

For discussion  
on 14 April 1999

PWSC(1999-2000)2

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 707 - NEW TOWNS AND URBAN AREA DEVELOPMENT

#### New Territories North Development

#### 81CD - Main drainage channels for Yuen Long and Kam Tin stage 2 - remainder

Members are invited to recommend to Finance  
Committee -

- (a) the upgrading of part of **81CD**, entitled “Main drainage channels for Yuen Long and Kam Tin stage 2 - Kam Tin Road to Tai Kek section”, to Category A at an estimated cost of \$410.4 million in money-of-the-day prices; and
- (b) the retention of the remainder of **81CD** in Category B.

### PROBLEM

We need to improve the section of Kam Tin River from Kam Tin Road to Tai Kek to alleviate flooding hazard to the low-lying areas of Yuen Long and Kam Tin.

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## PROPOSAL

2. The Director of Territory Development, with the support of the Secretary for Works, proposes to upgrade part of **81CD** to category A at an estimated cost of \$410.4 million in money-of-the-day (MOD) prices to improve the section of Kam Tin River from Kam Tin Road to Tai Kek.

## PROJECT SCOPE AND NATURE

3. The scope of **81CD** comprises the construction of main drainage channels and associated works to improve the following sections of tributaries of Kam Tin River -

- (a) from Kam Tin Road to Tai Kek; and
- (b) from Ng Ka Tsuen to Kam Sheung Road near Shui Lau Tin and from Shek Tau Wai to Kam Sheung Road near Sheung Tsuen San Tsuen.

4. The part of **81CD** we now propose to upgrade to Category A comprises the works described in paragraph 3(a) above, which include -

- (a) a trapezoidal drainage channel about 3.5 kilometres long along the section of Kam Tin River between Kam Tin Road and Tai Kek;
- (b) roads and ramps with associated drainage works;
- (c) six footbridges and two vehicular bridges;
- (d) a pump chamber with the associated pumping equipment and water storage tank;
- (e) a replacement gauging station;
- (f) environmental mitigation measures including landscaping works; and
- (g) an environmental monitoring and audit programme for works mentioned in paragraphs (a) to (f) above.

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The details of the scope of the proposed works is at Annex I.

## JUSTIFICATION

5. In recent years, extensive changes in land use and rapid development in Kam Tin have significantly aggravated the flooding problem in this area, which is already susceptible to flooding due to its low-lying topography. The "North West New Territories Base Strategy Studies" (the 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 Yuen Long and Kam Tin. The "Territorial Land Drainage and Flood Control Strategy Study - Phase II", completed in 1993 under **52CD**, also confirmed the recommendation of the Study. The river training works for Shan Pui River and the downstream of Kam Tin River under **60CD** and **43CD** respectively commenced in 1993 and are nearing completion. The proposed works under **81CD** are the continuation of the downstream works aiming to alleviate flooding in the upstream areas of Kam Tin and form part of the overall flood alleviation programme. The locations of sites of **81CD** in relation to other drainage channel works in the Yuen Long and Kam Tin area are shown at Annex II.

6. The existing section of the Kam Tin River between Kam Tin Road and Tai Kek is narrow and meandering. The proposed works will turn the upper reaches of the section into a wider and deeper drainage channel. This new channel will substantially increase the hydraulic capacity of the river and is capable of accommodating a 50-year return period rainstorm, thus relieving the area from flood risk.

7. As the new drainage channel will be wider and will follow a new alignment at several locations, some areas of farmland that depend on water from the river for irrigation would be affected. In order to maintain river water supply to these areas, we will construct a pump chamber and a water storage tank with a capacity of 33m<sup>3</sup> in the middle reaches of the drainage channel, north of Shek Wu Tong to replace an existing irrigation dam.

8. The existing gauging station near Tai Kek needs to be replaced as it is located within the alignment of the proposed drainage channel.

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9. 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 two vehicular bridges and six footbridges for the local residents to replace the existing river-crossing facilities, which need to be demolished under the proposed works.

10. The upstream and downstream sections of the proposed drainage channel fall within the site boundary of the West Rail project of the Kowloon Canton Railway Corporation (KCRC). The alignment of the midstream section of the drainage channel crosses that of the Eastern Access Road to the West Rail station. We plan to start works in July 1999 for completion in March 2002 which is within the construction period of the West Rail project. In order to avoid interface problems with KCRC contractors and to ensure cost-effectiveness and timely completion of the drainage channel, we will entrust the whole of the works to KCRC for construction in conjunction with the West Rail project. We will reimburse KCRC the cost of the works and the on-cost.

11. To integrate with the layout of the West Rail project, KCRC will re-design the alignment for the parts of the drainage channel within the site boundary of the West Rail project. KCRC will also extend the drainage channel upstream to Ho Pui. KCRC will bear the additional cost due to the realignment and extension of the channel. The proposed alignments of the original drainage channel designed by the Director of Drainage Services (D of DS) and the channel re-designed by KCRC are shown at Annex III.

## FINANCIAL IMPLICATIONS

12. We estimate the capital cost of the project to be \$410.4 million in MOD prices (see paragraph 13 below), made up as follows -

	<b>\$ million</b>
(a) Drainage channel	160.5
(b) Pump chamber , water storage tank and gauging station	4.3
(c) Roadworks and associated drainage works	77.1
(d) Footbridges and vehicular bridges	53.5

			/(e) .....
(e)	Environmental mitigation measures (including landscaping works)	8.6	
(f)	Environmental monitoring and audit (EM&A) programme	5.4	
(g)	Contingencies	30.9	
(h)	On-cost <sup>1</sup>	39.5	
	Sub-total	379.8	(at December 1998 prices)
(i)	Provision for price adjustment	30.6	
	Total	410.4	(in MOD prices)

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

Year	\$ million (Dec 1998)	Price adjustment factor	\$ million (MOD)
1999 - 2000	71.7	1.02625	73.6
2000 - 01	128.1	1.06217	136.1
2001 - 02	112.8	1.09934	124.0
2002 - 03	61.6	1.13782	70.1
2003 - 04	5.6	1.17765	6.6

<sup>1</sup>

We will pay an on-cost of 11.6% of the construction cost to KCRC for project management and associated costs. We do not apply the standard 16.5% on-cost as KCRC is not required to carry out the design work for this project.

379.8

410.4

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14. We have derived the MOD estimate on the basis of the Government's latest forecast of trend of labour and construction prices for the period from 1999 to 2004. KCRC will tender the proposed works as part of a fixed price lump-sum contract for West Rail depot and station with remeasurement for earthworks and foundation works, the quantities of which may vary according to the actual ground conditions. Prices for the proposed works will be indicated separately in KCRC's main contract. The contract will not provide for price adjustment.

15. We estimate the annually recurrent expenditure to be \$4.48 million.

## **PUBLIC CONSULTATION**

16. We consulted the Pat Heung Rural Committee, Kam Tin Rural Committee and Yuen Long District Board on the proposed works on 22 January 1994, 28 March 1994 and 14 April 1994 respectively. Members of the Rural Committees and District Board supported the proposed project for the relief it would bring to the flooding problem in Yuen Long and Kam Tin.

17. We presented the findings and the environmental mitigation measures recommended in the Environmental Impact Assessment (EIA) report to the Environmental Improvement Committee of the Yuen Long District Board on 13 June 1996. Members had no objection to the findings and the recommended mitigation measures. We then consulted the EIA Subcommittee of the Advisory Council on the Environment (ACE) on the EIA report on 1 July 1996. The ACE endorsed the report with conditions as prescribed in paragraph 22 below.

18. We gazetted the proposed drainage works under the Foreshore and Seabed (Reclamations) Ordinance on 16 September 1994 and received no objection.

19. We also gazetted the proposed road works ancillary to the drainage channel under the Roads (Works, Use and Compensation) Ordinance on 25 November 1994 and again on 20 December 1996 for modifications to the road scheme. With the West Rail project given the formal go-ahead in December 1996 and its alignment confirmed in early 1997, we found that the alignment of the West Rail overlapped with the upstream and downstream portions of the

drainage channel and the gazetted road scheme. KCRC re-designed the alignment of the drainage channel of these portions, and gazetted the West Rail including the

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affected portions of the drainage channel under the Railways Ordinance on 3 October 1997. On the same day, we de-gazetted the road scheme ancillary to the whole drainage channel and gazetted the road scheme ancillary to the midstream of the channel from Shek Wu Tong to south of Tai Hong Tsuen under the Roads (Works, Use and Compensation) Ordinance. We received eight objections. We had a series of discussions with the objectors. Four objectors subsequently withdrew their objections. We persuaded one objector to withdraw his objection on condition that the land resumption limit would be revised to avoid resuming a portion of his land. The remaining three objectors, who objected to the resumption of their land, refused to withdraw their objections.

20. On 20 November 1998, the Chief Executive in Council overruled the objections raised by the three objectors and authorized the proposed road works with modifications to the resumption limit.

21. The LegCo Panel on Planning, Lands and Works discussed the proposed upgrading on 23 March 1999. No adverse comments were raised.

## **ENVIRONMENTAL IMPLICATIONS**

22. Under the EIA Ordinance, the project is a designated project and an Environmental Permit is required. We obtained the Environmental Permit on 17 December 1998. In May 1994, we employed consultants to carry out an EIA to assess the environmental impact due to the construction and operation of a series of flood control projects in Yuen Long, Kam Tin and Ngau Tam Mei. Following completion of the EIA report in May 1996, we consulted the ACE in July 1996. ACE endorsed the report on condition that (a) 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 that such disposal would have no adverse effects on the environment; and (c) the proponents should review the conceptual off-site compensation measures in light of Government's latest policy on off-site compensation and report back to the EIA Sub-committee of the ACE their specific proposals for this project.

23. 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 as recommended in the EIA. We will implement these measures. As regards the conditions set by ACE, the consultants of Agriculture and Fisheries Department have started a study to address

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the issues of the restoration of the old river channels and off-site compensation, and will report the findings to the EIA Sub-committee in due course. We have also obtained approval from the FMC for the arrangements to dispose 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 (\$8.6 million) and EM&A programme (\$5.4 million) to be \$14 million which has been included as part of the overall project estimate.

## LAND ACQUISITION

24. Government has already resumed the land within the site boundary of the West Rail project, including the upstream and downstream sections of the drainage channel. Government will handover the required land to KCRC in April 1999 for construction of the West Rail works in July 1999. The acquisition and clearance costs for the land within the site boundary of the West Rail project will be borne by KCRC according to the West Rail Project Agreement established between the Administration and KCRC. For the midstream section which is outside the site boundary of the West Rail project, we will resume about 6.5 hectares of agricultural land for the project. The land acquisition and clearance will affect 13 households involving 37 persons and 61 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 for the midstream section of the drainage channel and associated works, estimated at \$113 million, to **Head 701 - Land Acquisition**.

## BACKGROUND INFORMATION

25. Stage 1 of the main drainage channels for Yuen Long and Kam Tin is under construction under **60CD** entitled "North West New Territories development - main drainage channels for Yuen Long and Kam Tin Stage 1 Phase 1" (which started in October 1993 for completion in May 1999) and **43CD** entitled "North West New Territories development - main drainage channels for Yuen Long and Kam Tin Stage 1 Phase 2" (which started construction in October



1995 for completion in May 1999).

26. We upgraded **81CD** to Category B in September 1995. We upgraded part of **81CD** to Category A in March 1999 for the construction work of the section from Kam Tin San Tsuen to Wang Toi Shan to start in August 1999 for completion in April 2002.

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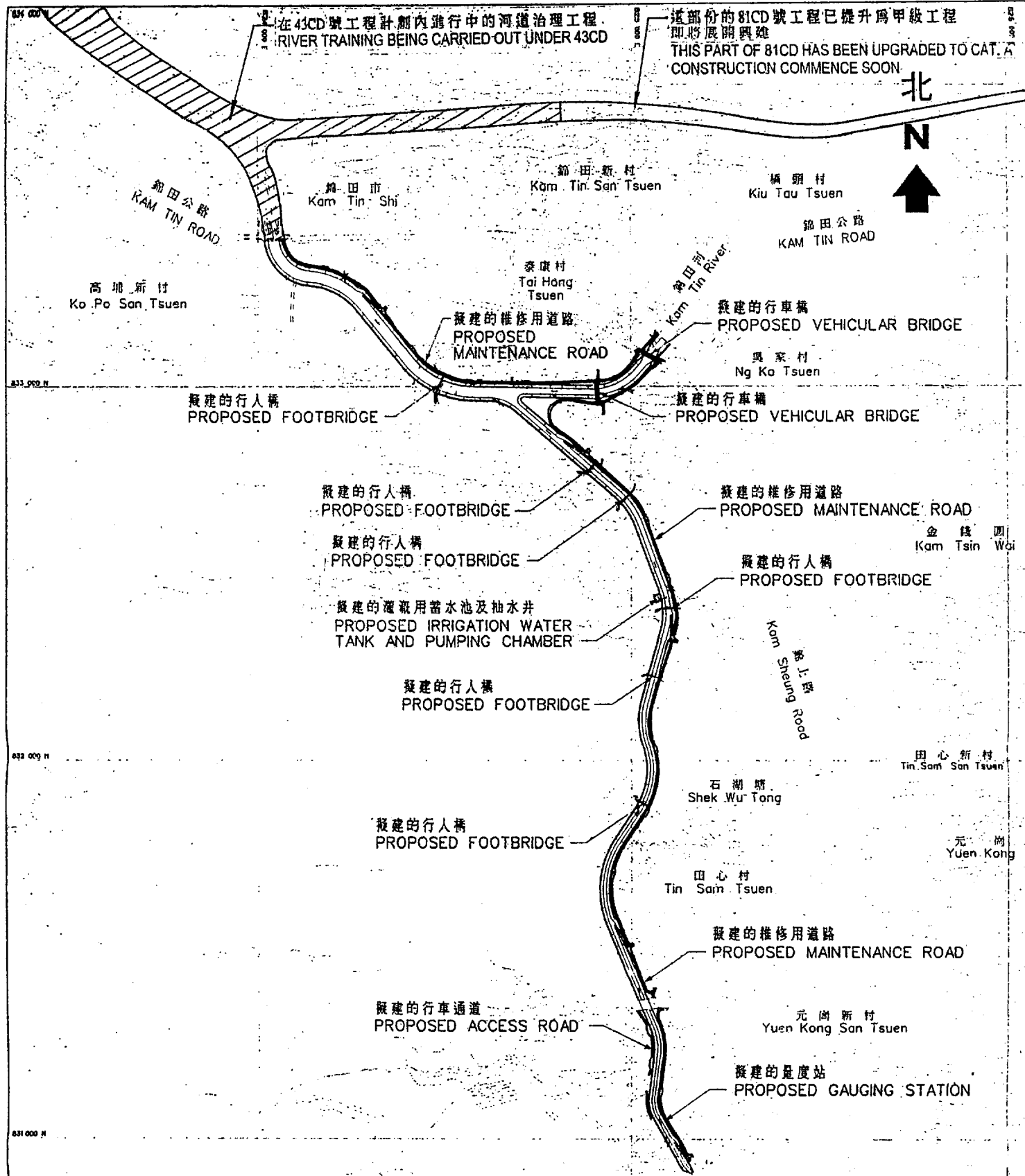
27. D of DS has completed the detailed design and drawings for the proposed works using in-house resources.

28. We plan to start the construction works in July 1999 for completion in March 2002. We will commence the remaining works under **81CD** in October 2000 for completion in January 2003.

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Works Bureau  
April 1999

(PWSC0092/WIN3)



在43CD號工程計劃內進行中的河道治理工程  
RIVER TRAINING BEING CARRIED OUT UNDER 43CD

這部份的81CD號工程已提升為甲級工程  
即將展開興建  
THIS PART OF 81CD HAS BEEN UPGRADED TO CAT. A  
CONSTRUCTION COMMENCE SOON.



**圖例 LEGEND:**

	擬建的河道工程 PROPOSED RIVER CHANNEL WORKS
	擬建的維修用道路 PROPOSED MAINTENANCE ROAD
	擬建的行人橋 PROPOSED FOOTBRIDGE
	擬建的行車橋 PROPOSED VEHICULAR BRIDGE

C	3/3/99	One Footbridge in the upstream section deleted		
B	27/1/99	Works already upgraded to Cat.A added		
A	14/1/99	GENERAL REVISION		
編號 no	日期 date	修訂 description	核對 checked	核准 approved

一九九九至二零零零年度工務小組委員會文件 P.W.S.C. SUBMISSION 1999/2000

圖則名稱 drawing title  
元朗及錦田主要排水道第2階段 - 餘下工程  
MAIN DRAINAGE CHANNELS FOR YUEN LONG AND KAM TIN STAGE 2 - REMAINDER

繪圖 drawn	簽署 initial	日期 date
K. S. LO		17.12.98
核對 checked	簽署 initial	日期 date
H. W. NGAI		17.12.98
核准 approved	簽署 initial	日期 date
M. Y. MA		17.12.98

修訂 REVISION

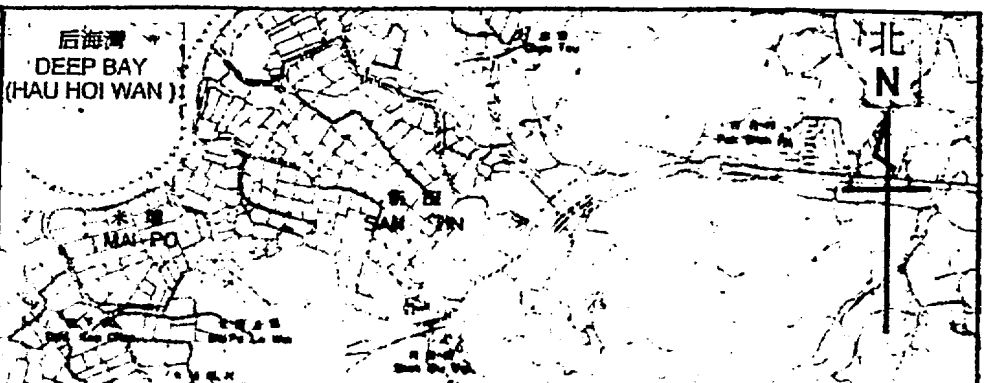
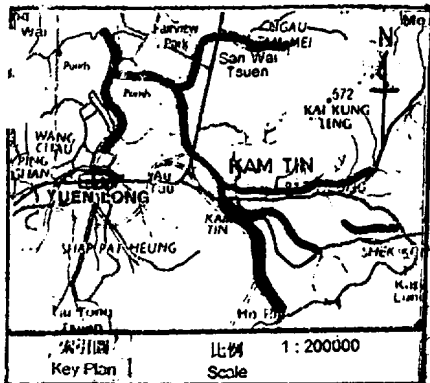
項目編號 item no. 81CD

比例 scale 1 : 10 000

圖則編號 NTN 2024 C

辦事處 office 新界北拓展處 NEW TERRITORIES NORTH DEVELOPMENT OFFICE

拓展署 TERRITORY DEVELOPMENT DEPARTMENT



在60CD號工程計劃內進行的河道治理工程  
RIVER TRAINING BEING CARRIED OUT UNDER 60CD

將會在29CD號工程計劃內進行的河道治理工程  
RIVER TRAINING TO BE CARRIED OUT UNDER 29CD

在43CD號工程計劃內進行的河道治理工程  
RIVER TRAINING BEING CARRIED OUT UNDER 43CD

這部分的81CD號工程已提升為甲級工程  
即將展開興建  
THIS PART OF 81CD HAS BEEN UPGRADED TO CAT. A  
CONSTRUCTION COMMENCE SOON

建議河道治理工程  
(這部分的81CD號工程計劃將提升為甲級工程)  
PROPOSED RIVER TRAINING  
(THIS PART OF 81CD TO BE UPGRADED TO CAT. A)

錦上河上游的河道治理工程  
(81CD號工程計劃的餘下部分將保留為乙級工程)  
RIVER TRAINING FOR UPSTREAM OF KAM TIN RIVER  
(REMAINING WORKS OF 81CD TO BE RETAINED IN CAT. B)

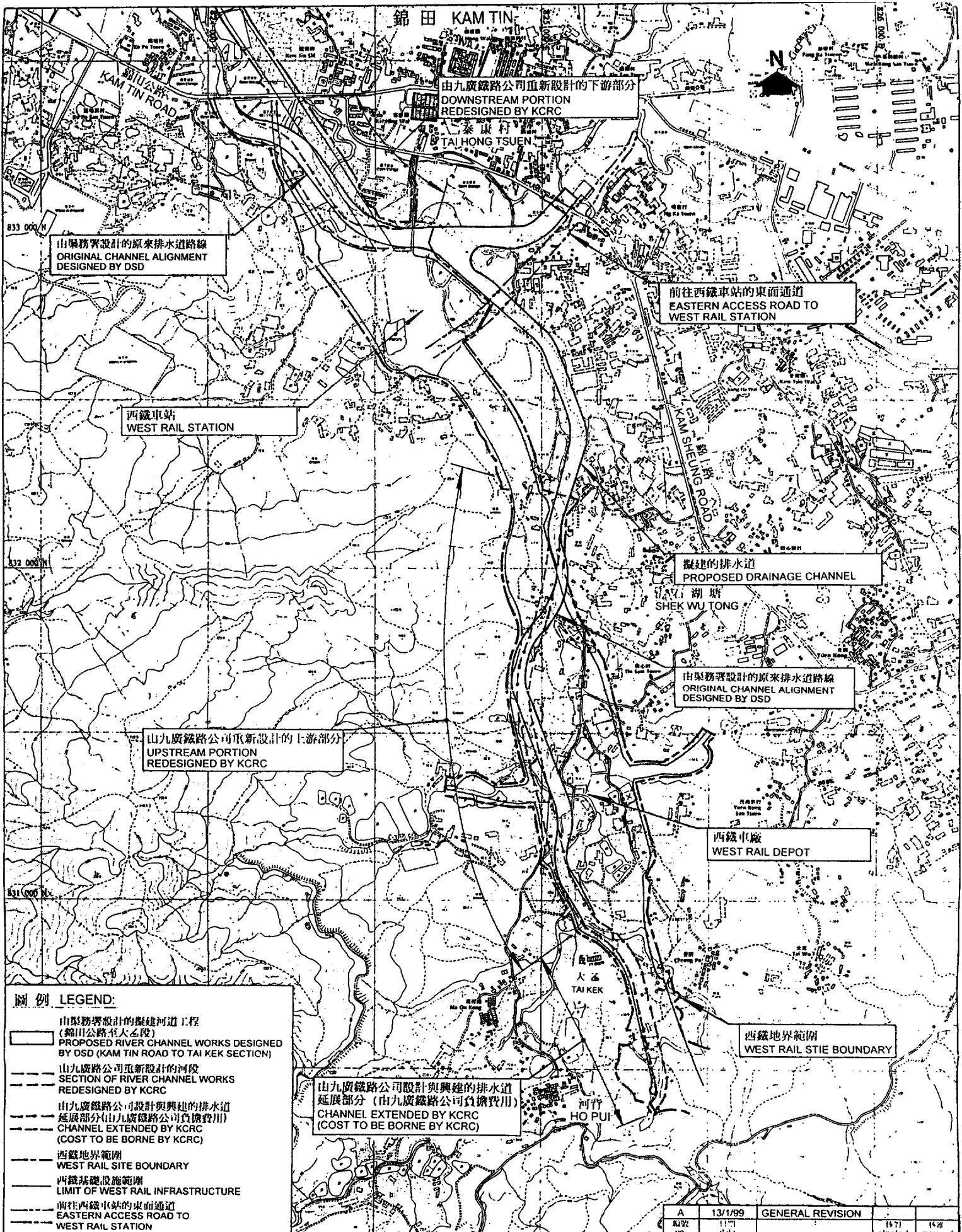
**圖例 LEGEND:**

建議提升為甲級的工程  
PROPOSED WORKS TO BE UPGRADED TO CAT. A

A	14/1/99	GENERAL REVISION		
編號 no.	日期 date	內容摘要 description	核對 checked	核准 approved

一九九九至二零零零年度工務小組委員會文件 P.W.S.C. SUBMISSION 1999/2000 修訂 REVISION

圖名 drawing title 元朗及錦田主要排水道第2階段-餘下工程 MAIN DRAINAGE CHANNELS FOR YUEN LONG AND KAM TIN STAGE 2 - REMAINDER	繪圖 drawn K.S. LO	日期 date 17.12.98	項目編號 item no. 81CD	辦事處 office 新界北拓展處 NEW TERRITORIES NORTH DEVELOPMENT OFFICE
	核對 checked H.W. NGAI	日期 date 17 12 98		
	核對 approved M.Y. MA	日期 date 17 12 98	圖則編號 drawing no. NTN 2023A	拓展署 TERRITORY DEVELOPMENT DEPARTMENT



- 圖例 LEGEND:**
- 由渠務署設計的擬建河道工程 (錦田公路至大石段)  
PROPOSED RIVER CHANNEL WORKS DESIGNED BY DSD (KAM TIN ROAD TO TAI KEK SECTION)
  - - - 由九廣鐵路公司重新設計的河段  
SECTION OF RIVER CHANNEL WORKS REDESIGNED BY KCR
  - - - 由九廣鐵路公司設計與興建的排水道 延長部分(由九廣鐵路公司負擔費用)  
CHANNEL EXTENDED BY KCR (COST TO BE BORNE BY KCR)
  - - - 西鐵地界範圍  
WEST RAIL SITE BOUNDARY
  - - - 西鐵基礎設施範圍  
LIMIT OF WEST RAIL INFRASTRUCTURE
  - - - 前往西鐵車站的東面通道  
EASTERN ACCESS ROAD TO WEST RAIL STATION

由九廣鐵路公司設計與興建的排水道 延長部分 (由九廣鐵路公司負擔費用)  
CHANNEL EXTENDED BY KCR (COST TO BE BORNE BY KCR)

一九九九年十二月零九年度工務小組委員會文件 P.W.S.C. SUBMISSION 1999/2000

圖則名稱 drawing title	繪圖 drawn	簽署 initial	日期 date
元朗及錦田主要排水道第2階段 - 餘下工程 MAIN DRAINAGE CHANNELS FOR YUEN LONG AND KAM TIN STAGE 2 - REMAINDER	K. S. LO	<i>[Signature]</i>	23.12.98
	核對 checked	簽署 initial	日期 date
	H. W. NGAI	<i>[Signature]</i>	23.12.98
	核准 approved	簽署 initial	日期 date
	M. Y. MA	<i>[Signature]</i>	23.12.98

A	13/1/99	GENERAL REVISION	15/7/99	15/8/99
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修訂 REVISION

項目編號 item no. 81CD

比例 scale 1:10 000

圖則號 NTN 2026 A

辦事處 office 新界北拓展處  
NEW TERRITORIES NORTH DEVELOPMENT OFFICE

拓展署  
TERRITORY DEVELOPMENT DEPARTMENT