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Panel on Transport

Background Brief

Distribution of traffic amongst the three road harbour crossings

Introduction

The Panel on Transport has all along been concerned about the uneven distribution of traffic amongst the three road harbour crossings, namely the Cross Harbour Tunnel (CHT), Eastern Harbour Crossing (EHC) and Western Harbour Crossing (WHC). The daily traffic throughput of CHT, EHC and WHC from 1997 to 2003 are as follows-

Year	CHT	EHC	WHC
1997	123,158	85,812	22,348
1998	120,010	70,999	33,100
1999	117,801	68,813	39,215
2000	120,350	72,228	42,797
2001	120,444	74,596	39,702
2002	120,009	73,396	40,038
2003	119,759	71,284	37,261

Impact of tunnel tolls on traffic distribution

2. It has been considered by members of the Panel that one of the major reasons leading to the uneven distribution of traffic amongst the three road harbour crossings is the toll differential amongst the CHT, EHC and WHC. The level of tolls has a direct impact on the traffic flow. The tolling strategy hence plays a critical role in meeting specific traffic targets. The toll schedules of the road harbour crossings are at **Annex A**.

3. Since the operation of WHC in April 1997, the tunnel company has increased the gazetted tolls for three times in December 2000, July 2002 and February 2004. The Government and the New Hong Kong Tunnel Company Limited have also announced in March 2005 that the tolls of the EHC would be increased by some 66% as from 1 May 2005 onwards.

4. The Panel has all along been concerned about the toll increases of the road harbour crossings, and the resulting impact on the traveling public and the transport trades. The toll increases might also induce other public transport operators to raise the fares of their services, and aggravate the traffic congestion at CHT and the problem of uneven distribution of traffic amongst the three road harbour crossings. The Panel therefore has repeatedly urged the Administration to remind franchisees to defer consideration of any toll adjustments, taking into account public affordability and acceptability. The Panel has also called on the Administration to examine and formulate a long-term policy to optimize the use of valuable tunnel resources.

5. In reviewing the traffic implications of tunnel toll increases and measures to promote access and utilization of the Build-Operate-Transfer (BOT) tunnels at the Panel meeting on 15 December 2000, the Panel passed a motion, urging the Administration to examine and formulate a long-term policy on tunnel utilization, and to propose new measures for resolving the congestion problem of tunnels as well as promoting the optimum use of tunnel resources.

6. Members had put forward various suggestions to the Administration for consideration so as to improve the utilization of BOT tunnels. These include:

- (a) establishing a toll stability fund to pay off BOT operators such that they would defer toll increases which they would otherwise be entitled to;
- (b) extending the franchise period of the BOT franchises in return for a lower rate of toll increase;
- (c) buying back the ownership of all BOT tunnels and establishment of a Tunnels and Bridges Authority to own and manage the tunnel facilities; and
- (d) redistribution of tunnel traffic by way of toll alignment.

7. At the Panel meeting on 22 February 2002, the Administration briefed members on the Government policy on the provision and operation of tunnels, and provided the Administration's views on the above measures as suggested by

members. A copy of the discussion paper for the meeting on 22 February 2002 is in **Annex B**.

8. In reviewing the toll increase of the WHC at the meeting on 13 February 2003, the Panel reiterated its concern that the WHC's toll increase would inevitably aggravate the existing congestion at the CHT and EHC. This would result in enormous waste of social resources. Apart from urging the tunnel company to consider deferring the toll increase, the Panel also reviewed with the Administration measures to enhance the accessibility and utilization of WHC. Members also called on the Administration to consider expanding the scope of the fare adjustment mechanism being developed by the Administration to include tunnel tolls and introducing pecuniary measures to achieve a more balanced traffic distribution among the harbour crossings, e.g. by using the profits generated from CHT to purchase road capacity on other road harbour crossings.

Mainland experience

9. In order to explore ways to optimize the utilization of the road harbour crossings in Hong Kong, the Administration has commissioned a consultant to conduct a study on Mainland and overseas experience in the provision and operation of tunnels. The Panel was briefed on 25 April 2003 and 28 May 2004 on the findings of the consultancy study and the implications for Hong Kong. Given that there are greater similarities between the situation in Hong Kong and the Mainland, the focus of the study was more on Mainland experience. Further details are set out in LC Paper No. CB(1)1457/02-03(03) and LC Paper No. CB(1)1912/03-04(26).

10. The study revealed that the municipal governments had started to reform the tolled facilities in their cities in recent years. Nanjing had introduced toll adjustment in order to balance the traffic. The other four cities covered in the study (i.e. Shanghai, Guangzhou, Wuhan and Chongqing) had eliminated toll collection at tolled facilities and introduced annual or monthly passage fees on vehicles. Under the new arrangement, passage fees are collected from vehicles registered in the city on an annual or monthly basis and from vehicles registered outside the city on each entry. A management authority has been set up under the municipal government to manage the facilities and collect the annual/monthly vehicle passage fees.

(a) Introduction of annual/monthly vehicle passage fees

11. The Mainland experience shows that the introduction of the annual/monthly vehicle passage fees has been generally effective in balancing the traffic flow among the tolled and untolled facilities. However, in some Mainland

cities, the overall traffic flow has increased after the elimination of tolls on tolled facilities and this has brought about a negative impact on the general traffic conditions. There is a further problem of fairness as this arrangement essentially requires less frequent users to subsidize the frequent users.

(b) Resumption of operating rights by Mainland Authorities

12. The Mainland experience also reveals that most of the agreements reached before 1998 between investors of the business tolled facilities and the local authorities have included a clause of contracted return, which guarantees a minimum return on the investment. With the elimination of toll collection at the tolled facilities, the investors were either paid based on a discounted contracted return or compensated with a negotiated amount by the authorities as a buy-out of the tolled facilities.

Implications of applying the Mainland approach to Hong Kong

13. The arrangement currently adopted in the four Mainland cities is similar to an earlier suggestion by Members to establish a Tunnels and Bridges Authority (TBA) in Hong Kong. The TBA is expected to own and operate all tunnels and bridges. To achieve this, the Government will first have to buy back the ownership of all BOT tunnels. The Administration's view in 2003 is that such a move will, however, involve enormous capital spending. Given the budget constraint and the need to contain government expenditure, it is questionable whether such a course of action can be justified.

14. Instead of Government buying back the tunnels, an alternative option is to identify one "common owner" of the three cross-harbour tunnels from the private sector. If the three tunnels are owned by one single party, the toll levels could be adjusted to achieve a more balanced traffic distribution among the tunnels. However, the Administration has pointed out that as two of the three cross-harbour tunnels are in private hands, the willingness of the operators to participate in the negotiations and the ability to arrive at buy-back formulas which are acceptable to all parties are commercial decisions which the Government cannot dictate.

Discussion with tunnel company

15. At the Panel meeting on 28 May 2004, the Administration has pointed out that it had had discussions with the Western Harbour Tunnel Company Limited (WHTCL) about possible approaches to achieving a more balanced traffic distribution among the three road harbour crossings since 2001. The Administration considers that any approach to be pursued must meet the following

principles –

- (a) it should bring about overall benefit to the public;
- (b) it should protect the General Revenue;
- (c) it should make commercial sense to the franchisee;
- (d) it should help achieve the traffic management objective, i.e. a more balanced traffic distribution among the tunnels;
- (e) there should be a fair valuation of the road harbour crossings, especially the CHT, as it is a valuable asset of the public;
- (f) it should be accompanied by a toll adjustment mechanism that is acceptable to the public, the Government and the tunnel operators; and
- (g) an institutional framework has to be worked out for the management of the three tunnels in a cost-effective and efficient manner.

16. Over the past years, the Administration has been discussing with the WHTCL possible options that may meet the above considerations. However, there are major differences in some of the fundamental parameters and assumptions held by the two sides. The Administration points out that it is not easy to reconcile the different objectives and interests of different parties. Nonetheless, it maintains an open mind and has been trying to maintain a dialogue with the tunnel operator on possible measures to enhance the traffic distribution.

17. According to the Administration, it has been examining traffic management improvement schemes to further enhance access to and utilization of the WHC. Since late 1999, WHC and the Transport Department have set up a Traffic and Transport Improvement Committee to jointly examine measures that could help improve the tunnel traffic.

18. In addition, the Administration is reviewing measures to reduce congestion at busy traffic corridors taking into account the latest traffic developments and projections. The Administration will adopt a holistic approach to enhance the traffic flow at different parts of the territory, and cross-harbour traffic is one of the areas that it will examine. The Administration will consult the relevant parties and this Panel when it has come up with any proposed measures.

EHC toll increase

19. The Panel was briefed on the outcome of the arbitration on the toll increase of the EHC at its meeting on 18 March 2005. At the meeting, members called upon the tunnel company to defer the toll increase, and the Administration to withhold gazetting the Notice to amend the Schedule to the EHC Ordinance to vary the EHC Road Tunnel tolls, pending the outcome of further consideration by the company on EHC toll increase as requested by members.

20. The Panel also passed a motion, expressing astonishment and strong dissatisfaction over the toll increase and asking the Government to

- (a) expeditiously review the toll levels of the three cross-harbour tunnels; and
- (b) come up within one month with proposals aimed at addressing the uneven distribution of traffic among the cross-harbour tunnels.

21. The Panel also requested the Administration to consider building the fourth road harbour crossing or widening the existing CHT to relieve traffic congestion.

22. The Panel will revisit the EHC tolls and other related issues at the forthcoming meeting to be held on 22 April 2005.

23. A Subcommittee was formed to examine the EHC Ordinance (Amendment of Schedule) Notice 2005. The Notice amends the Schedule to the EHC Ordinance to vary the EHC Road Tunnel tolls pursuant to an arbitration award. The Subcommittee will report to the House Committee on 29 April 2005.

Council Business Division 1
Legislative Council Secretariat
18 April 2005

Annex A**Toll schedules of road harbour crossings**

Vehicle Type	CHT	EHC		WHC	
		Existing Tolls	New tolls	Gazetted tolls	Concessionary tolls
Motorcycles	\$8	\$8	\$13	\$30	\$22
Private Cars	\$20	\$15	\$25	\$60	\$40
Taxis	\$10	\$15	\$25	\$60	\$35
Public & Private Light Buses	\$10	\$23	\$38	\$70	\$50
Light Goods Vehicles	\$15	\$23	\$38	\$90	\$55
Medium Goods Vehicles	\$20	\$30	\$50	\$125	\$80
Heavy Goods Vehicles	\$30	\$45	\$75	\$185	\$110
Single-decked Buses	\$10	\$30	\$50	\$70	\$70
Double-decked Buses	\$15	\$45	\$75	\$100	\$100
Each extra axle	\$10	\$15	\$25	\$60	\$30

Legislative Council Panel on Transport
Government Policy on the Provision and Operation of Tunnels

PURPOSE

This paper briefs Members on the Government policy on the provision and operation of tunnels and provides the Administration's comments on Members' suggestions made on various occasions.

GOVERNMENT POLICY ON PROVISION AND OPERATION OF TUNNELS

2. The Government policy on the provision and operation of tunnels is guided by the following principles :-

- (a) Government should, as far as practicable, encourage participation of the private sector through the Build-Operate-Transfer (BOT) mode;
- (b) while the BOT operators should be afforded the opportunity to make a reasonable return on their investments, they are also expected to bear the commercial risk;
- (c) the Government does not provide any guarantee that a BOT operator would, at the end of the franchise, achieve its own target rate of return; and
- (d) the users-pay principle, i.e. the Government will not use public funds to subsidise BOT operators or motorists.

Characteristics of Tunnel Industry

3. The franchisee of a BOT tunnel is required to make substantial upfront capital investment. Within two to three years after the tunnel is operational, the franchisee starts to repay the loans. Together with the annual depreciation and operating cost which are generally at a level close to full capacity operation irrespective of the traffic throughput, the franchisee has to bear a significant financial burden in the first few years of operation.

4. On the other hand, traffic volume plying through a new tunnel needs time to build up. The bulk of the traffic in the first few years of operation is diverted and induced traffic i.e. traffic which is diverted from or suppressed by the congestion of existing tunnels or roads. As the areas served by the new tunnel develop, new traffic demand will be generated. An important characteristic of the tunnel industry is hence that expenditure and cash outflow always exceed the

revenue and cash inflow in the first few years of operation. In Hong Kong, it is observed that it normally takes four to five years of operation (i.e. the seventh or eighth years of the franchise taking into account the construction period) for a tunnel franchisee to start making profit.

Traffic Distribution of the Road Harbour Crossings

5. Some Members had, at previous meetings, raised concern at the uneven distribution of traffic amongst the three road harbour crossings, namely the Cross Harbour Tunnel (CHT), Eastern Harbour Crossing (EHC) and Western Harbour Crossing (WHC). The daily traffic throughput of CHT, EHC and WHC in the past five years were as follows :-

Year	CHT	EHC	WHC
1997	123,158	85,812	22,348
1998	120,010	70,999	33,100
1999	117,801	68,813	39,215
2000	120,350	72,228	42,797
2001	120,444	74,596	39,702

6. It is noted that :-

- (a) CHT's throughput dropped from the 123,000 in 1997 to 120,000 in 1998 and has since been maintained at that level;
- (b) throughput of EHC, partly owing to the relocation of the airport, dropped from 86,000 in 1997 to 75,000 in 2001;
- (c) patronage of WHC grew from 22,000 in 1997 to 40,000 in 2001.

7. It is believed that WHC has served to divert traffic from CHT and EHC. The patronage of WHC is also expected to grow steadily with population build-up at Lantau and West Kowloon. On the other hand, the throughput at CHT is expected to be maintained at a relatively high level as it is the most conveniently located tunnel and provides a strategic connection between the Hong Kong Island and urban Kowloon.

Measures that the Government Has Been Taking

8. The Government has been implementing various measures to further enhance access to as well as the utilisation of the tunnels.

9. Clear traffic signs are erected to direct traffic to all tunnels. Particular attention is devoted to recently opened tunnels where we have been erecting additional and modified traffic signs and road markings, in consultation with the tunnel operators, to familiarise road users with the routings. We would also consider adjustments to the traffic signals at critical road junctions to smoothen traffic flow in the vicinity of the tunnels. Local traffic improvement schemes have been introduced where appropriate to improve the traffic conditions of the feeder roads. For instance, bus only lanes have been introduced on tunnel approaches to give priority to mass carriers in accessing the tunnels.

10. In addition, road improvement schemes such as road widening works and provision of direct road links between tunnel approaches and major road corridors would be considered to increase the capacity and accessibility of the tunnels. In some cases, we would consider building new roads or grade-separated interchanges to separate local traffic from the main traffic approaching the tunnels thereby improving accessibility.

11. We are also pushing ahead with the development of a comprehensive Intelligent Transport System (ITS) in Hong Kong to enable road users to make better and more informed choices on their routings through access to real-time road traffic information. One of the projects under the ITS, the Journey Time Indicator System (JTIS), will provide real-time information on the time required to cross the harbour using the three different cross harbour tunnels. The electronic display panels to be located at strategic points on the approaches to tunnels will enable road users to make an informed choice on the optimal routing. The system will be in place around the end of 2002.

12. We also encourage tunnel companies to devise marketing strategy and promotional campaigns to boost patronage. Lucky draws, fuel coupons and discount for bulk purchase of tunnel coupons are but a few examples. We will continue to maintain close liaison with the tunnel operators to explore ways to optimise utilisation.

SUGGESTIONS BY THE PANEL

13. Members have made the following suggestions on various occasions to improve utilisation of the BOT tunnels :-

- (a) establishing a fund to stabilise tunnel tolls;
- (b) extending the franchise period of the BOT franchises;

- (c) establishment of a Tunnels and Bridges Authority (TBA); and
- (d) redistribution of tunnel traffic by way of toll alignment.

14. We have to assess the implications of Members' suggestion in the light of the principles set out in paragraph 2 above. In addition, it should be borne in mind that both the Government and the BOT operators are contractually bound by the terms of the franchises. Any variation of the scope of the franchises should be handled according to the laws of Hong Kong.

Establishing a Fund to Stabilise the Tunnel Tolls

15. Members have suggested the possibility of setting up a Toll Stability Fund (TSF) to pay off BOT operators such that they would defer toll increases which they would otherwise be entitled to.

16. According to the Western Harbour Crossing Ordinance (Cap. 436) and the Tai Lam Tunnel and Yuen Long Approach Road Ordinance (Cap. 474), provisions have been made for the establishment of a TSF for the respective tunnels. Under the two Ordinances, any actual net revenue exceeding the specified limit for the year will be paid into a TSF. The money in the TSF will be paid to the franchisee to defer toll increases which the franchisee would otherwise be entitled under the governing legislation.

17. It should be noted that the TSFs to be set up under the two Ordinances can only be used to pay the specific BOT operator of the relevant franchise. Pooling of TSFs is not provided for because :-

- (a) it involves major variations of the contractual rights of BOT operators; and
- (b) it will lead to cross subsidy of motorists plying through loss making tunnels by motorists using tunnels which are generating profits. This will lead to more frequent toll increases for the latter than otherwise would be the case.

18. The other alternative would be to set up the TSF by public funds. This involves substantial recurrent expenditure from public coffers and is tantamount to direct subsidy of BOT operators and motorists by the taxpayers. This goes against the principles set out in paragraph 2.

Extending the Franchise Period in Return for a Lower Rate of Toll Increase

19. The franchise period was one of the key terms of the franchise agreement between the Government and the BOT operator. Any change to the franchise terms, including the franchise period, requires consent from both the Government and the BOT operator. To re-open a done deal is a decision which we cannot take lightly. Such a course of action will inevitably create uncertainty as the franchisee could and would make use of this opportunity to make new demands.

20. In addition, toll revenue accrued after the expiry of BOT franchise becomes part of the General Revenue under normal circumstances. To extend the BOT franchise will divert such income to BOT operators. This will in effect be a form of direct subsidy to BOT operators, as well as motorists, by way of General Revenue foregone.

Establishment of a Tunnels and Bridges Authority

21. This is a suggestion for the Government to buy back the ownership of all BOT tunnels and bridges. A public authority i.e. the Tunnels and Bridges Authority (TBA) will then be entrusted with the ownership and management of these facilities. It is also suggested that TBA may issue bonds or have its shares listed on the stock market to fund its operations and development of new facilities.

22. Buying back BOT tunnels and bridges will involve enormous capital spending. Whether this is an area of priority in terms of resources allocation is an area we will need to look at carefully. Also, the investment community will expect the TBA to have the autonomy to set tolls if it were to issue bonds or get listed, the implications of which will also require careful consideration.

Redistribution of Tunnel Traffic by Toll Alignment

23. It has been suggested that traffic throughput of the three cross harbour tunnels would be more evenly distributed if tolls charged by these tunnels are aligned. In considering this suggestion, we need to address a number of complex issues :-

- (a) some of the tunnels are in private hands. The Government has no effective control on their toll levels which are determined by toll adjustment mechanisms stipulated in their respective governing legislation;

- (b) the private tunnels are different in terms of franchise period, shareholding interest, construction cost, operating cost and profit and loss situation etc;
- (c) as toll receipts from Government tunnels are part of the General Revenue, the revenue implications of any proposal to divert traffic from the Cross Harbour Tunnel must be carefully considered; and
- (d) BOT operators have certain expectations on the return on their investments. They would expect a toll adjustment mechanism which could provide some certainty on their expected return under the redistribution scheme.

ADVICE SOUGHT

24. Members are requested to note the content of this paper.

Transport Bureau
February 2002