

For discussion  
on 31 May 2001

PWSC(2001-02)43

## **ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE**

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

**New Territories North Development**

**Civil Engineering - Land development**

**476CL - Formation and servicing of Area 36, Fanling - remaining works**

Members are invited to recommend to Finance  
Committee -

- (a) the upgrading of part of **476CL**, entitled "Road widening and junction improvement works in the Sheung Shui/Fanling area", to Category A at an estimated cost of \$54.1 million in money-of-the-day prices; and
- (b) the retention of the remainder of **476CL** in Category B.

### **PROBLEM**

The existing road network in Sheung Shui/Fanling is inadequate to support the planned housing developments at Area 36, Fanling.

**/PROPOSAL .....**

## PROPOSAL

2. The Director of Territory Development (DTD), with the support of the Secretary for Planning and Lands and the Secretary for Transport, proposes to upgrade part of **476CL** to Category A at an estimated cost of \$54.1 million in money-of-the-day (MOD) prices for road widening and junction improvement works in the Sheung Shui/Fanling area.

## PROJECT SCOPE AND NATURE

3. The scope of **476CL** covers the formation of about 14 hectares (ha) of land and provision of associated infrastructure, including the construction of local distributor roads with drainage and sewerage works, road widening and junction improvement works at Area 36, Fanling. Finance Committee has previously approved the upgrading of parts of **476CL** to Category A (see paragraphs 20 and 21 below).

4. The part of **476CL** we now propose to upgrade to Category A (coloured pink on the site plan at Enclosure 1) comprises –

- (a) junction improvement works and installation of traffic signals to six existing road junctions and two roundabouts in the Sheung Shui/Fanling area;
- (b) widening of three sections of existing roads including -
  - (i) a 360-metre (m) section of Fan Kam Road between Po Kin Road and Fanling Highway from a single 2-lane carriageway to a dual 2-lane carriageway;
  - (ii) a 280-m section of Po Shek Wu Road between Fanling Highway and Choi Yuen Road from a dual 2-lane carriageway to a 3-lane northbound and 2-lane southbound carriageway with central barrier; and
  - (iii) a 190-m section of So Kwun Po Road between Fanling Highway and Pak Wo Road from a dual 2-lane carriageway to a dual 3-lane carriageway;
- (c) relocation of a bus bay and provision of a loading/unloading bay at Choi Yuen Road;

/(d) .....

- (d) extension of five existing pedestrian subways affected by the proposed road widening works; and
- (e) associated drainage and landscaping works.

We plan to start the proposed works in November 2001 for completion in July 2003.

## JUSTIFICATION

5. Area 36, Fanling is earmarked mainly for housing developments which include, inter alia, about 7.1 ha of land for public housing and 2.0 ha of land for a Hong Kong Housing Society (HKHS) public housing scheme. The Director of Housing commenced the first phase of the piling works for the public housing in November 1999. The development will provide about 7 000 flats to accommodate 21 000 persons in phases between November 2003 and February 2005. The HKHS plans to commence the construction works for its housing project in August 2001 to provide about 920 flats for 3 200 persons by October 2004.

6. In January 1999, we completed a traffic impact assessment (TIA) associated with the proposed developments in Area 36. The TIA identified that some junctions and sections of existing roads in the Sheung Shui/Fanling area are currently operating beyond their design capacities. The traffic condition will be further aggravated in 2004 by the additional traffic demand arising from the planned residential developments in Area 36. A summary of the performance of the critical junctions during peak hours in the years 2001, 2004 and 2011 with and without the proposed improvements, is shown at Enclosure 2. To cope with the anticipated increase in traffic demand and to relieve traffic congestion at existing roads, we need to carry out the proposed road widening and junction improvement works as soon as practicable.

## FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the project to be \$54.1 million in MOD prices (see paragraph 8 below), made up as follows –

/(a) .....

		<b>\$ million</b>	
(a)	Roadworks	19.0	
(b)	Retaining structures	10.0	
(c)	Earthworks	3.5	
(d)	Extension of subways	5.0	
(e)	Drainage works	4.0	
(f)	Landscaping works	3.0	
(g)	Consultants' fees for	5.5	
	(i) construction stage	0.7	
	(ii) site staff costs	4.8	
(h)	Contingencies	5.0	
	Sub-total	55.0	(in September 2000 prices)
(i)	Provision for price adjustment	(0.9)	
	Total	54.1	(in MOD prices)

Due 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 the consultants' fees is at Enclosure 3.

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

<b>Year</b>	<b>\$ million (Sept 2000)</b>	<b>Price Adjustment factor</b>	<b>\$ million (MOD)</b>
2001 - 2002	5.0	0.98000	4.9
2002 - 2003	35.5	0.97976	34.8

/2003 - 2004 .....

2003 - 2004	11.5	0.98759	11.4
2004 - 2005	3.0	0.99549	3.0
	<hr/>		<hr/>
	55.0		54.1
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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 2001 to 2005. We will tender the proposed works under a fixed-price lump-sum contract because we can clearly define the scope of the majority of the works in advance. The contract will not provide for price adjustments because the contract period will not exceed 21 months.

10. We estimate the annually recurrent expenditure arising from this project to be \$420,000.

## **PUBLIC CONSULTATION**

11. We consulted the Traffic and Transport Committee (T&TC) of the then North Provisional District Board on the proposed works on 21 September 1998. Members of the T&TC supported the proposal.

12. We gazetted the proposed road widening and junction improvement works under the Roads (Works, Use and Compensation) Ordinance on 8 September 2000 and received no objections. The Secretary for Transport authorised the proposed roadworks on 22 December 2000.

13. We circulated an information paper on this project to the LegCo Panel on Planning, Lands and Works in April 2001. Members have no comments on the proposed works.

## **ENVIRONMENTAL IMPLICATIONS**

14. We completed a Preliminary Environmental Review (PER) in January 2001. The PER concluded that the project would not have long term adverse environmental implications. As for the short term construction impacts, we will control noise, dust and site run-off to within established standards and guidelines by incorporating appropriate environmental pollution control clauses in the works contract.

15. The project will affect 700 roadside trees of which 320 will be felled and 380 will be transplanted. To compensate for the loss of the felled trees, we will plant about 450 trees using mainly native species in roadside planting. As regards the landscaping works, we will reprovide about 9 200 square metres of amenity area along both sides of the affected roads. We will use hydroseeding to protect formed slopes and plant trees on the slopes as appropriate.

16. At the planning and design stages, we have designed the levels of roads and landscaping areas to minimize the generation of construction and demolition (C&D) materials. We estimate that the project will generate about 34 000 cubic metres (m<sup>3</sup>) of C&D materials. Of these, about 26 000 m<sup>3</sup> (76%) will be reused on site, 7 500 m<sup>3</sup> (22%) will be reused as fill in public filling areas and 500 m<sup>3</sup> (2%) will be disposed of at landfills.

17. We will require the contractor to submit for approval a waste management plan with appropriate mitigation measures, including the allocation of an area for waste segregation. We will ensure that the day-to-day operations on site comply with the approved plan. We will also require the contractor to reuse the excavated material on site as filling material as far as possible so as to minimize the disposal of public fill to public filling areas. To further minimize the generation of C&D materials, we will encourage the contractor to use non-timber materials for formwork, hoarding, and other temporary works. We will control the disposal of public fill and C&D waste to designated public filling facility and landfills respectively through a trip ticket system. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

## LAND ACQUISITION

18. The proposed works do not require any land acquisition.

## BACKGROUND INFORMATION

19. We upgraded **476CL** to Category B in September 1996.

20. In November 1998, Finance Committee (FC) approved the upgrading of part of **476CL** to Category A as **651CL** "Formation and servicing of Area 36, Fanling, phase 1" at an estimated cost of \$89.7 million in MOD prices for the formation and servicing in the southern part of Area 36 (coloured blue on the site plan at Enclosure 1). We commenced works in March 1999 and completed the site formation in October 2000.

21. In April 2000, FC approved the upgrading of another part of **476CL** to Category A as **670CL** “Formation and servicing of Area 36, Fanling, phase 2” at an estimated cost of \$62.5 million in MOD prices for the formation and servicing of the eastern part of Area 36 (coloured yellow on the site plan at Enclosure 1). We commenced works in August 2000 for completion in May 2002.

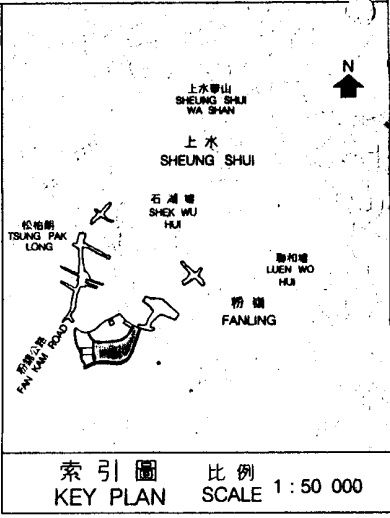
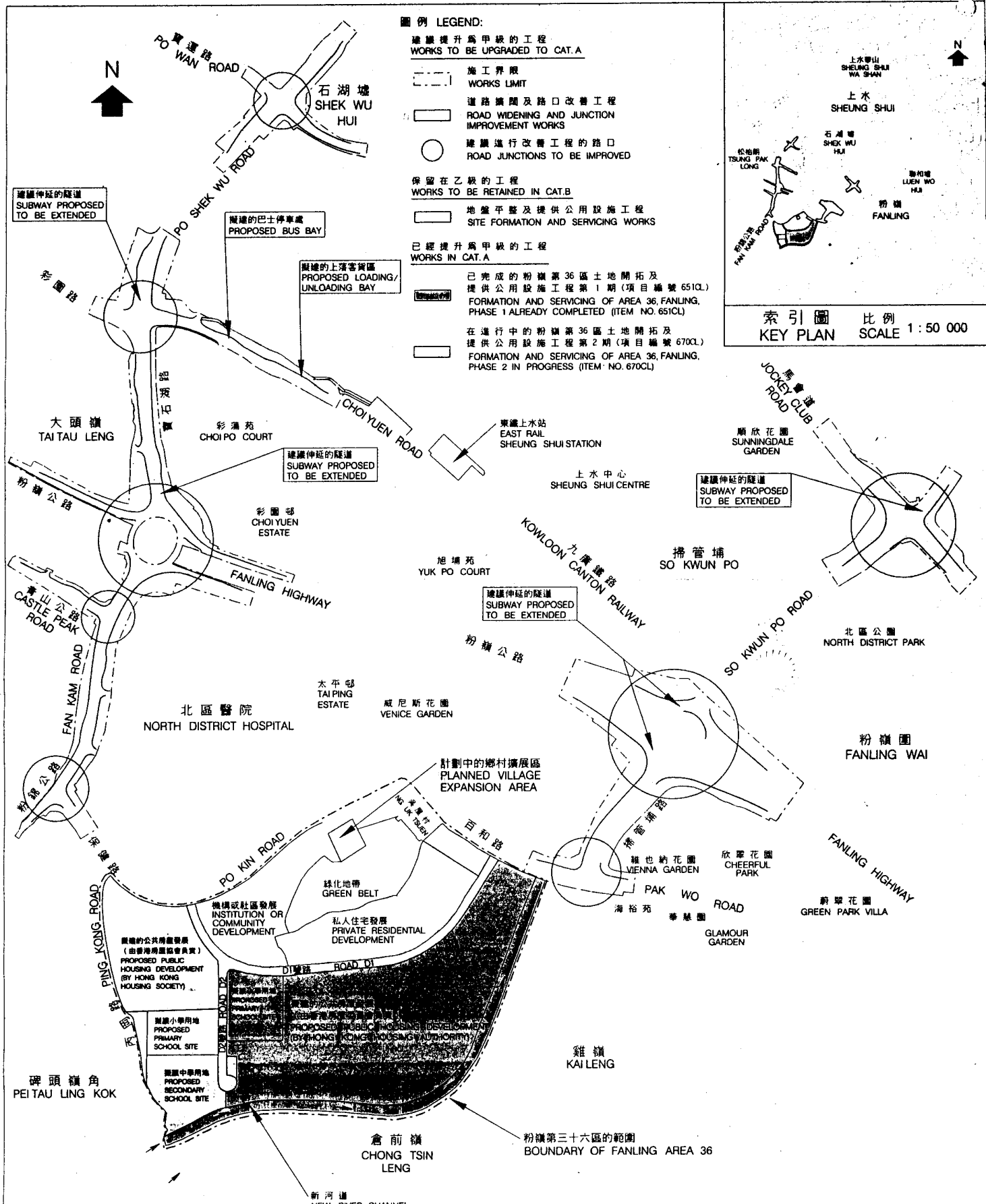
22. In February 2000, we engaged consultants to undertake detailed design and investigations for the proposed road widening and junction improvement works. We charged the cost of \$1.6 million to the block allocation **Subhead 7100CX** “New towns and urban area works, studies and investigations for items in Category D of the Public Works Programme”. The consultants have completed the detailed design and drawings.

23. We estimate that the proposed works will create some 75 jobs comprising 20 professional/technical staff and 55 labourers totalling 1 350 man-months.

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Planning and Lands Bureau  
May 2001

[CL476-04.DOC]



- 圖例 LEGEND:**
- 建議提升為甲級的工程  
WORKS TO BE UPGRADED TO CAT. A**
- 施工界限 WORKS LIMIT
  - 道路擴闊及路口改善工程 ROAD WIDENING AND JUNCTION IMPROVEMENT WORKS
  - 建議進行改善工程之路口 ROAD JUNCTIONS TO BE IMPROVED
- 保留在乙級的工程  
WORKS TO BE RETAINED IN CAT. B**
- 地盤平整及提供公用設施工程 SITE FORMATION AND SERVICING WORKS
- 已經提升為甲級的工程  
WORKS IN CAT. A**
- 已完成的粉嶺第36區土地開拓及提供公用設施工程第1期(項目編號 651CL) FORMATION AND SERVICING OF AREA 36, FANLING, PHASE 1 (ALREADY COMPLETED (ITEM NO. 651CL))
  - 在進行中的粉嶺第36區土地開拓及提供公用設施工程第2期(項目編號 670CL) FORMATION AND SERVICING OF AREA 36, FANLING, PHASE 2 IN PROGRESS (ITEM NO. 670CL)

二〇〇一至二〇〇二年度工務小組委員會文件 P.W.S.C. SUBMISSION 2001/2002		修訂 REVISION	
圖則名稱 drawing title	繪圖 drawn	簽署 initial	日期 date
粉嶺第36區土地開拓及提供公用設施工程 - 餘下工程 FORMATION AND SERVICING OF AREA 36, FANLING - REMAINING WORKS	C CHUN	SIGNED	02.02.01
	核對 checked	簽署 initial	日期 date
	S F CHAN	SIGNED	28.02.01
圖則編號 drawing no.	核准 approved	簽署 initial	日期 date
NTN 2091A	C L NG	SIGNED	28.02.01
辦事處 office 新界北拓展處 NEW TERRITORIES NORTH DEVELOPMENT OFFICE		拓展署 TERRITORY DEVELOPMENT DEPARTMENT	

附件 1 ENCLOSURE 1



## Enclosure 2 to PWSC(2001-02)43

Junction	Junction performance in year				
	Without junction improvement			With junction improvement	
	2001	2004	2011	2004	2011
Po Shek Wu Road/ Choi Yuen Road signalised junction <sup>1</sup>	-23%	-35%	-43%	10%	10%
Po Shek Wu Road/ Po Wan Road signalised junction	-28%	-44%	-34%	-6% <sup>2</sup>	3%
So Kwun Po Road/ Jockey Club Road signalised junction	-16%	-21%	-34%	32%	13%
Fanling Highway/ So Kwun Po Road roundabout <sup>3</sup>	0.91	1.04	2.87	0.59	0.74
So Kwun Po Road/ Pak Wo Road signalised junction	-2%	-19%	-54%	74%	19%
Fan Kam Road/ Po Kin Road priority junction <sup>3</sup> (to be converted to a signalised junction)	0.68	1.08	1.63	30%	13%
Fan Kam Road /Castle Peak Road priority junction (to be converted to a signalised junction)	1.34	1.5	6.45	31%	6%
Fanling Highway/ Po Shek Wu Road/Fan Kam Road roundabout	1.08	1.55	1.53	0.84	0.83

<sup>1</sup> The performance of a signalised road junction is indicated by its reserve capacity (RC). An RC equals to or greater than 0 means that the road junction has sufficient capacity to cope with the volume of vehicular traffic under consideration and the resultant traffic will flow smoothly. An RC below 0 indicates that the junction is overloaded, thus resulting in traffic queues and longer delay time.

<sup>2</sup> Full junction improvement cannot be implemented due to site restrictions at this junction which will be slightly overloaded in 2004. However, the traffic condition will improve after 2010 upon the completion of Fanling Bypass planned under Kwu Tung North and Fanling North development.

<sup>3</sup> The performance of a roundabout and a priority junction is indicated by the design flow/capacity (DFC) ratio. A DFC ratio equals to or less than 1.0 means that the road has sufficient capacity to cope with the volume of vehicular traffic under consideration and the resultant traffic will flow smoothly. A DFC ratio above 1.0 indicates the onset of congestion; above 1.2 indicates more serious congestion with traffic speeds progressively deteriorating with further increases in traffic.

**476CL – Formation and servicing of Area 36, Fanling – remaining works**

**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	3.6	38	2.4	0.50
		Technical	2.0	14	2.4	0.10
(ii)	preparation of as-built drawings	Professional	0.4	38	2.4	0.05
		Technical	1.0	14	2.4	0.05
(b)	Resident site staff costs	Professional	22.5	38	1.7	2.20
		Technical	80.0	14	1.7	2.60
Total consultants' staff costs						5.50

\* 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 to the average MPS point in the case of resident site staff supplied by the consultants. (At 1.4.2000, MPS pt. 38 = \$57,525 p.m. and MPS pt. 14 = \$19,055 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 an existing consultancy agreement for the development of Fanling/Sheung Shui New Town.