Discussion Paper for Legislative Council Panel on Planning, Lands and Works Meeting on 5 February 2001

90CD -Regulation of Shenzhen River, Stage III

Introduction

We intend to upgrade in May 2001 the Public Works Project Item **90CD** "Regulation of Shenzhen River, Stage III" to Category A at an estimated cost of $598 million in money-of-the-day (MOD) prices for regulating the section of Shenzhen River from Lo Wu to Lo Shue Ling. This paper is to brief Members of the background and the details of the proposed works.

Background

2. The Shenzhen River is the boundary river between the Hong Kong Special Administrative Region (HKSAR) and the Shenzhen Special Economic Zone. As the regulation of the River is a joint task between the governments of the both sides, a Joint Working Group has been set up to manage the implementation of the Shenzhen River Regulation project.

3. The project comprises three stages. Stage I covers the straightening, widening and deepening of two stretches of the River at Lok Ma Chau and Liu Pok. Stage II covers the widening and deepening of sections of the River from Lok Ma Chau bend to Deep Bay and from Lok Ma Chau bend to Liu Pok bend. Stage III covers the widening and deepening of the River from Lo Wu upstream to Lo Shue Ling. A map showing the scheme of the Regulation of Shenzhen River is at **Enclosure 1**.

4. Stage I works began in May 1995 and was completed in May 1997. Stage II works began in April 1997 and was completed in June 2000.

5. In August 1997, we upgraded **90CD** "Regulation of Shenzhen River, Stage III" to Category B. In December 1997, we entrusted to the Shenzhen

Municipal Government a consultancy study on detailed design, hydrological data collection, topographic survey, Environmental Impact Assessment (EIA) study, hydraulic modelling, and site investigation for the project.

6. The detailed design of the proposed works has now been substantially completed. We plan to commence the works in October 2001 for completion in April 2005.

Project Scope

7. The scope of works under **90CD** comprises improvement works to the River, as follows –

(i) Works undertaken and funded solely by the Government of the HKSAR (at an estimated cost of $151 million in MOD prices)

- reprovisioning of about 1.9 kilometres of border road at Yuen Leng Chai and upstream of Man Kam To and associated border security facilities;

- construction of about 1.1 kilometres of temporary security fence at Nam Hang spoil disposal ground; and

- associated works including landscaping, slope, paving, drainage and electrical and mechanical works.

(ii) Works undertaken jointly with the Shenzhen Municipal Government

(a) Funded solely by the Government of the HKSAR (at an estimated cost of $9 million in MOD prices)

- reconstruction and modification of railways track and associated electricity and telecommunication facilities on the Hong Kong side.

(b) Funded by the Government of the HKSAR and the Shenzhen Municipal Government on an equal share basis (at an estimated cost of $438 million in MOD prices to each side)

- improvement of about 4 kilometres of the River from the confluence with River Indus at Lo Wu to the confluence with River Ganges;

- reconstruction of the Lo Wu Railway Bridge, Lo Wu old pedestrian bridge and Man Kam To Vehicular Bridge;

- re-assembling of the dismantled Lo Wu Railway Bridge;

- reprovisioning of border fence at Lo Wu and Nam Hang; and

- ancillary drainage works, culvert, pipes, hydrological stations,, landscaping and reprovisioning works.

8. A location plan showing the proposed works is shown at **Enclosure 2**.

Justification

9. The hydraulic capacity of the Shenzhen River has become inadequate due to rapid developments in both the Northern New Territories and Shenzhen over the past decades. This has increased the flooding risk in the catchment area of the River. Hence, there is an urgent need to implement the Shenzhen River Regulation project to reduce the risk of flooding along both sides of the River.

10. As the River is the main outlet of the Northern New Territories stormwater catchment, the regulation project is the key element of our overall scheme to resolve flooding problems in the areas. With the completion of Stages I and II works, the River downstream of Lo Wu has attained the required capacity of a 50-year return period. The extent and intensity of potential regional flooding around the regulated sections have largely been reduced. We are now ready to proceed with Stage III works, which will widen and deepen the River from Lo Wu up to Lo Shue Ling. Stage III works will further improve the drainage capacity of the River to the

required standard thus alleviating the flooding problem in areas from Lo Wu up to Lo Shue Ling.

11. Stage III works will affect a number of facilities within the site, including Lo Wu Railway Bridge, Lo Wu Old Pedestrian Bridge, Man Kam To Vehicular Bridge, the border road and border fence at Yuen Leng Chai and upstream of Man Kam To and a section of twin 2 meter diameter Dongjiang Water Mains. We need to demolish or relocate/divert these facilities during construction and will reprovide them as part of the works. We will complete the necessary reprovisioning works before removing the existing facilities so as to ensure that all the services would not be affected or disrupted. The EIA for the project has assessed that the existing Lo Wu Railway Bridge is of historical value. We will re-assemble the bridge at the bend of River Indus adjacent to the Lo Wu Terminal as a monument.

12. The EIA for the project has also identified and recommended that the Nam Hang Valley be used as a non-contaminated spoil disposal ground for this project. As a section of border road and border fence will be affected, we need to construct a temporary security fence to make the site available for spoil disposal and to maintain the border security of the area during construction.

FINANCIAL IMPLICATIONS

13. The Joint Working Group has agreed that funding for regulating the River should be equally shared between the two governments while the provision of land, demolition or relocation/diversion/reprovisioning of border security facilities, railway and associated facilities affected within its own territory be funded by the respective government.

14. We estimate the capital cost of the proposed works to be funded by the Government of the HKSAR is $598 million in MOD prices, in which $160 million in MOD prices are for the works solely funded by the Government of the HKSAR while $438 million in MOD prices are for the works jointly undertaken with the Shenzhen Municipal Government. **Enclosure 3** gives a preliminary breakdown and phasing of expenditure for the project.

15. We have agreed with the Shenzhen Municipal Government that each side will be responsible for the maintenance of its own embankment and associated structures, while future maintenance dredging of the river channel will remain a joint undertaking. The annually recurrent expenditure to be borne by the Government of the HKSAR will be $3.7 million.

ENTRUSTMENT ARRANGEMENTS

16. It is neither practicable nor cost-effective for each side to implement separately those river improvement works falling within its own territory. We have agreed in principle to entrust the proposed works in para. 7(ii) to the Shenzhen Municipal Government for implementation. We have adopted this arrangement in view of access to the site, the existing usage and management of the River, and the effectiveness of contract administration. The Shenzhen River Regulation Office (the Office) of the Shenzhen Municipal Government will take up the role of the Employer of the works contracts and will be responsible for inviting tenders for the works contracts on the basis of tender documents agreed between the Government of the HKSAR and the Shenzhen Municipal Government. The Office will be responsible for supervising the works and carrying out environmental monitoring and audit during construction. The works contracts will be subject to overall control and monitoring by the Joint Working Group. We carried out Stage I and II works under similar arrangements, which worked satisfactorily.

17. The proposed works to be entrusted to the Shenzhen Municipal Government will be implemented in three construction contracts. We will work out entrustment agreements with the Shenzhen Municipal Government and will sign the agreement before the award of each works contract. The entrustment agreement will set out the duties and obligations of each side, and arrangements on funding, financial control, contract management, site security and payments.

PUBLIC CONSULTATION

18. We presented the proposed works to the North Provisional District Board on 5 August 1999. Members of the District Board supported the proposal. We gazetted the works under the Foreshore and Sea-bed (Reclamations) Ordinance on 21 July 2000 and no objection has been received.

19. We gazetted the works under the Railways Ordinance on 19 January 2001. We expect to gazette the works under the Roads (Works, Use and Compensation) Ordinance in early February 2001.

ENVIRONMENTAL IMPLICATIONS

20. 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 June 2000, the EIA report for the project was approved under the EIA Ordinance. The EIA report concluded that the environmental impact of the project could be controlled to within the criteria under the EIA Ordinance and the Technical Memorandum on EIA Process. The Shenzhen Municipal Government and the Government of the HKSAR shall implement the measures recommended in the approved EIA report. Ecological mitigation measures are one of the key recommendations under EIA report, which involve the compensation for the losses of fishponds and wetland due to the river training works. We will reinstate the affected fishponds within the site, restore river meanders, plant trees within the site and carry out environment monitoring and audit during construction.

21. For the part of the project undertaken solely by the Government of the HKSAR, we estimate that about 70,000 m^3 of construction and demolition (C&D) material will be generated. Of these about 40,000 m^3 (57%) will be reused on site, 21,000 m^3 of inert C&D material (30%) will be reused as fill in public filling areas and about 9,000 m^3 of C&D waste (13%) will be disposed of at landfills.

22. We have considered in the planning and design stages to reduce the generation of C&D material as far as possible. We will require the contractor to submit a waste management plan to the Engineer of the contracts for approval. The waste management plan will include appropriate mitigation measures to avoid, reduce, re-use and recycle C&D material. We will ensure the day-to-day operations on site complying with the waste management plan submitted. We will require the Contractor to re-use the excavation material as filling material on site or on other construction sites as far as possible to minimize disposal to public filling facilities. We will also require the contractors to break down any over-sized fill/C&D material to less than 250mm in size so as to facilitate its reuse. To further minimize the

generation of C&D material, we will encourage the contractor to use non-timber formwork and recyclable material for temporary works. We will control the disposal of public fill and C&D waste to designated public filling facilities and landfills respectively through a trip-ticket system. Contractors will be required to separate public fill from C&D waste for disposal at appropriate facilities. We will record the disposal, re-use and re-cycling of C&D material for monitoring purposes.

23. For the part of the project jointly undertaken with the Shenzhen Municipal Government, we estimate that about 2 million m^3 of material will be excavated from the River. Of these, about 0.4 million m^3 (20%) will be reused on site, about 0.2 million m^3 (10%) of contaminated spoil will be disposed of in East Sha Chau, about 0.4 million m^3 (20%) of uncontaminated spoil will be disposed of in Nam Hang Valley and about 1 million m^3 (50%) of uncontaminated spoil will be disposed of in Neilingding in the Mainland water.

LAND ACQUISITION

24. We have agreed with the Shenzhen Municipal Government that each side shall be responsible for the acquisition and clearance of land required for the project within its own territory, including the costs thereof. We will acquire and clear 18.9 hectares of agricultural land and will clear 27.6 hectares of Government Land for the proposed works. The clearance will remove 24 temporary structures including six domestic ones. Six families comprising 24 persons will be affected. Subject to a detailed screening to be carried out by the Housing Department, eligible domestic occupants will be offered public housing under the current housing policy. Furthermore, we will create a right of temporary occupation over a strip of land of 0.2 hectares within the vested area of KCRC to facilitate reprovisioning of the existing Lo Wu Railway Bridge. We will charge the land acquisition and clearance costs, estimated to be about $248 million, to Head 701 - Land Acquisition.

Works Bureau
January 2001

Enclosure 3

Preliminary Breakdown and Phasing of Expenditure for 90CD

1. Breakdown

	In September 2000 Prices ($million)	Provision for Price Adjustment ($million)	In MOD Prices ($million)
Works undertaken and funded solely by the Government of the HKSAR			
Reprovisioning of border road	77.8		
Construction of temporary security fence	8.1		
Landscaping, slope, paving, drainage and E&M Works	35.6		
Environmental mitigation measures	5.7		
Contingency	11.6		
Sub-total	**138.8**	**12.2**	**151.0**
Works undertaken jointly with the Shenzhen Municipal Government			
(a) Funded solely by the Government of the HKSAR			
Reconstruction and modification of railway tracks and associated Works	7.7		
Contingency	0.7		
Sub-total	**8.4**	**0.6**	**9.0**
(b) Funded by the Government of the HKSAR and the Shenzhen Municipal Government on an equal share basis			
Improvement of the River	243.7		
Reconstruction of bridges	41.9		
Reassembling of Lo Wu Railway Bridge	1.5		
Reprovisioning of border fence	7.6		
Ancillary drainage, hydrological stations, landscaping and reprovisioning works	31.2		
Environmental mitigation measures	15.3		
Contract management and supervision	16.7		
Consultancy fee at construction stage	1.1		
Contingency	35.2		
Sub-total	**394.2**	**43.8**	**438.0**
Total	**541.4**	**56.6**	**598.0**

2. Phasing of Expenditure

Year	$ million (In September Prices 2000)	Price Adjustment Factor	$ million (In MOD Prices)
2001-2002	10.0	1.0255	10.3
2002-2003	125.2	1.05627	132.2
2003-2004	171.9	1.08795	187.0
2004-2005	126.2	1.12059	141.4
2005-2006	57.3	1.15421	66.1
2006-2007	37.2	1.18884	44.2
2007-2008	13.6	1.2245	16.7
Total	**541.4**		**598.0**