

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 phase 2

Members are invited to recommend to Finance Committee the upgrading of the remainder of **126CD** to Category A at an estimated cost of \$190.9 million in money-of-the-day prices for drainage improvement works in Shun Lee, Kwun Tong and Yau Tong in East Kowloon.

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 **126CD** to Category A at an estimated cost of \$190.9 million in money-of-the-day (MOD) prices for carrying out drainage improvement works in Shun Lee, Kwun Tong and Yau Tong.

/PROJECT

PROJECT SCOPE AND NATURE

3. The scope of **126CD** comprises –
 - (a) construction of about 3.7 kilometres (km) of stormwater drains of diameter ranging from 600 millimetres (mm) to 2 100 mm; and
 - (b) 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 April 2007 for completion in April 2011.

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 constructed 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 inadequate to abate flooding caused by heavy rainstorm, 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 improvement to the flooding problems and minimise possible disruption to traffic, we have already commenced Package A under **134CD** and Package B phase 1 under **142CD** in May 2005 and May 2006 respectively covering Tsim Sha Tsui, To Kwa Wan, Hung Hom, Kowloon City, San Po Kong, Wong Tai Sin and Yau Tong (Ko Chiu Path only). The proposed works under Package B phase 2 is the last package of the drainage improvement works in East Kowloon, covering Shun Lee, Kwun Tong and Yau Tong.

7. Upon completion of the proposed works, the standard of flood protection in Shun Lee, Kwun Tong and Yau Tong would be raised to withstand rainstorms with return period¹ of one in 50 years.

/FINANCIAL

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.

FINANCIAL IMPLICATIONS

8. We estimate the project cost of the proposed works to be about \$190.9 million (in MOD prices), made up as follows -

	\$ million
(a) Construction of stormwater drains at -	146.2
(i) Shun Lee	4.4
(ii) Kwun Tong	99.4
(iii) Yau Tong	42.4
(b) Consultants' fees for	15.9
(i) contract administration	1.0
(ii) site supervision	14.9
(c) Environmental mitigation measures	2.5
(d) Contingencies	<u>16.5</u>
Sub-total	181.1 (in September 2006 prices)
(e) Provision for price adjustment	9.8
Total	<u>190.9 (in MOD prices)</u>

_____ 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 -

/2007 - 2008

Year	\$ million (Sept 2006)	Price Adjustment Factor	\$ million (MOD)
2007 – 2008	19.8	1.01250	20.0
2008 – 2009	29.2	1.02769	30.0
2009 – 2010	42.2	1.04310	44.0
2010 – 2011	37.8	1.05875	40.0
2011 – 2012	35.1	1.08257	38.0
2012 – 2013	17.0	1.10964	18.9
	181.1		190.9

10. We have derived the MOD estimates on the basis of the Government's latest forecast of trend rate of change in the prices of public sector building and construction output for the period 2007 to 2013. 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 the proposed project to be about \$130,000.

PUBLIC CONSULTATION

12. We consulted the Traffic and Transport Committee of Kwun Tong District Council for the proposed works on 7 September 2006. Committee members 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 20 November 2006. On the advice of the Panel Chairman, we provided supplementary information on the details of the estimated annual recurrent expenditure arising from the project and the reasons for not using underground tunnelling method in the proposed works by circulation of a Supplementary Note on 13 December 2006. Panel Members did not raise any objection to the proposed works.

/ENVIRONMENTAL

ENVIRONMENTAL IMPLICATIONS

14. The proposed drainage improvement works is not a designated project under the Environmental Impact Assessment Ordinance. We completed the Environmental Review (ER) 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 the works contract requiring the contractor to carry out the recommended environmental mitigation measures as recommended in the ER to control pollution and disposal of contaminated soil in accordance with the relevant regulations during construction. We have included \$2.5 million (in September 2006 prices) in the project estimates for implementing the environmental mitigation measures.

16. 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 adopted alignments of the proposed drainage works in such a manner that excavation and demolition of existing structures would be minimised, and adopted standardised sections of reinforced concrete structures to minimise the use of formwork. In addition, we will require the contractor to reuse inert C&D materials including excavated soil for backfilling 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 contractors 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.

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

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.

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 137 800 tonnes of C&D materials. Of these, we will reuse about 57 000 tonnes (41%) on site, deliver about 79 400 tonnes (58%) to public fill reception facilities for subsequent reuse and dispose of about 1 400 tonnes (1%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be \$2.3 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

19. We have recently worked out the traffic arrangements for the proposed drainage improvement works. To minimise possible disruption to traffic during construction, we have completed the traffic impact assessment (TIA) for the proposed works. The TIA has concluded that the proposed works would not cause unacceptable traffic impact. During construction, we will maintain smooth traffic flow through implementing temporary traffic management measures as far as possible and will 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 in non-peak hours and/or by night works.

20. We will establish a Traffic Management Liaison Group (TMLG) under the contract to discuss, scrutinise and agree on the proposed temporary traffic management measures. Representatives from the Transport Department, Hong Kong Police Force, Highways Department, District Offices and various 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 the 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

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.

LAND ACQUISITION

21. The project does not require any land acquisition.

BACKGROUND INFORMATION

22. 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 identified that some of the existing drainage systems in East Kowloon are inadequate to meet the required flood protection standard and recommended a programme of drainage improvement works to tackle the flooding problem in the areas.

23. We included **126CD** in Category B of the public works programme in April 2002. We planned to implement the works in three packages. Package A comprises the drainage improvement works in Tsim Sha Tsui, To Kwa Wan, Wong Tai Sin and Yau Tong (Ko Chiu Path only). Package B phase 1 comprises drainage improvement works in Hung Hom, Kowloon City and San Po Kong. Package B phase 2 comprises drainage improvement works in Shun Lee, Kwun Tong and Yau Tong.

24. In April 2003, we engaged consultants to undertake site investigations, surveys, TIA study and detailed design for the project at a cost of \$13 million. The consultancy commenced in June 2003. 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”.

25. 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 (in MOD prices) for carrying out the drainage improvement works in Tsim Sha Tsui, To Kwa Wan, Wong Tai Sin and Yau Tong (Ko Chiu Path only). The construction works commenced in May 2005 for completion in October 2008.

26. In January 2006, we upgraded the second part of **126CD** to Category A as **142CD** entitled “Drainage improvement in East Kowloon – Package B phase 1” at an estimated cost of \$242 million (in MOD prices) for carrying out the drainage improvement works in Hung Hom, Kowloon City and San Po Kong. The construction works commenced in May 2006 for completion in January 2010.

/27.

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

28. We estimate that the proposed works will create about 80 jobs (65 for labourers and another 15 for professional/technical staff) providing a total employment of 2 950 man-months.

Environment, Transport and Works Bureau
December 2006

126CD – Drainage improvement in East Kowloon – package B phase 2

Breakdown of estimate for consultant's fees

Consultants' staff costs		Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimate fee (\$ million)
(a) Contract Administration (Note 2)	Professional	-	-	-	0.8
	Technical	-	-	-	0.2
(b) Site supervision by resident site staff of the consultants (Note 3)	Professional	48	38	1.6	4.2
	Technical	371	14	1.6	10.7
Total consultants' staff costs					15.9

*MPS = Master Pay Scale

Notes

1. A multiplier of 1.6 is applied to the average MPS salary point to estimate the cost of resident site staff supplied by consultants. (As at 1 January 2006, MPS point 38 = \$54,255 per month and MPS point 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 will only be executed subject to 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.