

or discussion
on 2 June 1999

PWSC(1999-2000)35

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 711 - HOUSING

Territory Development

Civil Engineering - Land development

**561CL - Tin Shui Wai further development - remaining engineering
infrastructure and site formation works**

Members are invited to recommend to Finance Committee the upgrading of **561CL** to Category A at an estimated cost of \$768.8 million in money-of-the-day prices for the remaining engineering works of Tin Shui Wai further development.

PROBLEM

We need to complete the remaining engineering infrastructure and site formation works in the Reserve Zone (RZ) to support further development of Tin Shui Wai (TSW) to cope with the demand for more housing sites.

PROPOSAL

2. The Director of Territory Development (DTD), with the support of the Secretary for Housing, proposes to upgrade **561CL** to Category A at an estimated cost of \$768.8 million in money-of-the-day (MOD) prices for the remaining engineering infrastructure and site formation works in the RZ of TSW.

/PROJECT

PROJECT SCOPE AND NATURE

3. The original project scope of **561CL** covers the entire range of new engineering infrastructure in the RZ and the Development Zone (DZ) that is required to service proposed further housing developments in TSW. In February 1998, Finance Committee approved the upgrading of a major part of **561CL** to Category A as **563CL** (see paragraph 19 below). The remaining scope of **561CL** we now propose to upgrade to Category A covers the works in north-eastern RZ and north of Tin Wah Road to the west of the Western Drainage Channel (WDC) which comprise -

- (a) site formation of Areas 114, 118, 119 and 121 to 123 (total 74 hectares);
- (b) construction of Road D3 (a dual two-lane carriageway of about 1.5 kilometres long);
- (c) construction of two vehicular bridges (about 540 metres and 100 metres long respectively) and one pedestrian/cyclist bridge (about 100 metres long) across the WDC;
- (d) construction of a promenade with a cycle track;
- (e) ancillary drains, sewers, concrete lining to a section of the WDC, and landscaping works;
- (f) construction of a wetland (36 hectares) and associated woodland (30 hectares); and
- (g) environmental monitoring and audit programme for items (a) to (f) above.

JUSTIFICATIONS

4. The Administration decided in 1994 to further develop TSW as a major area for additional housing supply. In this regard, we have designated about 23 hectares of land in the DZ and about 70 hectares of land (out of a total area of 213 hectares) in the RZ for further development into residential areas. Upon full development by 2003, these areas will provide some 62 500 housing units to accommodate a population of about 190 000 people. In order to cater for the proposed additional developments in TSW, we need to provide the necessary infrastructure in step with the phased completion of the building development.

/5.

5. We started the construction of a major part of the engineering infrastructure works under **563CL** in mid 1998. These will be completed in phases from August 1999 to end 2001 to serve the early occupation of the housing sites in the RZ. As population builds up, we need to construct Road D3 at the western periphery of the RZ. This road will serve as a district distributor road that provides an alternative and more direct external access link for the developments at the north of the RZ. In conjunction with the construction of Road D3, we need to construct two vehicular bridges and one pedestrian/cyclist bridge, a promenade and a cycle track.

6. Development of the RZ has filled up some freshwater habitats in an old river channel and a short section of the Eastern Temporary Channel. To compensate for the ecological habitats lost, we will provide a 36 hectare constructed wetland in Area 114 and part of Area 118 of the RZ. In addition, we will plant woodlands in Areas 118 and 119, hydroseed Areas 122 and 123 and form a government, institution and community site in Area 121. As well as providing varied habitats for native flora/fauna and attracting particular species of birds, the constructed wetland and woodlands will act as a buffer zone to reduce human disturbance to the birds feeding in the Mai Po Marshes Nature Reserve nearby. The constructed wetland will incorporate a reed-bed system¹ which will provide a treatment function and remove a portion of the pollutants present in the stormwater runoff before discharging into Deep Bay.

7. We will retain the existing WDC in the RZ in its current unlined form to preserve important ecological habitats. However, we will provide a concrete bed to a 500 metre long section of channel directly downstream of the existing inflatable dam near Tin Wah Road. This will facilitate maintenance and clearance of this part of the channel as debris and tidal deposits are most prone to accumulate at this location.

FINANCIAL IMPLICATIONS

8. We estimate the capital cost of the project to be \$768.8 million in MOD prices (see paragraph 9 below), made up as follows -

/(a)

¹ A reed-bed system in a wetland comprises a specified type of reed and soil. The dimensions of the bed, height of water and rate of flow are designed so as to remove organic and metal pollutants.

	\$ million	
(a) Site formation works	32.0	
(b) Roadworks	43.0	
(c) Drainage works and concrete bed lining of the WDC	44.0	
(d) Vehicular and pedestrian/cyclist bridges	294.0	
(e) Constructed wetland	125.0	
(f) Landscaping works	24.0	
(g) Environmental monitoring and audit	4.0	
(h) Consultants' fees for	68.0	
(i) construction stage	8.0	
(ii) resident site staff costs	60.0	
(i) Contingencies	63.0	
Sub-total	697.0	(at December 1998 prices)
(j) Provision for price adjustment	71.8	
Total	768.8	(in MOD prices)

Owing to insufficient in-house resources, DTD proposes to employ consultants to supervise the proposed works. A breakdown by man months of the estimate for consultants' fees is at the Enclosure.

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

/1999 - 2000

Year	\$ million (Dec 1998)	Price adjustment factor	\$ million (MOD)
1999 - 2000	45.0	1.02625	46.2
2000 - 2001	160.0	1.06217	169.9
2001 - 2002	257.0	1.09934	282.5
2002 - 2003	180.0	1.13782	204.8
2003 - 2004	40.0	1.17765	47.1
2004 - 2005	15.0	1.21886	18.3
	697.0		768.8

10. 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 1999 to 2005. We will tender the proposed works under a standard remeasurement contract because the works involve extensive earthworks, the quantities 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.

11. We estimate the annually recurrent expenditure to be \$10.66 million.

PUBLIC CONSULTATION

12. We consulted the Traffic and Transport Committee of the Yuen Long District Board on the Final Investigation Report of the TSW further development project on 7 January 1997. Members had no objection to the proposed works.

13. On 23 January 1997, we consulted the Environmental Improvement Committee of the Yuen Long District Board on the findings of the Environmental Impact Assessment (EIA) study in respect of the engineering infrastructure project for TSW further development. Members had no adverse comments on the findings.

14. We gazetted the proposed concrete lining work for a section of the WDC under the Foreshore and Sea-bed (Reclamations) Ordinance on 16 January 1998 and received no objections. The Chief Executive in Council authorized the proposed works on 26 March 1998. We also gazetted the proposed road scheme under the Roads (Works, Use and Compensation) Ordinance on 27 March 1998 and received no objections. The Secretary for Transport authorized the roadworks on 12 June 1998.

ENVIRONMENTAL IMPLICATIONS

15. Under the Environmental Impact Assessment (EIA) Ordinance, Road D3 is a designated project which requires an environmental permit (EP) for construction and operation. The channel lining works for the WDC has been exempted from designation by the virtue of the authorization under the Foreshore and Sea-bed (Reclamations) Ordinance on 26 March 1998.

16. We completed an EIA study in March 1997 to assess the environmental impacts of the construction and operation of the entire engineering project for the TSW further development. On 21 April 1997, the Advisory Council on the Environment (ACE) endorsed the findings and recommendations of the EIA report. As the proposed works will not cause adverse long term environmental impacts, long term mitigation measures are not required. During the construction period, we shall control dust, noise, site run-off and odour impacts to within established standards and guidelines by incorporating and enforcing appropriate environmental control clauses in the contract.

LAND ACQUISITION

17. We have resumed about 0.56 hectare of agricultural land. The land acquisition and clearance will affect one domestic structure with four residents. The Director of Housing will offer the eligible families accommodation in public housing in line with the existing policy. We will charge the cost of land acquisition and clearance, estimated at \$12.5 million, to Head 701 – Land Acquisition.

/BACKGROUND

BACKGROUND INFORMATION

18. We upgraded **561CL** to Category B in June 1997.

19. In February 1998, Finance Committee approved the upgrading of part of **561CL** to Category A as **563CL** "Tin Shui Wai further development - road junction improvement, site formation and main engineering infrastructure" at an estimated cost of \$3,163.2 million in MOD prices. We started the works in July 1998 for completion in phases from August 1999 to end 2001.

20. We engaged consultants in August 1997 to undertake the detailed design for the project under **562CL** "Tin Shui Wai further development - engineering infrastructure and remaining site formation works: consultants' fees and site investigation". The consultants have substantially completed the detailed design and drawings for the remaining works under **561CL**. We plan to start the proposed works in October 1999 for completion in mid 2003.

Housing Bureau
May 1999

561CL - Tin Shui Wai further development - remaining engineering infrastructure and site formation works

Breakdown of the estimate for consultants' fees

Consultants' staff costs			Estimated man months	Average MPS* salary point	Multiplier factor	Estimated fee (\$ million)
(a) Consultants' fees for construction stage						
(i) contract administration	Professional		33	40	2.4	5.0
	Technical		20	16	2.4	1.0
(ii) preparation of as-built drawings	Professional		6	40	2.4	0.9
	Technical		22	16	2.4	1.1
(b) Resident site staff costs	Professional		250	40	1.7	26.7
	Technical		932	16	1.7	33.3
Total consultants' staff costs						68.0

* 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 profit, as the staff will be employed in the consultants' offices. A multiplier factor of 1.7 is applied in the case of site staff supplied by the 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 overall consultancy agreement for the Tin Shui Wai further development. We will negotiate the consultants' fees and resident site staff costs with the consultants after funding approval.

