

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 704 - DRAINAGE

Environmental Protection - Sewerage and sewage treatment

199DS - North and South Kowloon sewerage, stage I, phase II

Members are invited to recommend to Finance Committee an increase in the approved project estimate of **199DS** from \$496 million by \$148 million to \$644 million in money-of-the-day prices.

PROBLEM

The approved project estimate of **199DS** is insufficient to cover the costs of the works under the project.

PROPOSAL

2. The Director of Drainage Services, with the support of the Secretary for the Environment and Food, proposes to increase the approved project estimate of **199DS** from \$496 million by \$148 million to \$644 million in money-of-the-day (MOD) prices.

PROJECT SCOPE AND NATURE

3. The scope of works for the **199DS** project, which is located in the densely populated North and South Kowloon areas (Tsim Sha Tsui, Hung Hom, To Kwa Wan and Wong Tai Sin), comprises -

/(a)

- (a) construction of about 5.8 kilometres of sewers with diameters 300 mm to 1 800 mm in Tsim Sha Tsui, Hung Hom Bay reclamation, Hung Hom, To Kwa Wan and Wong Tai Sin;
- (b) construction of Hung Hom Bay sewage pumping station and Wan Hoi Street sewage pumping station;
- (c) construction of about 2.3 kilometres of pumping mains measuring 1 200 mm in diameter from Hung Hom Bay sewage pumping station to To Kwa Wan sewage screening plant;
- (d) upgrading of existing Kai Tak No.1 and No.2 dry weather flow pumping stations and Whampoa Gardens sewage pumping station;
- (e) construction of eight dry weather flow interceptors in Tsim Sha Tsui, To Kwa Wan and Ma Tau Kok; and
- (f) decommissioning of Kowloon South sewage screening plant, Kowloon East sewage screening plant and Winslow Street sewage pumping station.

4. The works under items 3(b) to 3(e) above have been totally completed. For item 3(a), the works have been substantially completed. The only minor outstanding works include some isolated local connections to new sewers, abandonment of some obsolete sewers and minor rehabilitation works of some existing sewers which represent a small part of the works under item 3(a), and decommissioning of the obsolete plants under item 3(f). The cost of such minor outstanding works, estimated to be \$10 million, can be covered within the original approved project estimate of **199DS**.

JUSTIFICATION

5. The proposal to increase the approved project estimate of **199DS** by \$148 million is required to cover the following-

/(a)

- (a) costs arising from additional works and the longer time taken. These had not been allowed for during the tendering of works; and
- (b) remeasurement payments under general site clearance items as required under an arbitration ruling and the interest payments accrued over the quantum in dispute.

Prolongation and Additional Works

6. The North and South Kowloon sewerage, stage I, phase II project involves replacing a number of existing sewers or laying new sewers in areas where there are extensive underground utilities, other buried obstructions and heavy pedestrian and vehicular traffic.

7. To minimise the need for extensive utility diversions, detailed reviews of utility record drawings obtained from the utility undertakers were carried out during the design stage. However, it was not possible to carry out comprehensive pre-contract underground investigation on site to verify the accuracy of all utility drawings without causing disproportionate inconvenience and disruption to the public. When the contractors excavated the roads for the sewerage works, the locations of most of the buried utilities were found to deviate substantially from those shown on record drawings. Many were found causing direct obstruction to the planned new sewers. The main areas where sewerage works have been obstructed by underground utilities during construction include Canton Road, Granville Road, Salisbury Road, Hung Hom Road, Hok Yuen Street East, Sung Ping Street and Shatin Pass Road. These locations are marked in the drawing at Enclosure 1 and one of the affected works sites is illustrated in the photograph at Enclosure 2.

8. Diverting these obstructing utilities involved very complex procedures. To arrange a complete diversion of utilities at each location usually involved a series of temporary traffic schemes and additional excavation. Although utility companies are responsible for diverting their own utility installations, our contractors were still required to arrange these additional temporary traffic schemes and excavation to facilitate utility diversions. As carrying out these additional works by our contractors was time-consuming, the project was not substantially completed until March 1999, instead of June 1997 as originally envisaged. Since these works could not have been allowed for when we tendered out the works, the costs arising from prolongation and additional works, which amounted to some \$68 million, have to be borne by the Government. The site staff costs have also been increased by \$28 million to cover the supervision works required for the extended

contract period.

/Remeasurement

Remeasurement under General Site Clearance

9. It is common for construction contracts to incorporate a clause to allow for a remeasurement for payment under general site clearance items. Under one of the contracts for the construction of sewers and pumping stations, there was a dispute between the Government and the contractor on the extent of the areas which should be re-measured for payment under general site clearance items. We considered that only those parts of the Site where clearance was required should be re-measured whereas the contractor contended that the contract allowed the whole of the Site to be re-measured. In accordance with the terms of the contract, the dispute was referred to arbitration. On 28 February 2000, the Arbitrator ruled in favour of the contractor. As a result, we need to comply with the arbitration award and pay the contractor. The amount payable comprises the arbitration award which covers payments for the re-measurement of the previously unmeasured parts of the Site and interest payments accrued over the quantum in dispute. As the contract documents under dispute were prepared by our consultants, we are carefully examining the grounds for the arbitration award to see if we could seek indemnity from our consultants.

10. Following a review of the financial position of the project, we consider it necessary to increase the approved project estimate of **199DS** from \$496 million by \$148 million to \$644 million in MOD prices (see paragraph 11 below) in order to cover the costs of the works.

11. A summary of the proposed increase of \$148 million is as follows –

	\$ million	%
(a) Contractors' prolongation costs	68	46.0
(i) site and office overhead	40.3	
(ii) cost due to plant idling	27.7	
(b) Arbitration	89	60.1
(i) award	57.9	
(ii) interest	31.1	

(c)

		\$ million	%
(c) Site staff supervision costs		28	18.9
(i) extended contract periods	22.0		
(ii) salary revision	6.0		
(d) Project contingencies		(22)	(14.9)
(e) Increase in approved project estimate for part payment of arbitration award (paragraph 23 refers)		(15)	(10.1)
	Total	148	100.0
		in MOD prices	

A comparison of the cost breakdown of the approved project estimate and the revised project estimate is at Enclosure 3.

FINANCIAL IMPLICATIONS

12. Subject to approval, we will phase the expenditure as follows -

Year	\$ million (MOD) ¹
Up to 31 March 2000	450 ²
2000 – 2001	139

¹ As the works have largely been completed, the phased expenditure is expressed in MOD prices.

² This is the actual expenditure up to 31 March 2000.

/2001 – 2002

Year	\$ million (MOD)
2001 – 2002	55

	644

13. The proposed increase in the approved project estimate will not give rise to additional recurrent expenditure.

PUBLIC CONSULTATION

14. As there is no change in the approved project scope, we consider that it is not necessary to carry out any further public consultation.

15. We issued an information paper to the LegCo Panel on Environmental Affairs and the Panel on Planning, Lands and Works on 3 April 2000 to brief Members about our intention to seek the Finance Committee's approval for increasing the approved project estimate of the project.

ENVIRONMENTAL IMPLICATIONS

16. We have substantially completed the works. The proposed increase in the approved project estimate does not have any environmental implications.

LAND ACQUISITION

17. The proposed increase in the approved project estimate does not require any land acquisition.

/ **BACKGROUND**

BACKGROUND INFORMATION

18. We included **171DS** “North and South Kowloon sewerage” in Category C in July 1993.

19. Finance Committee approved the upgrading of part of **171DS** as **173DS** “North and South Kowloon sewerage stage I - consultants' fees and investigations” to Category A at an estimated cost of \$12.5 million in January 1994 for engagement of consultants to undertake design and investigations for the stage I works.

20. Finance Committee approved the upgrading of part of **171DS** as **192DS** “North and South Kowloon sewerage, stage I, phase I” to Category A at an estimated cost of \$143.0 million in March 1995 for the construction of phase I extension of To Kwa Wan sewage screening plant and the internal inspection and cleansing of sewers in Tsim Sha Tsui, Hung Hom and To Kwa Wan.

21. Finance Committee further approved the upgrading of part of **171DS** as **199DS** “North and South Kowloon sewerage, stage I, phase II” at an estimated cost of \$481 million in July 1995 for the construction of pumping stations and trunk sewers in Tsim Sha Tsui, Hung Hom and To Kwa Wan. The remainder of **171DS** was retained in Category B and re-titled “North and South Kowloon sewerage, stage II”.

22. In accordance with the arbitration award on 28 February 2000 regarding the dispute on the remeasurement of payments under general site clearance items, we need to make payment to the contractor amounting to \$57.9 million together with an estimated interest liability of \$31.1 million accrued over the quantum in dispute.

23. We are required to effect payment to the contractor as soon as the arbitration award was available and further interest will be accrued for any delay in making the payment. A review of the financial situation showed that with the original approved project estimate of \$481 million, there were only sufficient funds to make part payment amounting to \$30 million, which comprised unused project contingencies and funds earmarked for minor outstanding works. To further reduce the amount of interest payment, the Secretary for the Treasury exercised her delegated authority on 31 March 2000 and approved an increase of the approved project estimate from \$481 million by \$15 million to \$496 million. We have hence made part

payment of \$45 million to the contractor to reduce Government's liability in interest payment.

/24.

24. We originally planned to start the works of **199DS** in October 1995 for completion in June 1997. As longer time was required to prepare for the commencement of the stage I works, the start date of the project was deferred from October 1995 to December 1995.

25. Under the original programme for the project, construction works would be completed in June 1997. We substantially completed the construction works in March 1999. The delay of 21 months was mainly due to the following reasons -

	Months delayed
(a) Inclement weather	2.5
(b) Unforeseen utility obstructions	17.0
(c) Additional road opening restrictions in Tsim Sha Tsui during Christmas and Lunar New Year holidays	<u>1.5</u>
Total	21.0

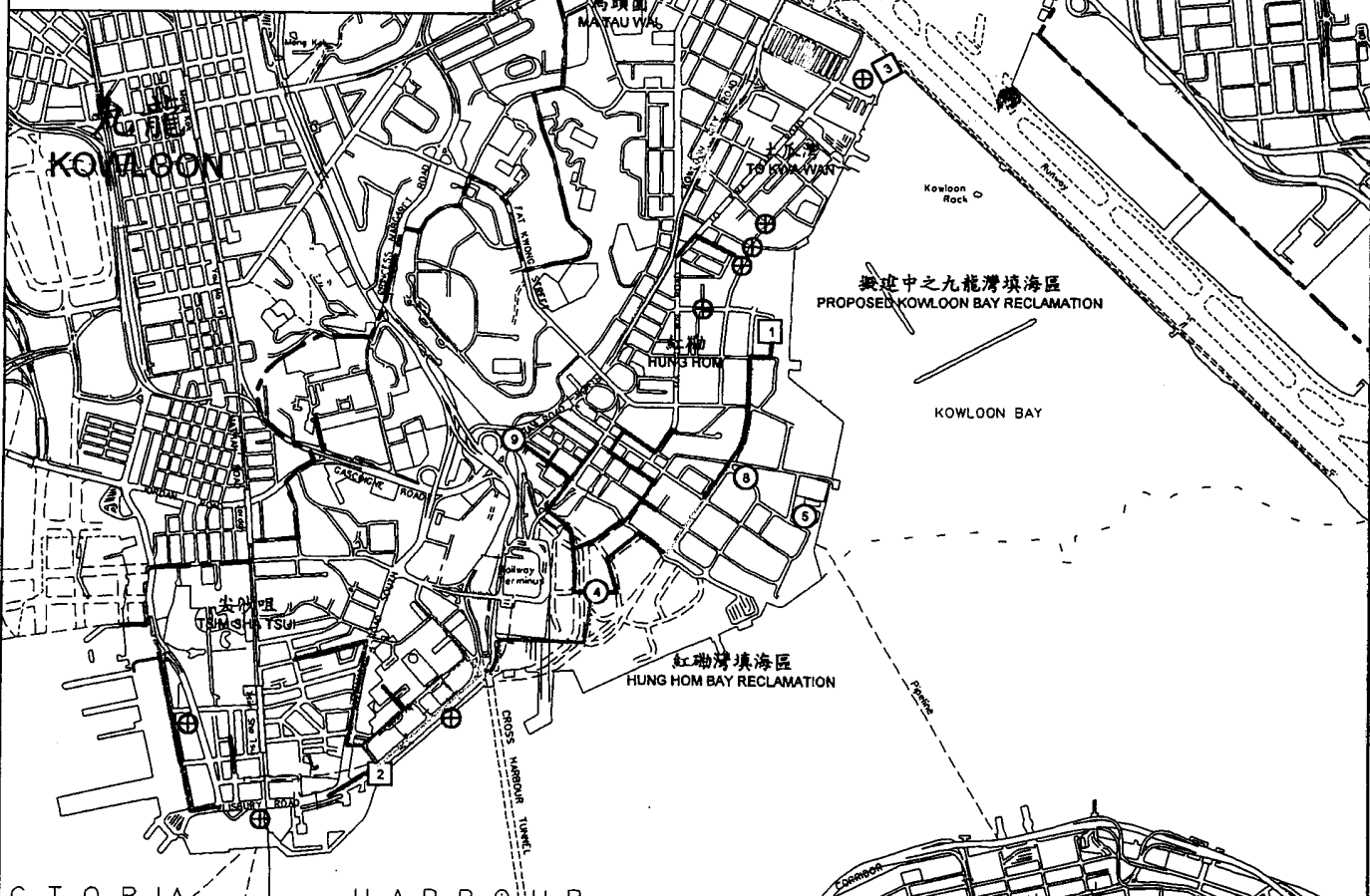
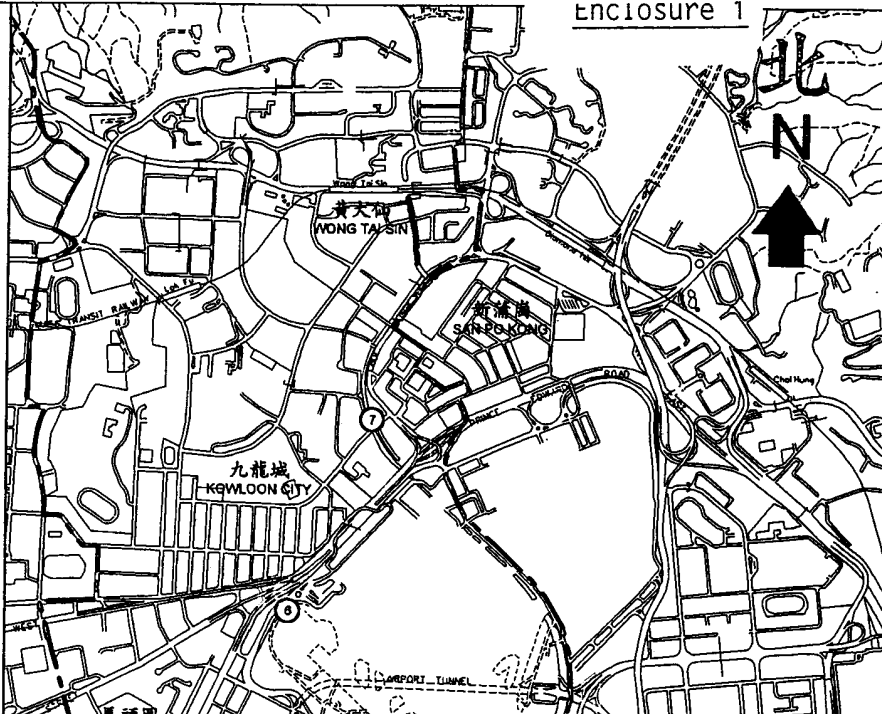
26. We have substantially completed the works. The proposed increase in the approved project estimate does not create job opportunities.


Environment and Food Bureau
 April 2000

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LEGEND: 圖例

- 工程範圍
PROJECT BOUNDARY
- 污水管工程
SEWER WORKS
- 受公共設施阻礙之污水管工程
SEWER WORKS - OBSTRUCTED BY UNDERGROUND UTILITIES
- 污水管工程(交由路政署承建, 工務計劃402CL)
SEWER WORKS - (ENTRUSTED TO HIGHWAYS DEPT. UNDER PWP ITEM 402CL)
- 受公共設施阻礙之污水管工程
SEWER WORKS - (ENTRUSTED TO HIGHWAYS DEPT. UNDER PWP ITEM 402CL) - OBSTRUCTED BY UNDERGROUND UTILITIES
- 1 土庫灣隔篩廠
TO KWA WAN SEWAGE SCREENING PLANT
- 2 南九龍隔篩廠
KOLOON SOUTH SEWAGE SCREENING PLANT
- 3 東九龍隔篩廠
KOWLOON EAST SEWAGE SCREENING PLANT
- 4 紅磡灣泵房
HUNG HOM BAY SEWAGE PUMPING STATION
- 5 環海街泵房
WAN HOI STREET SEWAGE PUMPING STATION
- 6 啟德時天流量一號泵房
KAI TAK No. 1 DWF PUMPING STATION
- 7 啟德時天流量二號泵房
KAI TAK No. 2 DWF PUMPING STATION
- 8 黃埔花園泵房
WAMPONG GARDEN SEWAGE PUMPING STATION
- 9 溫思勞街泵房
WINSLOW STREET SEWAGE PUMPING STATION
- ⊕ 晴天溢流截流站
DRY WEATHER FLOW INTERCEPTORS



PWP No. 199DS/A					
drawing title 九龍北部及南部污水系統 改善工程第一階段第二期 NORTH AND SOUTH KOWLOON SEWERAGE STAGE I PHASE II	drawn by	<i>Full Chan</i> C.W. CHAN	date	06 - 01 - 2000	drawing no.
	approved	<i>[Signature]</i> C.K. HON	date	06 - 01 - 2000	DSS/2000/001
	office	SSDS DIVISION			
					N. T. S.
					 DRAINAGE SERVICES DEPARTMENT HONG KONG

Photograph showing utilities encountered in sewer works

顯示污水渠工程中遇到公共設施的相片

525φ sewer and manhole located next to road kerb
位於馬路邊直徑 525 毫米污水渠與污水井

12 ways CLP cables with 400φ and 250φ gas mains buried underneath
12 路中華電力公司電纜、及 400 毫米與 250 毫米氣體燃料總管埋藏於此處下面。

2 Nos. E&M drawpits removed
兩個電纜拉線井已被拆走。

Twin sewage rising mains (1200φ each) to be laid at a depth of 7 m below ground
鋪設於地面下七米深的兩條污水泵喉(直徑各 1200 毫米)

Proposed concrete thrust block (3m x 3.5m x 4.3m) to be built underneath to embed the rising mains
擬建之混凝土渠躉(3 米 x 3.5 米 x 4.3 米)，將污水泵喉穩固於地底下。



2 No. cables
兩條電纜

4 No. CLP cables temporarily jointed after removal of drawpit
拆走拉線井後，臨時將四條中華電力公司電纜接駁。

3 No. E&M cables
三條 E&M 電纜

Water main 水管

1 No. CLP cable temporarily jointed after removal of drawpit
拆走拉線井後，臨時將一條中華電力公司電纜接駁。

Telephone cables in ducts
電話線管道

Hung Hom Road at junction with Tai Wan Road

紅磡路與大環道交界處

199DS - North and South Kowloon sewerage, stage I, phase II

A comparison of the approved project estimate and the revised project estimate is as follows -

	Approved Estimate (MOD) \$ million	Revised Estimate (MOD) \$ million	Difference \$ million
(a) Civil engineering works			
(i) sewers in Tsim Sha Tsui, Hung Hom Bay reclamation, Hung Hom, To Kwa Wan and Wong Tai Sin	211	332	121
(ii) sewage pumping stations			
- Hung Hom Bay sewage pumping station	85	85	0
- Wan Hoi Street sewage pumping station	1	1	0
(iii) pumping mains from Hung Hom Bay sewage pumping station to To Kwa Wan sewage screening plant	43	64	21
(iv) upgrading of Kai Tak No.1 and No. 2 dry weather flow pumping stations and Whampoa Garden sewage pumping station	2	2	0
(v) eight dry weather flow interceptors	6	6	0
(vi) decommissioning of Kowloon South sewage screening plant, Kowloon East sewage screening plant and Winslow Street sewage pumping station.	6	6	0
(b) Electrical and mechanical works			
(i) sewage pumping stations			
- Hung Hom Bay sewage pumping station	31	31	0
- Wan Hoi Street sewage pumping station	4	4	0

	Approved Estimate (MOD) \$ million	Revised Estimate (MOD) \$ million	Difference \$ million
(ii) upgrading of Kai Tak No.1 and No. 2 dry weather flow pumping stations and Whampoa Garden sewage pumping station	9	9	0
(iii) eight dry weather flow interceptors	9	9	0
(c) Consultants' fees for construction stage	6	6	0
(d) Resident site staff cost	41	69	28
(e) Contingencies	42	20	(22)
Total	496	644	148

2. As regards **(a)(i) (civil engineering works: sewers in Tsim Sha Tsui, Hung Hom Bay reclamation, Hung Hom, To Kwa Wan and Wong Tai Sin)**, of the total increase of \$121 million -

- (i) \$54 million is for part of the contractors' prolongation cost due to extended contract period; and
- (ii) \$67 million is the funds required to cover part of the arbitration award and interest accrued after deducting the funds already approved by the Secretary for the Treasury under delegated authority.

3. As regards **(a)(iii) (civil engineering works: pumping mains from Hung Hom Bay sewage pumping station to To Kwa Wan sewage screening plant)**, of the total increase of \$21 million -

- (i) \$14 million is for part of the contractors' prolongation cost due to extended contract period; and
- (ii) \$7 million is the funds required to cover part of the arbitration award and interest accrued after deducting the funds already approved by the Secretary for the Treasury under delegated authority.

4. As regards **(d) (resident site staff costs)**, of the total increase of \$28 million -

- (i) \$22 million is to cover additional site staff cost due to the extended contract period of the project; and
- (ii) \$6 million is due to salary revisions of the resident site staff in line with the increases of civil service salaries between December 1994 and December 1998.

5. As regards **(e) (contingencies)**, we retain \$20 million as the contingencies for undertaking the outstanding works, for settlement of the final accounts of completed contracts and for resolution of possible claims from the contractors.