

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 707 - NEW TOWNS AND URBAN AREA DEVELOPMENT

New Territories North Development

Civil Engineering - Drainage and erosion protection

29CD - Main drainage channel for Ngau Tam Mei phase 2 - Ngau Tam Mei to Yau Mei San Tsuen section

Members are invited to recommend to Finance Committee the upgrading of **29CD** to Category A at an estimated cost of \$142.1 million in money-of-the-day prices.

PROBLEM

We need to construct a main drainage channel from Ngau Tam Mei to Yau Mei San Tsuen (Yuen Long) to alleviate the flooding hazard to the low-lying areas of Ngau Tam Mei.

PROPOSAL

2. The Director of Territory Development (DTD), with the support of the Secretary for Works, proposes to upgrade **29CD** to Category A at an estimated cost of \$142.1 million in money-of-the-day (MOD) prices for the construction of a main drainage channel from Ngau Tam Mei to Yau Mei San Tsuen.

PROJECT SCOPE AND NATURE

3. The scope of **29CD** comprises -

/(a)

- (a) a drainage channel of about 1.7 kilometres long from Ngau Tam Mei to Yau Mei San Tsuen;
- (b) roads and ramps with associated drainage and water works;
- (c) four footbridges;
- (d) environmental mitigation measures including landscaping works; and
- (e) an environmental monitoring and audit programme for works mentioned in items (a) to (d) above.

Construction is scheduled to start in February 2000 for completion in August 2002. A plan showing the proposed works is at Enclosure 1. A drawing showing the cross section of the proposed drainage channel is at Enclosure 2.

JUSTIFICATIONS

4. In recent years, extensive changes in land use and rapid development in Ngau Tam Mei have significantly aggravated the flooding problem in the area which is already susceptible to flooding due to its low-lying topography. The “North West New Territories Base Strategy Studies” (the Initial Study), completed in 1983, recommended a series of river training works to alleviate the flooding hazard in the North West New Territories, including the low-lying areas of Ngau Tam Mei. The “Territorial Land Drainage and Flood Control Strategy Study - Phase II” completed in 1993 under **52CD**, also confirmed the recommendations of the Initial Study.

5. In July 1999, we completed the main drainage channel for the downstream part of the Kam Tin River under **60CD**. The proposed drainage channel under **29CD** will convey surface runoff arising from the upper Ngau Tam Mei catchment areas including Tam Mei Camp and Yau Tam Mei San Tsuen into the Kam Tin main drainage channel by means of a separate drainage channel about to be constructed under a complementary project **100CD** “Main drainage channel for Ngau Tam Mei Phase 1 - Yau Mei San Tsuen to Tai Sang Wai section” (See paragraph 19). The new channel is capable of accommodating a 50-year return period rainstorm. These measures will serve to alleviate flooding problems in the Ngau Tam Mei area and form part of the overall flood alleviation programme in the North West New Territories. A plan showing the flood control projects recommended under the Initial Study is at Enclosure 3.

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6. To facilitate future maintenance of the proposed drainage channel and to ensure its smooth functioning, we need to construct roads and ramps. We will also construct four footbridges with connections to the existing footpaths for crossing the proposed drainage channel.

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the project to be \$142.1 million in MOD prices (see paragraph 8 below), made up as follows -

	\$ million	
(a) Drainage channel	68.0	
(b) Roads, ramps, drainage and associated waterworks	25.0	
(c) Footbridges	3.0	
(d) Environmental mitigation measures (including landscaping works)	6.0	
(e) Environmental monitoring and audit (EM&A) programme	3.0	
(f) Consultants' fees for -	12.3	
(i) construction stage	1.3	
(ii) resident site staff costs	11.0	
(g) Contingencies	11.7	
Sub-total	129.0	(at December 1998 prices)
(h) Provision for price adjustment	13.1	
Total	142.1	(in MOD prices)

/Owing

Owing to insufficient in-house resources, DTD proposes to employ consultants to carry out the construction supervision. A breakdown by man months of the estimate for consultants' fees is at Enclosure 4.

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

Year	\$ million (Dec 1998)	Price adjustment factor	\$ million (MOD)
2000-2001	50.0	1.06217	53.1
2001-2002	50.0	1.09934	55.0
2002-2003	12.0	1.13782	13.7
2003-2004	10.0	1.17765	11.8
2004-2005	7.0	1.21886	8.5
	<hr/> 129.0 <hr/>		<hr/> 142.1 <hr/>

9. We have derived the MOD estimate on the basis of the Government's latest forecast of trend labour and construction prices for the period from 2000 to 2005. We will tender the proposed works under a standard remeasurement contract because the works involve extensive earthworks, the quantity of which may vary according to the actual ground conditions. The contract will provide for price adjustments as the contract period will exceed 21 months.

10. We estimate the annually recurrent expenditure to be \$2.08 million.

PUBLIC CONSULTATION

11. We consulted the San Tin Rural Committee and the Yuen Long Provisional District Board about the proposed works on 11 August 1997 and 26 September 1997 respectively. Members of the Committee and Provisional District Board supported the proposed project for the relief it would bring to the flooding problem in the Ngau Tam Mei area.

12. We presented the findings and the environmental mitigation measures recommended in the Environmental Impact Assessment (EIA) report to the Yuen Long District Board on 13 June 1996. Members had no objection to either. We consulted the EIA Subcommittee of the Advisory Council on the Environment (ACE) on the EIA study report on 1 July 1996. The ACE endorsed the study report with the conditions as prescribed in paragraph 16 below.

13. As the river training works involved filling below high tide level, we gazetted the proposed reclamation works under the Foreshore and Sea-bed (Reclamations) Ordinance on 27 January 1998. We received no objection and the proposed reclamation works were authorized on 17 April 1998.

14. We also gazetted the proposed road works ancillary to the drainage channel under the Roads (Works, Use and Compensation) Ordinance on 3 April 1998. Four landowners objected to the resumption of their land. We held a series of discussions with the objectors. They sought a revision of the design of the road so that the resumption limit would not exceed three metres from the toe of the road embankment, as a condition of their agreement to the scheme. On 9 February 1999, the Chief Executive in Council overruled the objections in the public interest and authorized the proposed road works with the afore-said modifications. The authorization of the road works was gazetted on 26 February 1999.

ENVIRONMENTAL IMPLICATIONS

15. The project is a designated project under Schedule 2 of the EIA Ordinance and an environmental permit is required for the construction and operation of the project. In May 1994, we employed consultants to carry out an EIA study to assess the environmental impacts due to the construction and operation of a series of flood control projects in Yuen Long, Kam Tin and Ngau Tam Mei.

16. Following completion of the EIA report in May 1996, we consulted the ACE in July 1996. ACE endorsed the report on condition that (a) the old river channels would be considered for restoration into wildlife habitats; (b) the disposal of contaminated mud should be to the satisfaction of the Fill Management Committee (FMC) and such disposal would have no adverse effects on the environment; and (c) the proponents should review the conceptual off-site

/wetland

wetland compensation measures in light of Government's latest policy on off-site wetland compensation and report back to the EIA Sub-committee of the ACE their specific proposals for this project.

17. The EIA report concluded that the environmental impact of the proposed works could be controlled to within established standards and guidelines through the implementation of the mitigation measures recommended in the EIA study. We will implement these measures. As regards the conditions set by ACE, the Agriculture and Fisheries Department is currently carrying out a study to address the restoration of the old river channels and off-site wetland compensation and will report the findings to the EIA Sub-committee in end 2000. The FMC has approved the arrangements for the disposal of contaminated mud. The key measures in respect of dredging works include the use of a closed mechanical grab, no stockpiling of contaminated mud, proper disposal of dredged materials and regular maintenance dredging. We estimate the cost of implementing the environmental mitigation measures (\$6 million) and EM&A programme (\$3 million) to be \$9 million. This cost has been included in the overall project estimate.

LAND ACQUISITION

18. On 22 June 1999, the Chief Executive in Council authorised the resumption of about 6.16 hectares of agricultural land for the project under the Lands Resumption Ordinance. The Resumption Notice was gazetted on 9 July 1999. The land acquisition and clearance will affect eight households involving 32 persons and six temporary structures. The Director of Housing will offer eligible families accommodation in public housing in line with the existing policy. We will charge the costs of land acquisition and clearance, estimated at \$106.1 million, to **Head 701** - Land Acquisition.

BACKGROUND INFORMATION

19. We upgraded **29CD** to Category B in 1987. In July 1999, Finance Committee (FC) approved the upgrading of part of **29CD** to Category A as **100CD** "Main drainage channel for Ngau Tam Mei Phase 1 - Yau Mei San Tsuen to Tai Sang Wai section". We will start works on the channel under **100CD** in November 1999 for completion in August 2002.

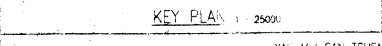
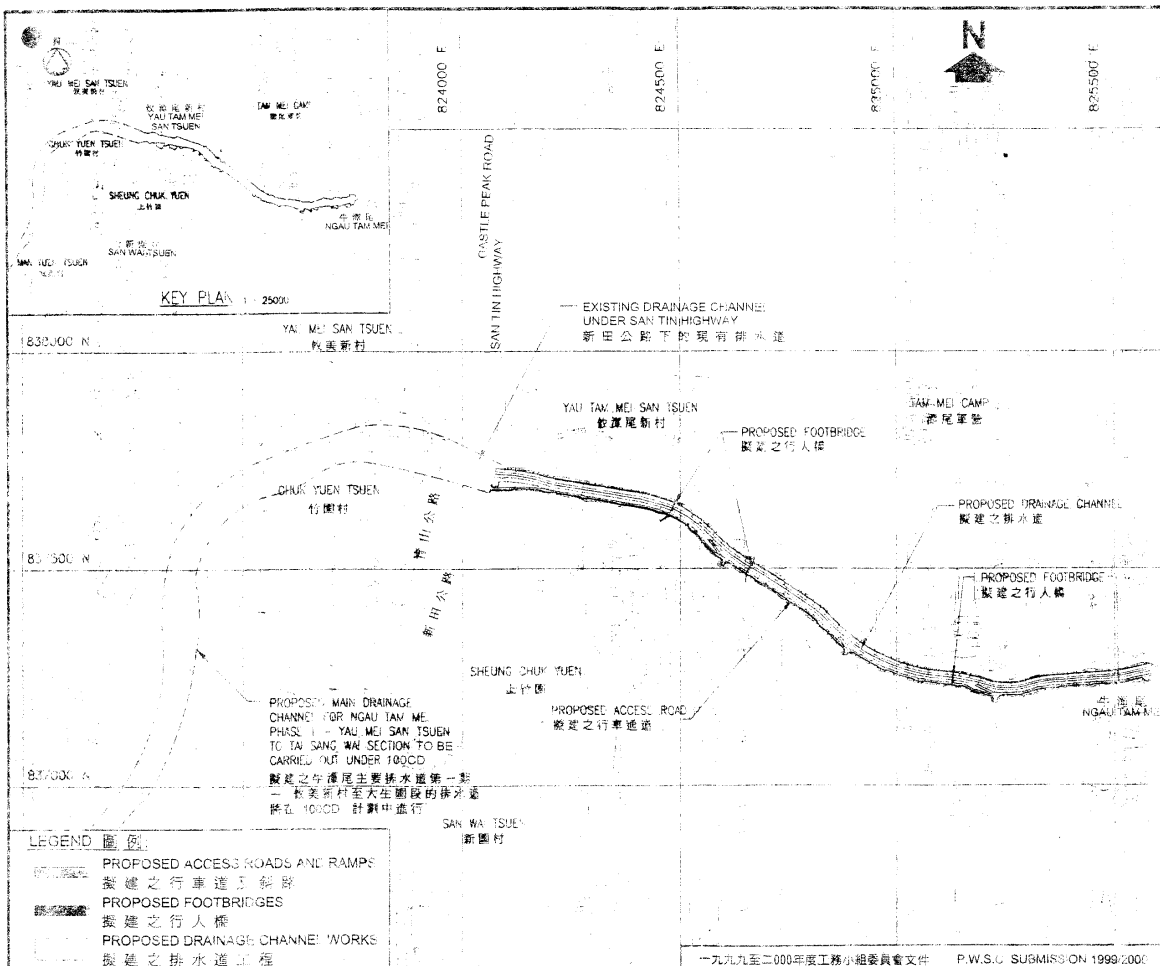
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20. In November 1996, we engaged consultants to undertake detailed design and investigation for the proposed works from Ngau Tam Mei to Yau Mei San Tsuen and charged the cost of \$3.9 million to the block allocation **7100CX** "New towns and urban area works, studies, and investigations for items in Category D of the Public Works Programme". The consultants have completed the detailed design and the preparation of tender documents for the project. We plan to commence construction in February 2000 for completion in August 2002.

21. Upon completion of all the projects mentioned in paragraphs 19 and 20 above, we will be able to ameliorate the flooding problems in the low-lying flood plain areas in Ngau Tam Mei.

Works Bureau
October 1999

[CD29-05.DOC]



NO.	DATE	PREPARED BY	CHECKED BY	SCALE
REVISION				
REV. NO.	DATE	BY	CHKD.	REASON
1		K. S. LO		22.07.95
2		Y. P. HUNG		22.07.95
3		H. W. CHEUNG		27.07.95
DRAWN: PROJECT NO. 29CD				

牛潭尾的主要排水道第一期
牛潭尾至美新村段
MAIN DRAINAGE CHANNEL FOR
NGAU TAM MEI PHASE 1
NGAU TAM MEI TO
YAU MEI SAN TSUEN SECTION

NTN 2045

新界北發展處
NEW TERRITORIES NORTH
DEVELOPMENT OFFICE

擴展部
TERRITORY
DEVELOPMENT

LEGEND

	PROPOSED ACCESS ROADS AND RAMPS 擬建之行車道及斜坡
	PROPOSED FOOTBRIDGES 擬建之行人橋
	PROPOSED DRAINAGE CHANNEL WORKS 擬建之排水道工程

Enclosure 4 to PWSC(1999-2000)64

29CD - Main drainage channel for Ngau Tam Mei phase 2 - Ngau Tam Mei to Yau Mei San Tsuen section

Breakdown of the estimate for consultants' fees

Consultants' staff costs		Estimated man months	Average MPS* salary point	Multiplier factor	Estimated fees (\$ million)
(a) Consultants' fees for construction stage					
(i) contract administration	Professional	5	40	2.4	0.8
	Technical	4	16	2.4	0.2
(ii) preparation of as-built drawings	Professional	1	40	2.4	0.2
	Technical	2	16	2.4	0.1
(b) Resident site staff costs	Professional	45	40	1.7	4.8
	Technical	174	16	1.7	6.2
Total consultants' staff costs					12.3

* MPS = Master Pay Scale

Notes

1. A multiplier factor of 2.4 is applied to the average MPS point to arrive at the full staff costs including the consultants' overheads and profits as the staff will be employed in the consultants' offices. A multiplier factor of 1.7 is applied to the average MPS point in the case of resident site staff supplied by consultants. (At 1.4.98 MPS pt. 40 = \$62,780 p.m. and MPS pt. 16 = \$21,010 p.m.)
2. The figures given above are based on estimates prepared by the Director of Territory Development. The consultancy works for this project have been included as part of the consultancy agreement for the main drainage channel works for Ngau Tam Mei Phase 2 and Yuen Long and Kam Tin Remainder Phase 3.