

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 - HIGHWAYS Transport - Roads 246TH - Kam Tin Bypass

Members are invited to recommend to Finance Committee the upgrading of **246TH** to Category A at an estimated cost of \$290.8 million in money-of-the-day prices for the construction of a new Kam Tin Bypass which will be connected to the existing Kam Tin Road at the western and eastern ends of Kam Tin town centre.

PROBLEM

The section of Kam Tin Road through Kam Tin town centre does not have sufficient capacity to cope with the future growth in traffic demand arising from the increase in population in the North West New Territories. The opening of new roads associated with the West Rail (Phase I) project will further increase the traffic along Kam Tin Road.

PROPOSAL

2. The Director of Highways, with the support of the Secretary for Transport, proposes to upgrade **246TH** to Category A at an estimated cost of \$290.8 million, in money-of-the-day (MOD) prices, for the construction of a new Kam Tin Bypass which will be connected to the existing Kam Tin Road at the western and eastern ends of Kam Tin town centre.

/ **PROJECT**

PROJECT SCOPE AND NATURE

3. The scope of works for **246TH** includes -
- (a) construction of a 1.3-kilometre long dual two-lane carriageway;
 - (b) provision of pedestrian and cyclist facilities, including a footpath and a cycle track along the north side of the Bypass, construction of two pedestrian/cyclist subways and two traffic signal controlled pedestrian crossings;
 - (c) construction of two roundabouts at the junctions of the Bypass and the existing Kam Tin Road;
 - (d) construction of two traffic signal controlled road junctions at the intersections of the Bypass with Kong Tai Road and the access road to Kam Hing Wai;
 - (e) provision of some 1.4 kilometres of noise barriers as well as low noise road surfacing;
 - (f) reprovisioning of 1.3 hectares of marshland to compensate for the loss of habitat of the Painted Snipe, a local rare bird species; and
 - (g) construction of lay-bys, fire hydrant watermains, retaining walls and associated drainage, slope and landscaping works.

----- A site plan is at Enclosure 1.

4. We completed the detailed design and tender documents for **246TH** in November 2000. We plan to start the works in June 2001 for completion in December 2003, so as to tie in with the commissioning of the West Rail (Phase 1) project by end 2003.

JUSTIFICATION

5. The existing Kam Tin Road from Au Tau Roundabout to Route Twisk is a single two-lane carriageway serving as a main route for east-west traffic movements through the central part of the New Territories. We anticipate that the

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increase in population¹ and planned developments at Kam Tin and Au Tau together with the commissioning of new roads associated with the West Rail (Phase I) project in 2003 will generate substantial traffic and overload the Kam Tin Road. The road needs to be widened to a dual two-lane carriageway.

6. The Stage 1 widening of Kam Tin Road from Au Tau Roundabout to the west of the Kam Tin town centre is already under construction for completion in late 2001. The Stage 2 widening of Kam Tin Road from the east of Kam Tin town centre to Route Twisk is also under design. Construction is scheduled to commence in early 2003 for completion at end 2005.

7. The section of Kam Tin Road running through the town centre is now operating beyond capacity at a volume to capacity (V/C) ratio² of over 1.2 during peak hours. Following the commissioning of Stage 1 and Stage 2 widening of Kam Tin Road, traffic congestion along this section of Kam Tin Road will increase. We considered widening the existing alignment but considered this approach not viable because of serious disruption to existing community, residential and commercial uses in the town centre and the adverse environmental impacts involved. The provision of a new Kam Tin Bypass to the north of the town centre is the preferred option. The new Bypass, coupled with the Stage 1 and Stage 2 widening of Kam Tin Road, will form a continuous dual two-lane carriageway between Au Tau and Route Twisk/Lam Kam Road. The Town Centre section of Kam Tin Road will then serve as a local rural road. The actual and projected V/C ratios of this section of Kam Tin Road with and without the proposed Bypass are indicated below –

**V/C ratio of Kam Tin Road through
Kam Tin Town Centre**

	Year 1999	Year 2003	Year 2011
with Kam Tin Bypass	-	0.23	0.50
without Kam Tin Bypass	1.20	1.33	2.00

8. Two roundabouts will be constructed at both ends of the Bypass to connect the existing Kam Tin Road with other new roads associated with the West

/ Rail

¹ The population in the North West New Territories is projected to grow from 0.83 million in 1996 to 1.43 million in 2011.

² A V/C (volume to capacity) 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.

Rail (Phase I) project. To cater for vehicular access to Kam Hing Wai and other peripheral villages to the north of the Bypass near its eastern end, two traffic signal controlled road junctions will also be constructed.

9. To enhance the safety of cyclists and pedestrians, a footpath and a cycle track will be provided along the north side of the Bypass. Two pedestrian/cyclist subways and two traffic signal controlled pedestrian crossings will also be provided.

10. Since the proposed Bypass will subject some residents to noise levels higher than the prescribed limits in established standards and guidelines, we will install noise barriers some 1.4 kilometres in length and one to eight metres in height along both sides of the Bypass. We will also apply noise-reducing road surfacing along the full length of the Bypass. To compensate for the loss of habitat for the Painted Snipe, a local rare bird species, we will also re-provision 1.3 hectares of marshland under this project.

FINANCIAL IMPLICATIONS

11. We estimate the capital cost of this project to be \$290.8 million in MOD prices made up as follows -

	\$million
(a) Roadworks, associated footpaths and cycle track	86.1
(b) Pedestrian/cyclist subways	36.6
(c) Drainage works and fire hydrant watermains	38.8
(d) Environmental mitigation measures	49.9
(i) noise barriers	27.0
(ii) noise-reducing road surfacing	7.9
(iii) re-provisioning of marshland	15.0
(e) Landscaping works	7.2

/ (f)

	\$million	
(f) Consultants' fees	29.6	
(i) construction stage	2.1	
(ii) site staff costs (including EM&A ³ programme)	27.5	
(g) Contingencies	21.7	
Sub-total	269.9	(at September 2000 prices)
(h) Provision for price adjustment	20.9	
Total	290.8	(in MOD prices)

----- A breakdown by man-months of the estimates for consultants' fees is at Enclosure 2.

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

Year	\$ million (Sept 2000)	Price Adjustment Factor	\$ million (MOD)
2001 – 2002	29.4	1.02550	30.1
2002 – 2003	77.1	1.05627	81.4
2003 – 2004	117.8	1.08795	128.2
2004 – 2005	45.6	1.12059	51.1
	<u>269.9</u>		<u>290.8</u>

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³ We will engage consultants to implement an Environmental Monitoring and Audit (EM&A) programme at an estimated cost of \$1.5 million to ensure timely and effective implementation of the recommended mitigation measures.

13. We have derived the MOD estimates on the basis of the Government's forecast of trend labour and construction prices for the period 2001 to 2005. We will tender the proposed works on a remeasurement contract basis to cater for variations in site conditions of the foundations of the subways and noise barriers. We will also make provision for price adjustments as the construction period will exceed 21 months.

14. We estimate the annual recurrent expenditure arising from this project to be \$3.8 million.

PUBLIC CONSULTATION

15. We consulted the Pat Heung Rural Committee and Kam Tin Rural Committee on 19 December 1998 and 29 December 1998 respectively. We also consulted the Traffic and Transport Committee and the Environmental Improvement Committee of the Yuen Long Provisional District Board on 5 January 1999 and 28 January 1999 respectively. All these Committees endorsed the Bypass.

16. We gazetted the proposed works under the Roads (Works, Use and Compensation) Ordinance on 30 April 1999 and 7 May 1999 respectively and received seven objections. One objector withdrew his objection unconditionally. Details of the unresolved objections are as follows –

- (a) Four objectors agreed to withdraw their objections subject to minor re-alignment of the Bypass and revision to the work site limit. These modifications have been incorporated into the proposed road scheme.
- (b) One objector requested moving the road alignment to avoid resuming his lot and sought permission to erect containers on the lot for temporary residential purposes. These two requests were not entertained due to site constraints and inappropriate land use respectively. The objector also considered the amount of compensation offered to be inadequate. We explained to the objector the existing resumption policy and his rights under the law. He maintained his objection.
- (c) One objector was concerned about the potential impact of the road works on a marsh habitat, which is the home of a rare bird species, the Painted Snipe. We have addressed his concern by agreeing to permanently

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reprovision and manage an area of marshland as a compensating habitat. Although the objector had no adverse comments on our proposal and agreed to our detailed design in principle, he maintained his objection.

17. On 28 March 2000, the Chief Executive-in-Council authorised the project with modifications as set out in paragraph 16 (a).

18. At a meeting of the LegCo Panel on Transport on 15 December 2000, Members noted that we would submit the project to the PWSC meeting on 10 January 2001 for consideration. Members of the panel did not raise any comments on the project.

ENVIRONMENTAL IMPLICATIONS

19. We completed an Environmental Impact Assessment (EIA) in March 1996 for the project. A further review of the EIA report, which was entitled “Additional Review Phase 2 Working Paper (Environmental)”, was prepared in February 1999.

20. The EIA study and the additional review concluded that with the implementation of the recommended mitigation measures, the environmental impacts arising from the project could be mitigated to within established standards and guidelines. We shall implement the recommendations of the approved EIA report and its review accordingly. The key measures include establishing permanently reprovisioned marshland on site for the Painted Snipe’s habitat; installation of noise barriers and use of noise-reducing road surfacing as well as roadside landscaping to soften the visual impacts of the noise barriers. For short term impact during construction, we will implement an Environmental Monitoring and Audit (EM&A) programme to ensure that timely and effective mitigation measures will be applied. We estimate the cost of implementing the environmental mitigation measures to be \$49.9 million and the EM&A programme to be \$1.5 million. We have included this cost in the overall project estimate.

21. Ways of minimising the generation and maximising the reuse/recycling of construction and demolition (C&D) materials were considered at the planning and design stage. We will minimise the volume of excavated paving material by matching as far as possible the proposed levels of road surfaces with that of the adjoining ground. We shall require the contractors to submit Waste Management Plans (WMPs) for approval before the commencement of

/ construction

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 also control the disposal of C&D materials in accordance with the approved WMPs. We estimate that some 5 800 cubic metres of C&D materials will be generated from the project. Of these, about 1 000 cubic metres (17.2%) will be reused on site, and 4 800 cubic metres (82.8%) will be disposed of at landfills. We will monitor such disposal through a trip ticket system. We have avoided generation of inert C&D material which would otherwise be sent to public filling areas. The reuse, recycling and disposal of C&D materials will be properly recorded for monitoring purposes.

22. We have assessed the impact of the construction and operational phases of the Bypass on air quality. Our assessment shows that with the stipulation of appropriate dust suppression measures, the air quality during the construction phase can be held well 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 impact on the residents in the vicinity of the Bypass.

LAND ACQUISITION

23. We require resumption of 73 665 square metres of agricultural land. Land clearance for the project will affect 87 families involving 216 persons. The Director of Housing will offer eligible clearerees accommodation in public housing or interim housing in accordance with existing housing policy. We will charge the land resumption costs, estimated to be \$220 million (at March 2000 prices), to **Head 701** – “Land Acquisition” **Subhead 1100CA** – “Compensation and ex-gratia allowances in respect of projects in the Public Works Programme”.

BACKGROUND INFORMATION

24. The proposed improvements comprise three projects –

- (a) **560TH** – Improvement to Kam Tin Road, Stage 1;
- (b) **702TH** – Improvement to Kam Tin Road, Stage 2; and
- (c) **246TH** – Kam Tin Bypass.

25. We upgraded **560TH** to Category A in December 1998 at an estimated cost of \$154.2 million in MOD prices and started construction in May 1999 for completion in late 2001.

26. We included **702TH** in Category B in August 1997 at an estimated cost of \$563.1 million in December 1997 prices. The project is now at the design stage and we plan to commence construction in early 2003 for completion in late 2005.

27. We included **246TH** in Category B in November 1993 for the construction of a new dual two-lane carriageway to bypass Kam Tin town centre. We have engaged consultants to undertake the investigation and design of the project at an estimated cost of \$7.8 million in MOD prices under **Subhead 6100TX** – “Highway works, studies and investigations for items in Category D of the Public Works Programme”. We completed the detailed design and tender documents in November 2000.

28. To minimize traffic disruption during construction, we will carry out temporary traffic diversion arrangements as and when necessary.

29. We estimate that the project will create some 230 jobs, totalling 6 620 man-months comprising 40 professional/technical staff and 190 labourers.

Transport Bureau
December 2000

246TH – Kam Tin Bypass

Breakdown of estimates for consultants' fees (at September 2000 prices)

			Estimated Man- Months	Average MPS* Salary Point	Multiplier Factor	Estimated Fee (\$ million)
Consultants' staff costs						
(a)	Consultants' fees for	Professional	13	38	2.4	1.8
	construction stage - Administration of contract	Technical	7	14	2.4	0.3
(b)	Site supervision by resident site staff employed by the consultants	Professional	93	38	1.7	9.1
		Technical	568	14	1.7	18.4
Total consultants' staff costs						29.6

* MPS = Master Pay Scale

Notes

1. A multiplier factor of 2.4 applied to the average MPS point to arrive at the full staff cost including the consultants' overheads and profit, as the staff will be employed in the consultants' offices. (At 1.4.2000 MPS pt. 38 = \$57,525 p.m. and MPS pt. 14 = \$19,055 p.m.). A multiplier factor of 1.7 applied in the case of resident site staff supplied by the consultants.
2. The consultants' fee for works in the construction stage is a provisional part of the lump sum price quoted by the selected consultants under Agreement No. CE7/94 "Design and Construction Consultancy for Kam Tin Bypass".