

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 704 – DRAINAGE

Civil Engineering – Drainage and erosion protection

126CD – Drainage improvement in East Kowloon – Package B

Members are invited to recommend to Finance Committee –

- (a) the upgrading of part of **126CD**, entitled “Drainage improvement in East Kowloon – Package B phase 1”, to Category A at an estimated cost of \$242 million in money-of-the-day prices; and
- (b) the retention of the remainder of **126CD**, retitled “Drainage improvement in East Kowloon – Package B phase 2” in Category B.

### PROBLEM

East Kowloon is susceptible to flooding during severe rainstorms due to the inadequate capacity of the existing drainage systems in the area.

### PROPOSAL

2. The Director of Drainage Services, with the support of the Secretary for the Environment, Transport and Works, proposes to upgrade part of **126CD** to

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Category A at an estimated cost of \$242 million in money-of-the-day (MOD) prices for drainage improvement works in Hung Hom, Kowloon City and San Po Kong.

### PROJECT SCOPE AND NATURE

3. The scope of the proposed works in Hung Hom, Kowloon City and San Po Kong to be part-upgraded to Category A under **126CD** comprises –

- (a) construction of about 4.3 kilometres (km) of stormwater drains of diameter ranging from 300 millimetres (mm) to 1 800 mm;
- (b) construction of about 1.3 km of box culverts of internal sizes ranging from 2.3 metres (m) wide and 1.8 m high to 3 m wide and 2.9 m high; and
- (c) ancillary works.

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

4. We plan to start the proposed works in May 2006 for completion in January 2010.

### JUSTIFICATION

5. The drainage catchment area of East Kowloon covers the major residential, industrial and commercial districts in parts of Tsim Sha Tsui, Hung Hom, To Kwa Wan, Kowloon City, San Po Kong, Wong Tai Sin, Kwun Tong and Yau Tong. We developed the existing drainage systems decades ago to meet the flow requirements and standards at that time. Flooding records show that parts of the existing drainage systems are found inadequate to abate flooding, thereby causing nuisance to the public and disruption to traffic. A comprehensive assessment of the drainage systems in this catchment area concluded that the existing drainage systems require improvement to alleviate the flooding risks in the districts and to meet the community's increasing expectation for better flood protection.

6. To bring early relief to the flooding problems and minimise possible disruption to traffic, we will carry out the drainage improvement works in packages. We have already started Package A works in Tsim Sha Tsui, To Kwa Wan, Wong Tai Sin and Yau Tong since May 2005 for completion in October 2008. The proposed works in Hung Hom, Kowloon City and San Po Kong under Package B phase 1 are now ready for commencement as we have worked out the associated traffic arrangements. The planning and design of Package B phase 2 for the remaining drainage improvement works in Kwun Tong are still underway.

7. Upon completion of the proposed works in the first phase of Package B, the standard of flood protection in Hung Hom, Kowloon City and San Po Kong would be raised generally to withstand a rainstorm with a return period<sup>1</sup> of one in 50 years.

## FINANCIAL IMPLICATIONS

8. We estimate the project cost of the proposed works to be \$242 million (in MOD prices), made up as follows –

	<b>\$ million</b>
(a) Construction of stormwater drains and box culverts	195
(i) stormwater drains	105
(ii) box culverts	86
(iii) ancillary works	4
(b) Consultants' fees for	22
(i) contract administration	1
(ii) site supervision	21

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<sup>1</sup> "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.

		<b>\$ million</b>	
(c)	Environmental mitigation measures	3	
(d)	Contingencies	21	
	Sub-total	241	(in September 2005 prices)
(e)	Provision for price adjustment	1	
	Total	242	(in MOD prices)

\_\_\_\_\_ A breakdown of the estimates for the consultants' fees by man-months is at Enclosure 2.

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

<b>Year</b>	<b>\$ million (Sept 2005)</b>	<b>Price adjustment factor</b>	<b>\$ million (MOD)</b>
2006 – 2007	27.0	1.00125	27.0
2007 – 2008	39.0	1.00125	39.0
2008 – 2009	57.9	1.00125	58.0
2009 – 2010	70.9	1.00125	71.0
2010 – 2011	44.3	1.01627	45.0
2011 – 2012	1.9	1.03659	2.0
	<u>241.0</u>		<u>242.0</u>

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10. We have derived the MOD estimates on the basis of the Government's latest forecast of trend labour and prices of public sector building and construction output for the period 2006 to 2012. We will tender the works under a standard re-measurement contract because of the uncertainties of the underground utilities such as electricity cables, telephone cables and water pipes. The 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 about \$400,000.

## **PUBLIC CONSULTATION**

12. We consulted the Wong Tai Sin District Council and the Traffic and Transport Committee of Kowloon City District Council on the proposed works on 13 and 29 September 2005 respectively. They both supported the implementation of the proposed drainage improvement works.

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

## **ENVIRONMENTAL IMPLICATIONS**

14. The part of **126CD** which we now propose to upgrade to Category A is not a designated project under the Environmental Impact Assessment Ordinance. We completed an Environmental Review for the proposed works in February 2004 which concluded that there would be no insurmountable impacts on the air quality, water, waste management, visual impacts and ecology aspects.

15. For short-term impacts during construction, we will control noise, dust and site run-off within established standards and guidelines through the implementation of mitigation measures, such as the use of temporary noise barriers and silenced construction plants to reduce noise generation, water-spraying to reduce emission of fugitive dust and strict control on diversion of sewage flows in the works contracts. We will incorporate a relevant clause into

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the works contract to require the contractor to carry out the recommended environmental mitigation measures to control pollution and disposal of contaminated soil in accordance with the relevant regulations during construction. We have included \$3 million (in September 2005 prices) in the project estimates for implementing the environmental mitigation measures.

16. We have considered ways of minimising construction and demolition (C&D) materials in the planning and design stages. 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 facilities. We will encourage the contractors to maximise the use of recycled or recyclable C&D materials, as well as the use of non-timber in formwork to further minimise the generation of construction waste.

17. 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.

18. We estimate that the project will generate about 165 000 tonnes of C&D materials. Of these, we will reuse about 76 000 tonnes (46%) on site, deliver 87 000 tonnes (53%) to public fill reception facilities<sup>2</sup> for subsequent reuse. In addition, we will dispose of 2 000 tonnes (1%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be about \$2.6 million for this project (based on an unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne<sup>3</sup> at landfills.)

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<sup>2</sup> 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.

<sup>3</sup> 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/m<sup>3</sup>), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

## TRAFFIC IMPACTS

19. We have completed the traffic impact assessment for the proposed works. During construction, we will maintain smooth traffic flow through temporary traffic management measures as far as possible and display notice boards on site to explain the reason of temporary traffic arrangements and the expected completion date of the concerned section of works. In addition, telephone hotlines will be set up for public enquiries or complaints. Construction works in busy road sections will be carried out during non-peak hours. To expedite works progress and minimise disruption to traffic, we will also establish a Traffic Management Liaison Group (TMLG) under the contract to discuss, scrutinise and agree on the proposed temporary traffic management measures. Representatives from Transport Department, the Hong Kong Police Force, Highways Department, District Offices and various road public transport operators will be invited to attend the TMLG meetings and every temporary traffic arrangement has to be agreed by the TMLG before implementation. The TMLG will also take into account all relevant factors such as site restrictions, existing and future traffic conditions, pedestrian safety, access to buildings/shop fronts and provision of emergency vehicles access while considering the temporary traffic arrangements.

## LAND ACQUISITION

20. The project does not require any land acquisition.

## BACKGROUND INFORMATION

21. In September 2000, we completed a comprehensive review of the drainage systems in East Kowloon under **80CD** "Drainage master plan study in Sai Kung, East Kowloon and Southern Lantau" (the Study). The Study identified that some of the existing drainage systems in East Kowloon were inadequate to meet the required flood protection standard and recommended a programme of drainage improvement works to tackle the flooding problems in the areas.

22. In April 2002, we included **126CD** in Category B of the Public Works Programme for the drainage improvement works in East Kowloon. We planned to implement the works in two packages. Package A comprises the drainage improvement works in Tsim Sha Tsui, To Kwa Wan, Wong Tai Sin and Yau Tong. Package B comprises drainage improvement works in Hung Hom, Kowloon City, San Po Kong and Kwun Tong.

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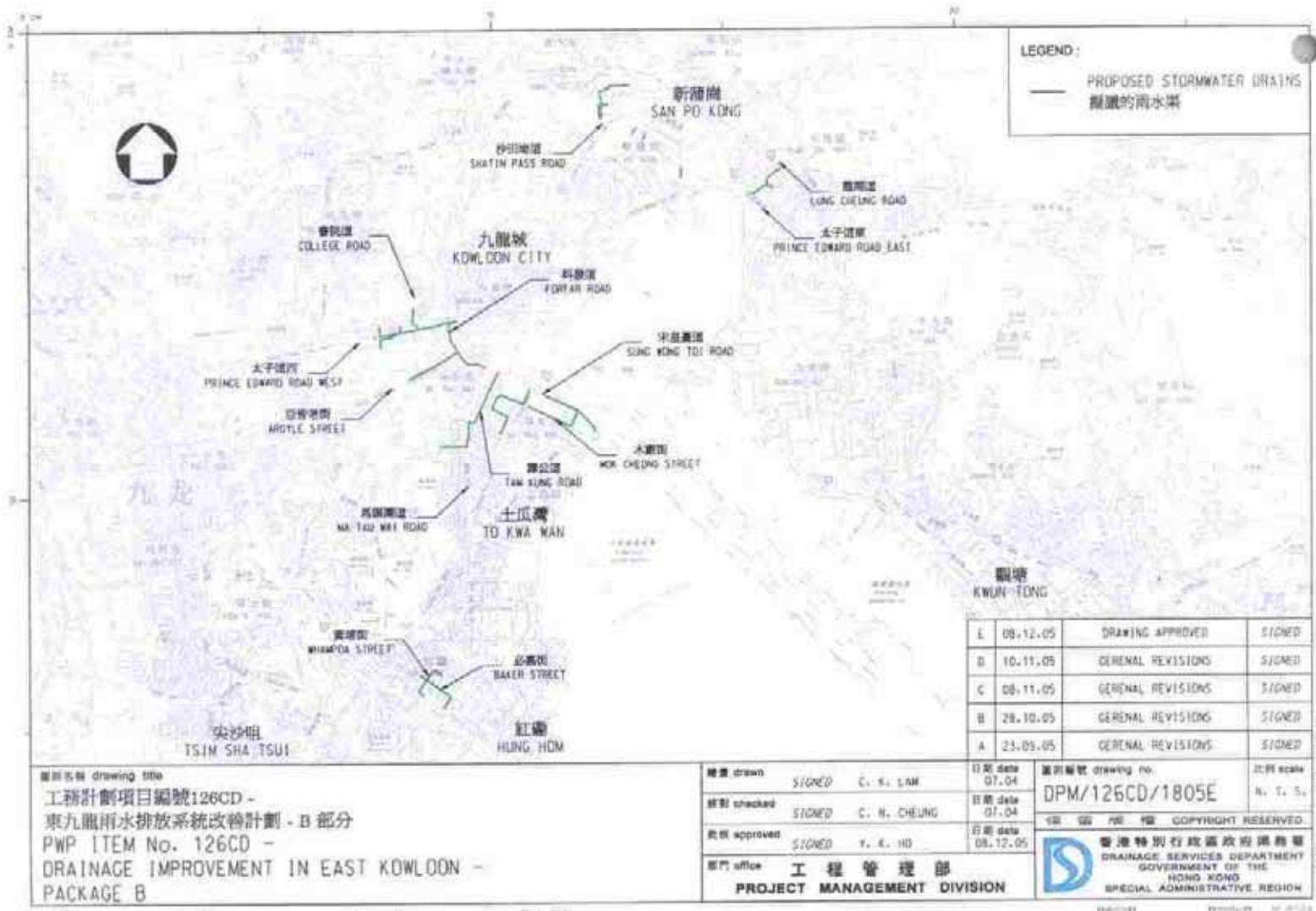
23. In April 2003, we engaged consultants to undertake site investigations, surveys, traffic impact assessment and detailed design for the project at a cost of \$13 million in MOD prices. We have charged this amount to block allocation **Subhead 4100DX** “Drainage works, studies and investigations for items in Category D of the Public Works Programme”. The consultancy commenced in June 2003.

24. In July 2004, we upgraded part of **126CD**, i.e. the Package A, to Category A as **134CD** entitled “Drainage improvement in East Kowloon – Package A” at an estimated cost of \$251.5 million for carrying out the drainage improvement works in Tsim Sha Tsui, To Kwa Wan, Wong Tai Sin and Yau Tong. The construction works commenced in May 2005 for completion in October 2008.

25. The proposed drainage works will not involve any removal of trees or planting proposals.

26. We estimate that the proposed works will create about 110 jobs (88 for labourers and another 22 for professional/technical staff) providing a total employment of 3 900 man-months.

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**LEGEND:**  
 — PROPOSED STORMWATER DRAINS  
 擬議的雨水渠

E	08.12.05	DRAWING APPROVED	SIGNED
D	10.11.05	GENERAL REVISIONS	SIGNED
C	08.11.05	GENERAL REVISIONS	SIGNED
B	28.10.05	GENERAL REVISIONS	SIGNED
A	23.05.05	GENERAL REVISIONS	SIGNED

圖則名稱 drawing title  
 工務計劃項目編號126CD -  
 東九龍雨水排放系統改善計劃 - B 部分  
 PWP ITEM No. 126CD -  
 DRAINAGE IMPROVEMENT IN EAST KOWLOON -  
 PACKAGE B

繪圖 drawn	SIGNED	C. S. LAM	日期 date	07.04
核對 checked	SIGNED	C. H. CHEUNG	日期 date	07.04
批准 approved	SIGNED	T. K. HO	日期 date	08.12.05
部門 office	工程管理部 PROJECT MANAGEMENT DIVISION			

圖則編號 drawing no.  
**DPM/126CD/1805E** 比例 scale  
 1:1,500

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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

ENCLOSURE 1 附件一

**Enclosure 2 to PWSC(2005-06)37**

**126CD – Drainage improvement in East Kowloon – Package B**

**Breakdown of the estimates for consultant’s fees**

<b>Consultants’ staff costs</b>		<b>Estimated man- months</b>	<b>Average MPS* salary point</b>	<b>Multiplier (Note 1)</b>	<b>Estimated fee (\$ million)</b>
(a) Contract administration (Note 2)	Professional	-	-	-	0.8
	Technical	-	-	-	0.2
(b) Site supervision by resident site staff of the consultants (Note 3)	Professional	62	38	1.6	5.4
	Technical	540	14	1.6	15.6
Total consultants’ staff costs					<hr/> 22.0 <hr/>

\*MPS = Master Pay Scale

**Notes**

1. A multiplier of 1.6 is applied to the average MPS point to estimate the cost of resident site staff supplied by the consultants. (As at 1 January 2005, MPS pt. 38 = \$54,255 per month and MPS pt. 14 = \$18,010 per month).
2. The consultants’ fees for contract administration are based on the lump sum fees calculated in accordance with the consultancy agreement which the Director of Drainage Services has agreed with the consultants undertaking the design and construction of the project. The construction phase of the assignment for the proposed works will only be executed upon Finance Committee’s approval to upgrade the proposed works to Category A.
3. We will only know the actual man months and actual costs after the completion of the construction works.