Study. The proposed works included construction of about 7 km of drainage channels in Lung Yeuk Tau, Ta Kwu Ling, Man Uk Pin and Lin Ma Hang.

17. In June 2002, we part-upgraded **119CD** to Category A as **130CD** entitled “Drainage improvement in Northern New Territories – package C – consultants’ fees and investigations” for engaging consultants to undertake site investigations, impact assessments and design for the drainage improvement works for the whole project. The consultancy commenced in July 2003 for completion in November 2007.

18. Taking into account the phasing of land resumption and clearance for lands required in different locations, we will implement the drainage improvement works under **119CD** in two phases.

19. Phase 1 refers to the proposed works to be upgraded to Category A and comprises the construction of drainage channels in Lung Yeuk Tau, Kwan Tei South and Leng Tsai in Fanling. We have substantially completed the design and plan to start the construction of the proposed works in mid 2007 for completion in mid 2010.

20. Phase 2 comprises the construction of drainage channels in Ta Kwu Ling, Man Uk Pin and Lin Ma Hang. Planning and design works for phase 2 is in progress.

21. We estimate that the proposed works will create about 75 jobs (60 for labourers and 15 for professional/technical staff) providing a total employment of 2 000 man-months.

22. Of the 726 trees within the project boundary, 552 trees will be preserved. The proposed works will involve the removal of 174 common trees including 154 trees to be felled and 20 trees to be replanted within the project site. All trees to be removed are not important trees⁴. We will incorporate planting proposals as part of the project, including estimated quantities of 1 000 trees, 17 000 shrubs and 15 000 m² of grassed area.

WAY FORWARD

23. Members are invited to support our proposal for part-upgrading of **119CD** for consideration by the Public Works Subcommittee and for funding approval by the Finance Committee by mid 2007.

Environment, Transport and Works Bureau
February 2007

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 metre (measured at 1.3 metre above ground level), or with height/canopy spread equal or exceeding 25m.

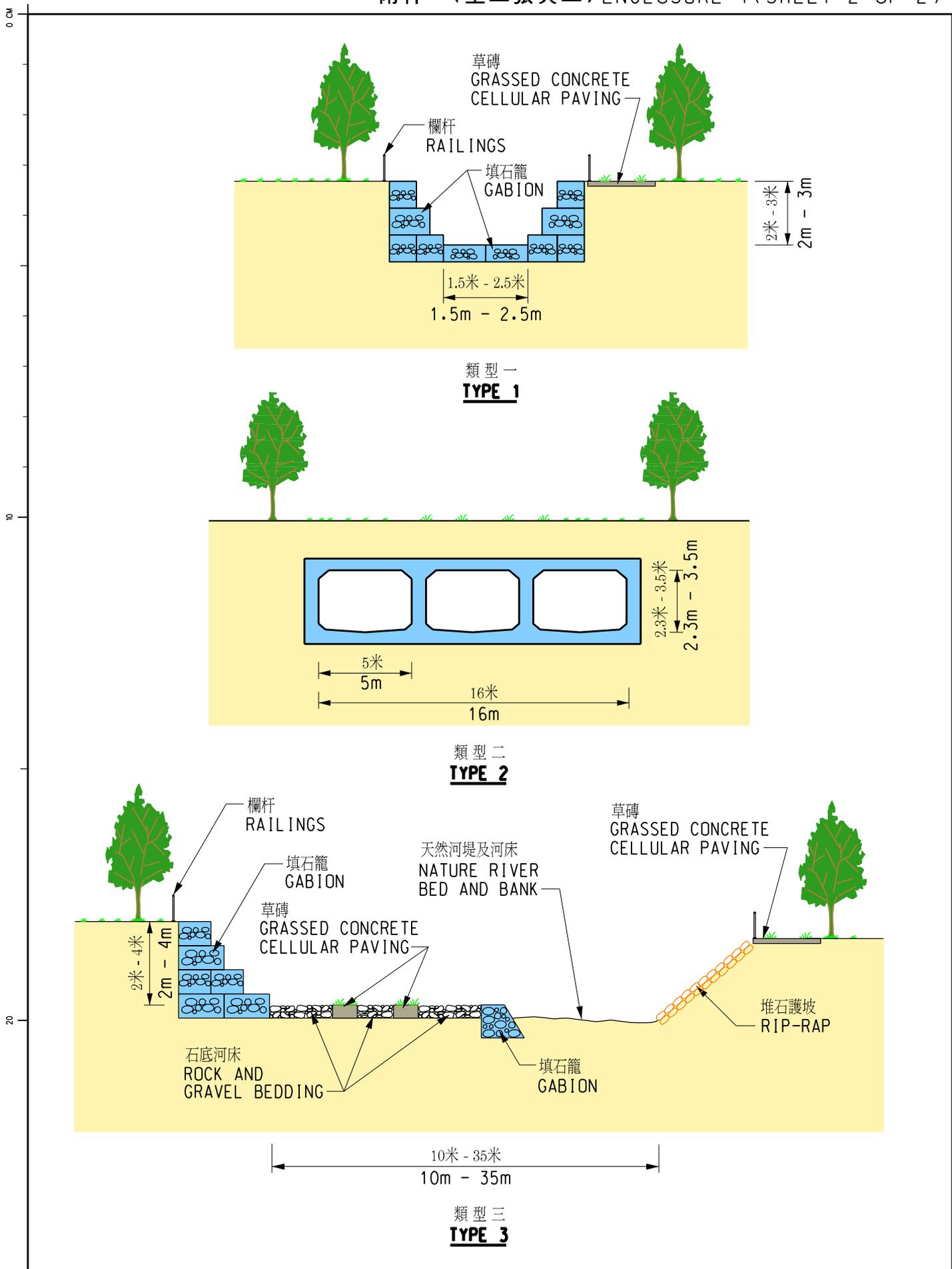


圖例 LEGEND	
	現有河道 EXISTING STREAMCOURSES
	擬議排水道或箱型暗渠 PROPOSED DRAINAGE CHANNELS OR BOX CULVERTS

圖則名稱 drawing title
工務工程計劃編號119CD
新界北部雨水排放系統改善計劃—C部分
PWP ITEM No. 119CD
DRAINAGE IMPROVEMENT IN
NORTHERN NEW TERRITORIES
- PACKAGE C

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核對 checked	S.S. POON	日期 date	1 DEC. 06
批核 approved	B.K. KWOK	日期 date	1 DEC. 06
部門 office	排水工程部 DRAINAGE PROJECTS DIVISION		

圖則編號 drawing no.	比例 scale
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 工務工程計劃編號119CD
 新界北部雨水排放系統改善計劃—C部分
 PWP ITEM No. 119CD
 DRAINAGE IMPROVEMENT IN NORTHERN NEW TERRITORIES - PACKAGE C
 排水道典型切面圖
 TYPICAL CROSS-SECTION OF DRAINAGE CHANNELS

繪畫 drawn C. K. WONG 日期 date 1 DEC. 06
 核對 checked S. S. POON 日期 date 1 DEC. 06
 批核 approved B. K. KWOK 日期 date 1 DEC. 06
 部門 office 排水工程部
 DRAINAGE PROJECTS DIVISION

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