For discussion
on 6 June 2001

PWSC(2001-02)47

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 - HIGHWAYS
Transport - Roads
40TR - West Rail (phase 1) - essential public infrastructure works for the Kam Tin section - remaining works

Members are invited to recommend to Finance Committee the upgrading of **40TR**, entitled "West Rail (phase 1) - essential public infrastructure works for the Kam Tin section – remaining works", to Category A at an estimated cost of $219.1 million in money-of-the-day prices.

PROBLEM

Kam Tin Road (section runs through the Kam Tin town centre) and Kam Sheung Road (section branches off from the above Kam Tin Road section) do not have sufficient capacity to cope with the traffic demand by 2003 upon the commissioning of the public transport interchange facilities for the Kam Sheung Road (KSR) Station of the Kowloon-Canton Railway Corporation (KCRC) West Rail (phase 1).

PROPOSAL

2. The Director of Highways, with the support of the Secretary for Transport, proposes to upgrade **40TR** to Category A at an estimated cost of $219.1 million in money-of-the-day (MOD) prices for the construction of the planned essential public infrastructure works (EPIW) for the KSR Station.

/**PROJECT** .....

PROJECT SCOPE AND NATURE

3. The proposed scope of **40TR** comprises -

(a) construction of an 850-metre long dual two-lane carriageway road linking the KSR Station with Kam Sheung Road, Kam Tin Road and the eastern roundabout of the future Kam Tin Bypass[1];

(b) construction of two vehicular bridge sections of 30 metres and 50 metres in length respectively on the above road;

(c) construction of a 40-metre long, three-metre wide footbridge over the new road;

(d) provision of pedestrian and cyclist facilities, including 3.5-metre wide footpaths and a three-metre wide cycle track alongside the new road;

(e) associated roadworks, including drainage, slopes, retaining structures and landscaping works;

(f) provision of noise barriers about 610 metres in length ranging from 2.5 metres to 5.5 metres high; and

(g) provision of indirect technical remedies, including window insulation and air-conditioners for Kam Kwong Kindergarten, Lutheran Kam Sheung Church and a village house of Ng Ka Tsuen with facades facing the new road.

----- A site plan is at the Enclosure.

4. We plan to commence construction of **40TR** in January 2002 for completion in mid 2003 to tie in with the commissioning of the KSR Station.

/**JUSTIFICATION** .....

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[1] Finance Committee approved the upgrading of **246TH** "Kam Tin Bypass" to Category A on 9 February 2001. The construction works will start in June 2001 for completion in December 2003.

JUSTIFICATION

5. In December 1997, KCRC completed the West Rail Northern Area Technical Study and West Rail Depot Technical Study which established the need to provide a package of EPIW to tie in with the commissioning of the KSR Station of the West Rail (phase 1) in 2003. The most common EPIW elements are public transport interchanges and associated access roads.

6. Both sections of the Kam Tin Road and Kam Sheung Road in question are single two-lane carriageways. The Kam Tin Road section, which will be connected with the Kam Tin Bypass upon its completion in 2003, will serve as a rural road for east-west traffic movements through Kam Tin town centre. The Kam Sheung Road section is serving as a rural road for north-south traffic movements through the southern part of Kam Tin. We anticipate that these two road sections will become overloaded when the public transport interchange adjacent to the KSR Station commences operation in 2003, coupled with the increase in population[2] in the areas of Kam Tin South, Shek Kong and Pat Heung. We therefore need to build a dual two-lane carriageway to connect the public transport interchange facilities with Kam Sheung Road, Kam Tin Road and the eastern roundabout of Kam Tin Bypass. Upon its completion, the proposed road will provide a direct and convenient access route for the public from the areas of Kam Tin South, Shek Kong and Pat Heung to the KSR Station. In addition, by year 2003, the proposed road together with Kam Tin Bypass and Stage 1 widening of Kam Tin Road[3] from Au Tau to the west of Kam Tin town centre will form a district distributor network to cope with the future traffic generated from Kam Tin South, Shek Kong and Pat Heung.

7. The existing traffic conditions, projected design-flow-capacity ratio (DFC)[4] and volume/capacity (V/C)[5] ratio of Kam Tin Road (section between Kam Sheung Road and western roundabout of Kam Tin Bypass) and Kam Sheung Road (section through the southern part of Kam Tin), with and without the proposed road, are as follows -

/Road .....

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[2] The population in Kam Tin South, Shek Kong and Pat Heung is projected to grow from 30 700 in 1996 to 57 070 in 2011.

[3] **560TH** "Improvement to Kam Tin Road, Stage 1" started construction in May 1999 for completion in late 2001.

[4] DFC (design-flow-capacity) ratio is a design parameter which measures the degree of saturation of traffic at a priority junction. A DFC ratio not greater than 0.85 means that the road junction has sufficient capacity to cope with the volume of vehicular traffic under consideration. A DFC ratio above 1.0 indicates continual queue length.

[5] V/C (volume/capacity) ratio is an indicator which reflects a road's capacity to cope with vehicular traffic flows. A V/C ratio not greater than 1.0 means that the road has sufficient capacity to cope with the volume of vehicular traffic under consideration. A V/C ratio above 1.0 indicates the onset of mild congestion and a ratio above 1.2 indicates more serious congestion with traffic speeds progressively deteriorating with further increase in traffic.

Year / Road/ Road Junction	1999		2003		2011	
	Without proposed road	**With proposed road**	**Without proposed road**	**With proposed road**	**Without proposed road**	**With proposed road**
Road junction of Kam Tin Road/Kam Sheung Road (DFC ratio)	0.70	-	1.38	0.50	1.89	0.86
Kam Tin Road (section between Kam Sheung Road and western roundabout of Kam Tin Bypass) (V/C ratio)	1.51	-	1.42	0.74	1.67	1.08
Kam Sheung Road through Southern part of Kam Tin (V/C ratio)	0.62	-	1.06	0.78	1.39	0.99

8. The existing pedestrian access from Ng Ka Tsuen to Po Tei Road will be permanently closed following construction of the proposed road. We therefore intend to build a footbridge over the road to provide safe and convenient pedestrian access for local villagers to Po Tei Road. We will also provide pedestrian and cyclist facilities, including footpaths and a cycle track for local villagers who will travel to and from the KSR Station on foot and by bicycle, respectively.

9. The predicted traffic flow on the proposed road will generate traffic noise above the levels stipulated in the Hong Kong Planning Standards and Guidelines, and direct and indirect technical remedies will be required to alleviate the adverse noise impact. We propose to install noise barriers at appropriate locations along the proposed road. At locations where the provision of noise barriers is not technically feasible, we propose to provide indirect technical remedies in the form of window insulation and air-conditioners at certain affected premises.

10. We intend to entrust **40TR** to KCRC for implementation in conjunction with the West Rail (phase 1) project to improve the interface and

/co-ordination .....

co-ordination between the railway project and the EPIW and to enable simultaneous completion so that the facilities are available to the public when the railway line commences operation. Delay in the completion of the proposed road under **40TR** beyond 2003 will severely impact on the traffic flows along Kam Tin Road, Kam Sheung Road and the northern access road to the KSR Station. The entrustment of the works to KCRC would also avoid the need to resume further private land for use as works areas, in the order of 4 000 square metres with an estimated acquisition and clearance cost of $18 million (in September 2000 prices).

FINANCIAL IMPLICATIONS

11. We estimate the cost of this project to be $219.1 million in MOD prices (see paragraph 12 below), made up as follows –

			$million	
(a)	Roadworks, associated vehicular crossings, footpaths, cycle track and drainage		135.0	
(b)	Footbridge		23.8	
(c)	Environmental mitigation measures		9.6	
	(i) Noise barriers	8.7		
	(ii) Indirect technical remedies	0.9		
(d)	Landscaping works		5.5	
(e)	On-cost[6] payable to KCRC		28.7	
(f)	Contingencies		20.2	
	Sub-total		222.8	(in September 2000 prices)
(g)	Provision for price adjustment		(3.7)	
	Total		219.1	(in MOD prices)

/12. .....

[6] An on-cost at 16.5% of the project base cost (i.e. item (a), (b), (c) and (d) in paragraph 11) will be payable to KCRC for undertaking the technical studies, design and construction supervision of the EPIW under **40TR**.

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

Year	$ million (Sep 2000)	Price Adjustment Factor	$ million (MOD)
2001 – 2002	6.3	0.98000	6.2
2002 – 2003	137.8	0.97976	135.0
2003 – 2004	67.3	0.98759	66.5
2004 – 2005	9.3	0.99549	9.3
2005 – 2006	2.1	1.00346	2.1
	222.8		219.1

13. We have derived the MOD estimate on the basis of Government's latest forecast of trend labour and construction prices over the period 2001 to 2006. The proposed works under **40TR** will be constructed under a fixed-price lump-sum contract to be awarded by KCRC.

14. We estimate the annual recurrent expenditure arising from the proposed works to be $1.2 million.

PUBLIC CONSULTATION

15. We consulted the West Rail Monitoring Group of the Yuen Long District Council on the proposed EPIW under **40TR** on 26 May 2000 and 6 April 2001. Members of the District Council supported the project at the meeting on 26 May 2000 and raised no further comment at the meeting held on 6 April 2001. We also consulted the Kam Tin Rural Committee on 29 February 2000 and the Pat Heung Rural Committee on 27 April 2000 on the proposed EPIW prior to gazetting the works under the Roads (Works, Use and Compensation) Ordinance (the Ordinance). Members of the Rural Committees supported the project in principle.

16. We gazetted the EPIW under the Ordinance on 9 June 2000 and received nine objections. One objector withdrew his objection with conditions, but the other eight objectors maintained their objections. Details of the objections are as follows -

/(a) .....

(a) One objector withdrew his objection on the condition that the Administration would relocate an affected boundary fence and water pipe before the commencement of the proposed roadworks.

(b) Five objectors objected to the resumption of their land for the proposed roadworks. Of these -

(i) Four objectors demanded higher land compensation. We explained to them that the quantum of compensation was determined in accordance with the prevailing land administration policy. Of these four objectors, two requested the Administration to move the proposed road alignment to avoid their land and one requested the Administration to resume the remaining portion of his land not affected by the roadworks. We explained that the proposed road alignment was the most desirable alignment taking into account various factors including road safety and site constraints. We also explained that the Administration could only resume the land required for the purposes of or incidental to the proposed roadworks; and

(ii) The fifth objector requested a reduction in the area of land to be resumed and the granting of adjacent Government land as compensation. We advised him that the land to be resumed was the minimum requirement and under the current policy, land resumed would only be compensated in monetary terms.

(c) Three objectors from Ng Ka Tsuen, a non-indigenous village, were concerned that the proposed roadworks would cause environmental nuisance to the village and involve the resumption of land currently used by villagers for recreational and Lunar New Year festivities purposes. There would also be some Fung Shui impact on the village. We explained that the approved EIA report concluded that the traffic noise impact arising from the proposed roadworks could be reduced with the implementation of direct and indirect technical measures. Soft landscaping would be provided along the proposed road to mitigate the visual impact. We also assisted the objectors in identifying a replacement site for recreational and Lunar New Year

festivities purposes. On Fung Shui impact, we explained that Ng Ka Tsuen is not eligible for ex-gratia payment for Tun Fu ceremonies under the prevailing land policy as it is not an indigenous village.

17. Having considered the objections to the road scheme, the Chief Executive-in-Council authorised the proposed EPIW under **40TR** and also endorsed the proposed indirect technical remedies for the affected premises. The notice of authorization was gazetted on 27 April 2001.

18. We consulted the LegCo Panel on Transport on the proposed road under **40TR** on 7 May 2001. Members requested the Administration to provide further information on the policy relating to the resumption of land contiguous to a project, the re-housing policy and the re-housing arrangements for persons affected by the proposed road. We issued a supplementary information note explaining the land resumption and re-housing policy for public works projects and the re-housing arrangements for persons affected by the proposed road on 31 May 2001.

ENVIRONMENTAL IMPLICATIONS

19. The proposed EPIW is a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance. An environmental permit is required for the construction and operation of the EPIW. We completed the EIA for the proposed roadworks as required under the EIA Ordinance. The Advisory Council on the Environment endorsed the EIA report on 29 November 1999. The Director of Environmental Protection approved the EIA report on 28 December 1999 and issued the Environmental Permit on 9 August 2000 under the EIA Ordinance. We will implement all recommended mitigation measures identified in the approved EIA report and will comply with the conditions stipulated in the Environmental Permit issued for the proposed road works.

20. The approved EIA report concluded that operational road traffic noise is the key environmental concern for the proposed road works. The findings indicate that by 2018, some noise sensitive receivers along the proposed road will be exposed to traffic noise exceeding the established standards and criteria. The EIA report recommended nine sections of noise barriers at appropriate locations along the proposed road wherever feasible to alleviate the noise impact. The noise barriers will bring traffic noise levels to within established standards with a maximum noise reduction of 7dB(A) at certain locations. As the construction of the noise barriers at certain locations and the use of noise reducing road surfacing material have been found not practicable, we need to provide window insulation and air-conditioners to affected sensitive

/receivers .....

receivers recommended in the EIA Report. On the basis of the eligibility criteria, Kam Kwong Kindergarten, Lutheran Kam Sheung Church and a village house of Ng Ka Tsuen are eligible for insulation and air-conditioning. According to the EIA study, the provision of improved windows and air-conditioners is a last-resort measure to redress the impact of traffic noise on the affected sensitive receivers. We estimate the cost of implementing the required environmental mitigation measures to be $9.6 million. We have included this cost in the project estimate.

21. We will implement standard pollution control measures to mitigate the short-term construction impacts of the proposed road works identified in the EIA report. We have included in the project estimate the cost to implement suitable mitigation measures during construction. To ensure timely and effective implementation of the environmental pollution control measures, we will formulate and implement an Environmental Monitoring and Audit (EM&A) programme. We estimate the cost of implementing the EM&A programme to be $2.0 million. We have included this cost in the project estimate.

22. During the planning and design stages, we have considered ways of reducing the generation of construction and demolition (C&D) materials as much as possible. These include accurate quantity estimation of construction materials to avoid over-ordering and waste materials, maximizing the use of standard formwork panels, especially steel formworks, to achieve a high level of re-use. We will require the contractor to segregate materials on-site into different categories to facilitate reuse and recycling. We shall require the contractors to submit Waste Management Plans (WMPs) for approval before the commencement of construction of the project. These will set out appropriate mitigation measures including the allocation of an area for waste segregation. We shall ensure that the day-to-day operations on site comply with the approved WMPs. We shall control the disposal of C&D materials in accordance with the approved WMPs. We estimate that the project will produce about 80 000 cubic metres of C&D materials. Of these, about 35 000 cubic metres (44%) of inert C&D materials will be re-used on site, about 29 000 cubic metres (36%) of C&D materials to be re-cycled will be removed from the site by waste recycling operators and 16 000 cubic metres (20%) of C&D waste will be disposed of at landfills. We shall separate inert C&D materials from C&D waste for reuse on site and sort the C&D waste by category to facilitate recycling in order to reduce the generation of waste. The recycled materials shall include paper/cardboard, timber and metal. To further minimise the generation of C&D materials, we will encourage the contractor to use non-timber formwork, hoarding and other temporary works. We shall control the disposal of C&D materials to landfills through a trip ticket system. We shall record the disposal, reuse and recycling of C&D materials for monitoring and auditing purposes.

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23. We have assessed the impact on air quality of the construction and operational phases of the proposed road. Our assessment shows that with the stipulation of appropriate dust suppression measures, the air quality during the construction phase can be contained within the Hong Kong Air Quality Objective (AQO). The AQO can also be met during the operational phase and the road traffic exhausts will not produce unacceptable impacts on the residents in the vicinity of the proposed road.

LAND ACQUISITION

24. We need to resume about 29 452 square metres of private land. The land acquisition and clearance will affect 18 families consisting of 72 persons. The Director of Housing will arrange rehousing for the affected eligible families in accordance with the prevailing rehousing policy.

25. The estimated cost of acquisition and clearance of the land occupied by the proposed works is about $130 million (in September 2000 prices). KCRC will bear this cost according to the West Rail Project Agreement between the Administration and KCRC.

BACKGROUND INFORMATION

26. On 27 February 1998, the Finance Committee (FC) approved an equity injection of $29 billion from the Capital Investment Fund to KCRC for construction of the West Rail (phase 1). We also informed FC at the time that the Government would need to carry out EPIW in the order of $3,135 million (in December 1997 prices) to enable West Rail to open to the public.

27. Following authorization by the Chief Executive-in-Council in September 1998, KCRC commenced construction of West Rail (phase 1) which will provide, by late 2003, a domestic passenger railway line serving Tuen Mun, Yuen Long, Tin Shui Wai, Kam Tin, Tsuen Wan West, Mei Foo and Sham Shui Po.

28. The Kam Tin Section of West Rail (phase 1) includes the construction of the West Rail Depot, the KSR Station and a section of railway tracks connecting the Depot and the KSR Station.

29. We included **40TR** in Category B of the Public Works Programme in September 1998. On 11 June 1999, FC approved the upgrading of part of this project to Category A as **43TR**, entitled "West Rail (phase 1) - essential public infrastructure works for Kam Tin section". The approved project estimate is $546.9 million in MOD prices. The scope of **43TR** comprises mainly the construction of public transport interchange facilities, roads, footpaths, and cycle tracks around the KSR Station and an access road between the KSR Station and the West Rail Depot. We retained the remaining part of **40TR** in Category B pending the finalization of the design of the proposed road.

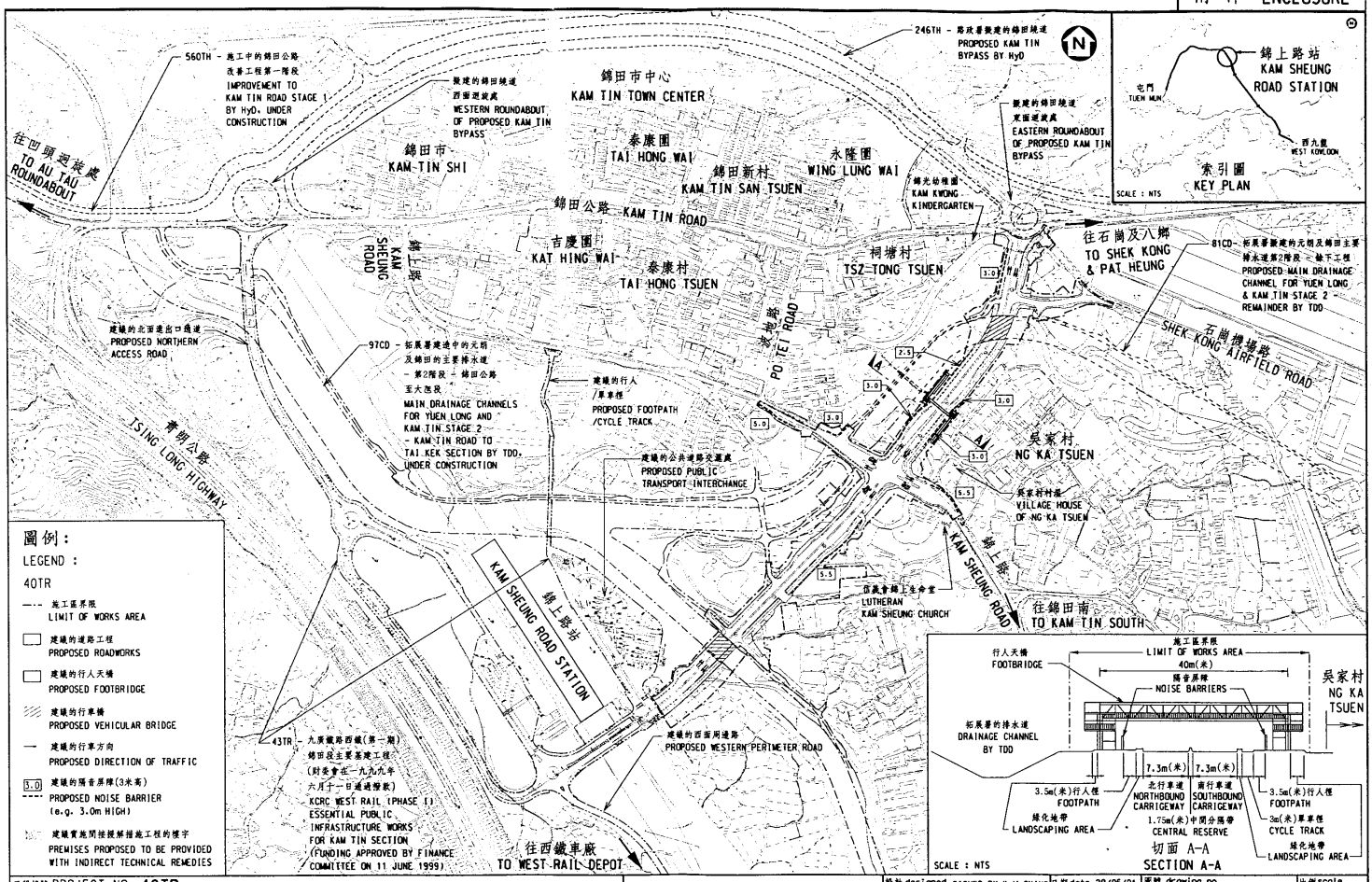
30. We have entrusted to KCRC the construction of other EPIW under **43TR** for implementation in conjunction with the railway project in order to improve the interface and co-ordination between the construction of the railway project and the EPIW and to enable simultaneous completion so that the facilities are available to the public upon the commissioning of the railway line.

31. As regards the EPIW for other sections, FC approved the upgrading of projects to Category A for Tsuen Wan section (**42TR**) on 12 March 1999, Sham Shui Po section (**39TR**) on 11 June 1999, Yuen Long section (**45TR**) and Tuen Mun section (**38TR**) on 2 July 1999, and remaining works of Yuen Long section (**37TR**) on 21 January 2000. The above projects have been entrusted to KCRC for implementation in conjunction with the West Rail (phase 1) project.

32. We estimate that the project will create some 215 jobs totalling 3 850 man-months, comprising 40 professional/technical staff and 175 labourers.

Transport Bureau
May 2001

附件 ENCLOSURE



工程編號 PROJECT NO. 40TR

西鐵(第一期) - 錦田段主要基建工程 - 餘下工程

WEST RAIL (PHASE I) - ESSENTIAL PUBLIC INFRASTRUCTURE WORKS FOR KAM TIN SECTION - REMAINING WORKS

ORIGINAL SIGNED BY ERIC K.W.FUNG — 29/05/2001

總工程師/西鐵 CHIEF ENGINEER/WR — 日期 DATE

設計 designed	SIGNED BY K M CHING	日期 date 29/05/01
繪圖 drawn	SIGNED BY Y Y WOO	日期 date 29/05/01
核對 checked	SIGNED BY T M CHUNG	日期 date 29/05/01
核准 approved	SIGNED BY K M CHING	日期 date 29/05/01

辦事處 office 鐵路拓展處 RAILWAY DEVELOPMENT OFFICE

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比例 scale 1 : 5 000 (@ A3 SIZE)

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