Legislative Council Panel on Transport

Route 5 - section between Shek Wai Kok and Chai Wan Kok

PURPOSE

This paper seeks Members' view on the proposed implementation of the project "**52TH** - Route 5 - section between Shek Wai Kok and Chai Wan Kok".

BACKGROUND

2. Route 5 is a trunk road connecting Sha Tin and Tsuen Wan via the Shing Mun Tunnels. The section of Route 5 between Sha Tin and Shek Wai Kok, Tsuen Wan was completed in 1990. The remaining section of Route 5 to be completed under **52TH** runs from Shek Wai Kok to Chai Wan Kok.

3. At present, vehicular traffic between the Shing Mun Tunnels and Tuen Mun Road/Castle Peak Road has to pass through the congested local road network within Tsuen Wan. During peak hours, road junctions in the area operate at full capacity. Traffic congestion occurs on the approaches to Castle Peak Road (Tsuen Wan Section) between Sha Tsui Road and Sai Lau Kok Road, in the Kowloon bound direction in the morning and in the Tuen Mun bound direction in the evening. The proposed roadworks will provide a direct trunk road link between the Shing Mun Tunnels and Tuen Mun Road, as well as a local link to western Tsuen Wan. They will help relieve the present traffic congestion in the area.

4. The Traffic Impact Assessment review completed in June 1999 indicated that a number of road junctions in Tsuen Wan Town cannot cope with the growing traffic demand. In particular, the junctions at Castle Peak Road/Tai Chung Road, Sha Tsui Road/Tai Ho Road and Castle Peak Road/Tai Ho Road are operating at or beyond capacities. The existing and projected reserve capacities[1] of these three key junctions during peak hours are summarised below -

Location of Junction	With or Without Proposed Roadworks	Reserve Capacity		
		Existing	Year 2006	Year 2011
Castle Peak Road/ Tai Chung Road	With	-	5%	10%
	Without	-10%	-25%	-30%
Sha Tsui Road/ Tai Ho Road	With	-	-30% (5%)	-30% (0%)
	Without	-10%	-40% (-10%)	-40% (-10%)
Castle Peak Road/ Tai Ho Road	With	-	-5%	0%[2]
	Without	-5%	-10%	-5%

Percentage in ( ) indicates the reserve capacities after completion of a road junction improvement scheme at the junction of Sha Tsui Road/Tai Ho Road in 2006.

5. Apart from the road junctions in Tsuen Wan Town, Tsuen Kam Interchange will also be a critical junction. The completion of the Tsing Yi North Coastal Road in 2001 will increase the traffic volume at the Interchange because the road will provide a more convenient link between Sha Tin and Lantau/Northwest New Territories via the Shing Mun Tunnels. We expect that the Interchange will be heavily overloaded by 2006 causing significant delay and long traffic queues on the approach roads. The projected volume/capacity (v/c) ratios[3] in 2006 and 2011 respectively during the peak hours at Tsuen Kam Interchange with or without the proposed roadworks are as below -

1 "Reserve Capacity" (RC) is an indicator which reflects a junction's performance. A negative RC indicates that the junction is overloaded, thus resulting in traffic queues and longer delay time.

2 Normally, the reserve capacity should decrease over the years due to natural growth in traffic volume. However, the traffic model indicates that the junction capacity at Castle Peak Road/Tai Ho Road can be improved with the completion of Route 9 and Route 10 by 2011.

3 A volume/capacity (v/c) 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 v/c 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.

	Year	
	2006	**2011**
With proposed roadworks	0.82	0.80[4]
Without proposed roadworks	1.71	1.88

When Route 5 is in place, the projected journey time between Chai Wan Kok and Shek Wai Kok will be reduced from 12.4 minutes to 2.8 minutes.

6. The review recommended that the remaining section of Route 5 should be completed as soon as possible in order to provide traffic relief to the distributor roads in Tsuen Wan, including Castle Peak Road, Tai Chung Road, Sha Tsui Road and Tai Ho Road. We plan to start construction in July 2001 for completion by December 2005.

7. We issued an information paper to Members of the Transport Panel of the Legislative Council on 16 May 2000. We then submitted this project to the Public Works Subcommittee meeting held on 24 May 2000. Members raised questions regarding the details of the capacity of the key junctions and the effectiveness of noise mitigation measures proposed for this road project. After discussion, the Administration withdrew the item in order to provide the additional information to Members. Details of the required information are contained in paragraphs 5, 13 - 16 and 18 of this paper, as requested. Members also asked if the Administration would install noise barriers along the existing Cheung Pei Shan (CPS) Road. Following ExCo's recent approval to the new policy to address the noise impact of existing roads on residents, the Administration has decided to install the noise barriers along CPS Road. The installation work will be implemented under a separate new PWP item and is programmed to be completed to tie in with completion of this Route 5 project.

[4] Normally the v/c ratio should increase over the years due to natural growth in traffic volume. However, the traffic model indicated that there will be a marginal decrease in traffic flows on Route Twisk via Tsuen Kam Interchange in 2011 because of the completion of Route 9 and other strategic roadworks in Northwest New Territories by 2011.

PROPOSAL

8. We now propose to upgrade **52TH** to Category A to cover –

(a) construction of a 1 300-metre (m) long dual 2-lane carriageway from Cheung Pei Shan Road at Shek Wai Kok to Castle Peak Road near Tsuen Wan Police Station at Tsuen King Circuit, including a 97m long flyover across the Mass Transit Railway (MTR) tracks (a 190m section through Discovery Park has been completed by the developer);

(b) widening and upgrading of a 700m long existing section of Castle Peak Road between Tsuen Wan Police Station and Chai Wan Kok to dual 4-lane carriageway;

(c) improvement of Chai Wan Kok Interchange including extension of a flyover (about 166m in length), a 55m long underpass and associated slip roads connecting Castle Peak Road with Tuen Mun Road;

(d) construction of a pedestrian subway and a footbridge;

(e) associated roadworks, drainage and sewerage works, slope works, waterworks and landscaping works;

(f) provision of noise mitigation measures including about 615m of semi-enclosed noise barriers (5.5m high), about 1 190m of cantilever noise barriers (4m to 8m high) and low noise road surfacing; and

(g) an environmental monitoring and audit (EM&A) programme for the works mentioned in paragraphs (a) to (f) above.

The site plans are at Enclosures 1 and 2.

FINANCIAL IMPLICATIONS

9. The cost estimate of the proposed works is about $1,000 million at September 2000 prices ($1,098.5 million in money-of-the-day prices).

PUBLIC CONSULTATION

10. We consulted the Traffic and Transport Committee of the Tsuen Wan District Board on 10 March 1993 and 23 July 1993 on the preliminary layout of the proposed road scheme. Members supported the scheme.

11. On 27 March 1995, we consulted the Environmental Affairs Committee of the Tsuen Wan District Board on the proposed environmental impact mitigation measures. Members supported the road scheme on traffic grounds, but expressed reservations with regard to the noise impact during construction and upon completion of the project.

12. We gazetted the road scheme under the Roads (Works, Use and Compensation) Ordinance on 28 April 1995 and received 12 objections from two distinct groups. The first group, consisting of the Mass Transit Railway Corporation, various land owners and local residents, all objected to Government's resumption of their land and wished to safeguard their individual interests. They were also concerned about the environmental and traffic impacts of the project. The second group consisted of members of the Tang Clan who objected to the road scheme on the grounds that the project may have some 'fung shui' impact on an ancestral grave in the area. We explained to the objectors that the proposed works were required because of traffic needs. We also explained to them the recommended environmental mitigation measures under the project and traffic management measures to be carried out during the construction stage. However, we did not succeed in persuading any of the objectors to withdraw their objections. On 17 June 1997, the then Governor in Council overruled the objections in the public interest and authorized the road scheme with modifications. The modifications, originating from the

objectors' comments, involve the provision of a footway on the top of a section of the retaining wall near the Tang Clan ancestral grave and conversion of part of a footway to a carriageway at the junction of Sha Tsui Road and Castle Peak Road.

ENVIRONMENTAL IMPLICATIONS

13. The project is an exempted designated project under Section 9(2)d and Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO). The environmental impacts during construction and operation were assessed in an EIA Study completed in 1995 and are now lodged in the EIAO Register. The Study findings indicate that in some instances (e.g. during night work over the MTR tracks), the construction noise impacts will exceed the established standards and guidelines. We will implement the recommended mitigation measures, such as the use of quieter equipment, scheduling of activities, careful siting of equipment and use of temporary enclosures, to reduce these impacts as far as possible. We will also implement stringent control measures to minimise other construction noise impacts to meet the established standards and guidelines.

14. The Study indicates that operational noise impacts are the major concern as most of the sensitive receivers along the proposed road are exposed to high levels of traffic noise from existing roads. Without noise mitigation on the completed Route 5 extension, the residents of approximately 4 300 dwellings in 5 villages and 8 residential buildings/estates; the occupants of one Home for the Aged; and the students of two schools would be exposed to traffic noise exceeding the level stipulated in the Hong Kong Planning Standards and Guidelines (HKPSG). In accordance with existing policy, we will provide low noise road surfacing along the full length of the road and construct noise barriers (about 1 190m long ranging from 4m to 8m in height) and semi-enclosures (about 615m long and 5.5m high). In addition, indirect mitigation measures have been/are being provided by the developers of Kam Fung Garden, the Discovery Park and Nan Fung development (together with the school development therein). Noise abatement measures have been provided at Kwai Ming Wu School. With these measures in place, the EIA Study indicates that the noise impact to approximately 2 500 dwellings will be at levels higher than that stipulated in the HKPSG. However, based on the calculated road traffic noise levels which indicate that in general the largest contribution is from existing sources, these receivers do not meet

the eligibility criteria under existing policy for indirect acoustical mitigation measures in the form of window insulation and air-conditioners.

15. Dust suppression measures such as provision of wheel washing troughs at all vehicle exit points, covering of stockpiles of aggregates or spoil, and watering to minimise dust during earthworks operations will be incorporated in the contract documents to maintain air quality to within the established guidelines during construction.

16. Modelling of operational air quality impacts due to nitrogen dioxide (NO_2) and respirable suspended particulates (RSP) indicates that the air quality objectives for hourly NO_2 and daily RSP will not be exceeded in the design years at the identified sensitive receivers along the proposed route. The peak hour concentrations for NO_2 would range from 146 to 286 μg/m3 and the daily average RSP would range from 96 to 135 μg/m3, which are below the air quality objectives of 300 and 180 μg/m3 respectively.

17. In April 1995, the Advisory Council on the Environment endorsed the EIA with the conditions that complaint hotlines should be provided during the construction period to handle complaints from nearby residents, and that there should be independent monitoring of the environmental impacts. In August 1999 and January 2001, we completed two Environmental Reviews (ERs), taking into account the latest information available and the comments received during the public consultations. The ERs concluded that the basic findings of the EIA report are still valid. To further reduce the predicted traffic noise impact on sensitive receivers, we have increased the recommended height of the noise barriers at the slip road near TWTL 382 and Muk Min Ha Tsuen to the present level. To ensure compliance with the EIA recommendations, we will implement an EM&A programme. We will also incorporate into the works contract standard measures to control pollution arising during construction. These measures will include frequent watering of the site and the provision of wheel-washing facilities to reduce emission of fugitive dust, the use of silenced construction plant to reduce noise generation and other procedures as recommended in Environmental Protection Department's Recommended Pollution Control Clauses. We have included the costs of implementing the environmental mitigation measures ($110 million) and an EM&A programme ($8 million) (both in September 2000 prices) in the overall project estimate.

18. The scheme will bring about redistribution of traffic within Tsuen Wan which will result in environmental benefits in Tsuen Wan Town. In particular, it can be seen in paragraph 6 that roads in the old town centre, in the area of Sha Tsui Road, will enjoy a reduction in traffic volume of 10-20% at the peak hours. This will not only bring time savings, but also noise and air benefits to many local residents.

19. At the planning and design stages, we have considered optimising the road levels to reduce the generation of construction and demolition (C&D) materials as much as possible. We estimate that about 75 300 cubic metres (m^3) of C&D materials will be generated by the project. Of these about 61 200 m^3 (81.3%) will be re-used on site and 14 100 m^3 (18.7%) will be disposed of at landfills.

20. Under the terms of the contract, we will require the contractor to submit a waste management plan for approval 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 waste management plan. We will also require the contractor to reuse the excavated material on site as filling material as far as possible to minimise the disposal of public fill to public filling areas. 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 will require the contractor to separate public fill from C&D waste for disposal at appropriate locations and to sort the C&D waste by category on site to facilitate reuse/re-cycling in order to reduce the generation of such waste. We will control the disposal of public fill and C&D waste to designated public filling areas and landfills respectively through a trip ticket system. We will record the disposal, reuse and re-cycling of C&D materials for monitoring purposes.

21. The proposed works will cause limited ecological impacts including loss of introduced or cultivated plant species, and some loss of trees and scrub vegetation. To mitigate the landscape and visual impacts of the project, we will provide the maximum practicable amount of compensatory planting on all disturbed and new slopes, and screen planting along the roadside areas. In this respect, we will plant about 41 000 trees and shrubs and use hydroseeding to protect formed slopes as appropriate. We will also minimize the visual impacts of the roadside slopes by integrating the geometry of the new slopes and the colour of the associated features into their surrounding landscape setting. Regarding the highway

structures and the noise mitigation structures, we will provide visual interest and maintain visual continuity by coordinating the architectural design and treatment for all different forms of structures into a unified, coherent and visually pleasing appearance. We have included a sum of $30 million (in September 2000 prices) for the landscaping works in the overall project estimate.

LAND ACQUISITION

22. We will clear about 18.9 hectares of government land and resume about 30 square metres (m^2) of agricultural land and about 1 100m^2 of building land. The land acquisition and clearance will affect 59 households involving 151 persons and 121 structures. The Director of Housing will offer eligible clearees accommodation in public housing in accordance with the existing housing policy. We will charge the cost of land acquisition and clearance, estimated at $77 million, to Head **701** - Land Acquisition.

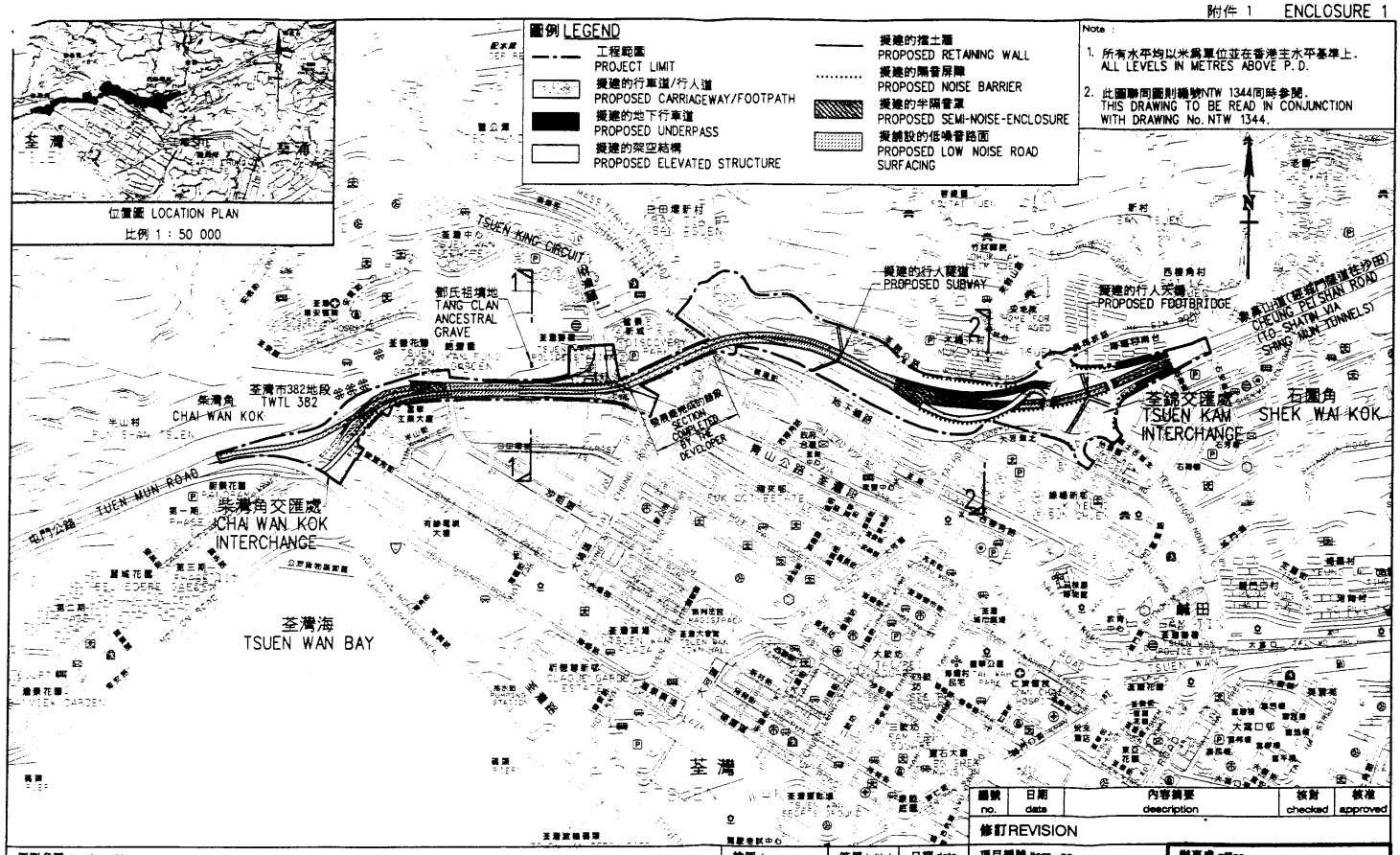
THE WAY FORWARD

23 We will seek the approval of the Public Works Sub-Committee of the Finance Committee on 21 February 2001 to upgrade the project to Category A. We plan to start works in July 2001 for completion by December 2005.

ADVICE SOUGHT

24. Members are invited to provide comments on the project before we seek the approval of the Public Works Sub-Committee.

Transport Bureau
February 2001



編號 no.	日期 date	內容摘要 description	核對 checked	核准 approved
修訂REVISION				

圖則名稱 drawing title

五號幹線 - 石圍角至柴灣角段

ROUTE 5 - SECTION BETWEEN SHEK WAI KOK AND CHAI WAN KOK

繪圖 drawn	Y. L. CHAU	簽署 initial	SIGNED	日期 date	10.05.00
核對 checked	C. S. CHOI	簽署 initial	SIGNED	日期 date	10.05.00
核准 approved	C. J. CHIVERS	簽署 initial	SIGNED	日期 date	10.05.00

項目編號 item no. 52TH

比例 scale 1 : 7 500

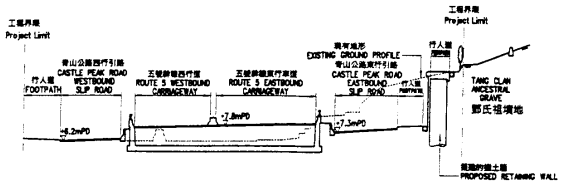
圖則編號 drawing no. NTW 1343

辦事處 office
新界西拓展處
NEW TERRITORIES WEST DEVELOPMENT OFFICE

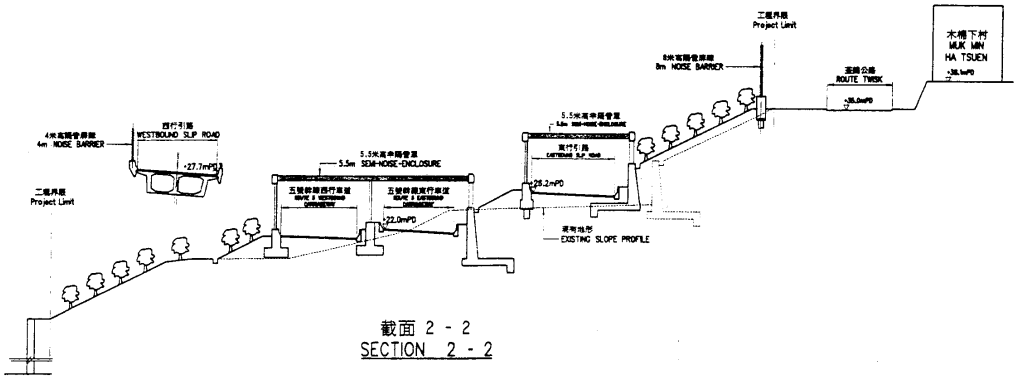
拓展署
TERRITORY DEVELOPMENT DEPARTMENT

Note :
1. 所有尺寸均以毫米爲單位.
ALL DIMENSIONS IN MILLIMETRES.
2. 所有水平均以米爲單位並在香港主水平基準上.
ALL LEVELS IN METRES ABOVE P.D.
3. 此圖需與圖則編號NTW 1343同時參閱.
THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING No. NTW 1343.

Legend :
半隔音罩 SEMI-NOISE-ENCLOSURE
隔音屏障 NOISE BARRIER



截面 1 - 1
SECTION 1 - 1



截面 2 - 2
SECTION 2 - 2

編號 no.	日期 date	內容摘要 description	核對 checked	核准 approved
修訂REVISION				

圖則名稱 drawing title

五號幹線 - 石圍角至柴灣角段
ROUTE 5 - SECTION BETWEEN SHEK WAI KOK AND CHAI WAN KOK

繪圖 drawn	W. W. YU	簽署 initial	SIGNED	日期 date	10.05.00
核對 checked	C. S. CHOI	簽署 initial	SIGNED	日期 date	10.05.00
核准 approved	C. J. CHIVERS	簽署 initial	SIGNED	日期 date	10.05.00

項目編號 item no. 52TH
比例 scale 1 : 400
圖則編號 drawing no. NTW 1344

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TERRITORY DEVELOPMENT DEPARTMENT