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Panel on Transport

Background brief on measures to rationalize utilization of Build-Operate-Transfer tunnels

Purpose

This paper provides background information on the Build-Operate-Transfer (BOT) mode and the existing BOT tunnels in Hong Kong, and summarizes major concerns expressed by the Panel on Transport about the BOT tunnels.

Background

2. Currently, there are four BOT tunnels in Hong Kong, namely, the Eastern Harbour Crossing (EHC), Western Harbour Crossing (WHC), Tate's Cairn Tunnel (TCT) and Route 3 (Tai Lam Tunnel). They were constructed at different times and their operations are governed by their respective legislation. The key information on the BOT tunnels are as follows –

	EHC	WHC	TCT	Route 3
Franchise term	8/1986 – 8/2016	8/1993 – 8/2023	7/1988 – 7/2018	5/1995 – 5/2025
Commissioning date	9/1989	4/1997	6/1991	5/1998
Project cost	\$2.1 billion	\$7.5 billion	\$1.9 billion	\$7.2 billion
Design daily capacity	78 500	118 000	78 500	118 000
Daily traffic	61 010	44 373	55 137	47 500

3. BOT tunnels are owned and managed by franchisees over a franchise period. According to the Administration, the BOT mode encompasses two major principles –

- (a) The BOT mode is a good illustration of the "big market, small government" principle, and is an effective means to encourage private participation and optimise the use of public resources.
- (b) As the franchisee of a BOT tunnel is required to make substantial upfront capital investment, it should be given the opportunity to make a reasonable return on its investment, although it is also expected to bear the commercial risk.

Uneven distribution of tunnel traffic

Road harbour crossings

4. Due to the differences in their locations and toll levels, the distribution of traffic among the three road harbour crossings has not been even. The daily traffic throughput of CHT, EHC and WHC from 2000 to 2006 is set out below –

Year	CHT	EHC	WHC
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
2004	121 672	73 478	39 188
2005	122 854	63 865	41 188
2006	123 866	61 010	44 373

Tate's Cairn Tunnel

5. Apart from the three road harbour crossings, the Panel has also been following up on measures to rationalize the utilization of TCT and alternative routes to TCT including Lion Rock Tunnel (LRT) and Shing Mun Tunnels (SMT). Their daily average traffic flow from 2000 to 2006 is set out below –

Year	TCT	LRT	SMT
2000	63 272	92 106	54 199
2001	64 020	90 874	53 794
2002	62 736	89 789	54 558
2003	60 924	88 030	52 989

2004	61 067	87 716	53 325
2005	57 305	87 600	53 142
2006	55 137	89 166	52 822

Route 3 (Tai Lam Tunnel)

6. The Panel has also been concerned about possible ways to achieve a more balanced traffic distribution between Route 3 and the alternative, non-tolled Tuen Mun Road (TMR). The daily traffic throughput of Route 3 was 47 500 in 2006, against the design capacity of 118 000 vehicles.

Toll adjustment mechanism

7. One of the key features of the BOT franchises is the toll adjustment mechanism. Among these four tunnels, two types of toll adjustment mechanisms are adopted: –

- (a) For both Route 3 and WHC, the governing legislation has already provided for a specified toll adjustment mechanism. In brief, the legislation has stipulated that the franchisee may effect toll increases on certain specified dates. However, if the franchisee's actual net revenue in any year falls short of the minimum estimated net revenue specified in the legislation for that year, the franchisee may advance the toll increase.
- (b) As for TCT and EHC, the legislation has provided that the tolls may be varied by agreement between the Government and the franchisee. If an agreement cannot be reached, either party may submit the question of the variation of tolls for arbitration. The legislation has not set out the criteria for determining toll adjustments. It has, however, stipulated that if the matter is submitted for arbitration, the arbitrators shall be guided by the need to ensure that the franchisee is reasonably but not excessively remunerated, having regard to, inter alia, any material change in the economic conditions of Hong Kong since the enactment of the legislation, or since the tolls were last determined.

8. The last statutory toll increase of WHC took effect on 31 July 2008 but the franchisee also decided to offer greater concessions to all types of vehicles so that the actual toll levels would remain unchanged. The last statutory toll increase of Route 3 was effected on 19 August 2007. The franchisee decided to

reduce the concessions for certain types of vehicles starting from the same date.

9. The EHC franchisee twice pursued arbitration, in 1996 and 2003 respectively, after the Government had rejected its applications for toll increase. On the first occasion, a Final Interim Award was made by the Arbitrator in March 1997 which specified that the toll for private cars and taxis should be increased by \$5 (from \$10 to \$15) with corresponding increases for other types of vehicles with effect from 1 January 1998. As for the Arbitrators' Award made in 2005, the arbitrators determined that the tolls for private cars and taxis be increased by \$10 from \$15 to \$25 with corresponding increases for other vehicles with effect from 1 May 2005¹.

10. TCT has had toll increases that came into effect in May 1995, November 1996, January 2000 and August 2005 respectively. Another toll increase will take effect from 30 November 2008.

Measures to rationalize use of BOT tunnels

Mainland experience

11. In exploring ways to optimize the utilization of the road harbour crossings, the Administration had commissioned a consultancy study on the Mainland and overseas experience in the provision and operation of tunnels. The study showed that the arrangement adopted in four Mainland cities covered in the study (i.e. Shanghai, Guangzhou, Wuhan and Chongqing) was similar to an earlier suggestion made by Members of establishing a Tunnels and Bridges Authority (TBA) in Hong Kong. The TBA was expected to own and operate all tunnels and bridges. To achieve this, the Government would have to buy back the ownership of all BOT tunnels. The Administration's view in 2003 was that such a move would involve enormous capital spending. Given the budget constraint and the need to contain government expenditure, it was questionable whether such a course of action could be justified.

Measures to enhance access and the utilization of the BOT tunnels

12. The Administration has been working on various measures to rationalize the utilization of the BOT tunnels, including erecting clear traffic signs to direct traffic to the tunnels, introducing bus-only lanes on tunnel approaches to give priority to mass carriers in accessing the tunnels, road widening and provision of direct road links between tunnel approaches and major road corridors to increase

¹ The franchisee has subsequently agreed that the toll increase for empty taxis and light buses be deferred to 1 July 2005 and 1 October 2005 respectively.

the accessibility of the tunnels, and providing road markings and additional directional signs to guide motorists to tunnels that are under-utilized. The Administration has also pushed ahead with the development of a comprehensive Intelligent Transport System to enable road users to make informed choices on their routings through access to real-time road traffic information on the time required to cross the harbour using the three different cross harbour tunnels.

13. The Administration also encourages 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 some of the examples.

Other possible measures

14. There are also other suggestions from different parties on possible measures to achieve a more balanced traffic distribution among the three road harbour crossings. These measures are broadly categorized into three groups –

- (a) Toll-related measures, such as overall increase in CHT Tolls, peak hour surcharge at CHT, surcharge and rebate at CHT, variable toll adjustment system at CHT, as well as toll increase at CHT and toll reduction at WHC/THC;
- (b) Franchise-related measures, including buying out the franchises of WHC/EHC, selling CHT to the franchisees of WHC/EHC, common ownership for CHT, WHC and EHC, and extension of franchisees of WHC and EHC; and
- (c) Other measures, such as building a fourth road harbour crossing or expanding the capacity of CHT, restricting the use of CHT and enhancement of ferry services.

15. The Administration has indicated that it maintains an open position on these suggestions. It considers that whichever option to be selected must be in line with the following principles –

- (a) it should bring about overall benefit to the public;
- (b) it should be fair to taxpayers;
- (c) it should help alleviate traffic congestion in the tunnels and on the adjacent strategic roads and junctions.

16. According to the Administration, where the option involves changes to the ownership or franchises of existing crossings, the following additional principles would also be of paramount importance –

- (a) there should be a fair valuation of the tunnels concerned, especially CHT, as it is a valuable public asset;
- (b) it should make commercial sense to the franchisee(s); and
- (c) it should be accompanied by a toll adjustment mechanism that was acceptable to the public, the Government and the tunnel franchisees.

Major views expressed by the Panel on the BOT tunnels

17. Members have expressed views and concerns about the utilization of the existing BOT tunnels in Hong Kong during past discussions held by the Panel on the Government policy on tunnel utilization and relevant measures as well as on applications for statutory toll increases by tunnel companies.

Government policy on tunnel utilization

18. The Panel has all along been concerned about the toll increases of the road harbour crossings. Members consider that the toll increases might induce other public transport operators to raise the fares of their services, and aggravate the problem of uneven distribution of traffic amongst the three road harbour crossings. The Panel has called on the Administration to formulate a long-term policy to optimize the use of valuable tunnel resources.

19. In reviewing the traffic implications of tunnel toll increases and measures to promote accessibility and utilization of the BOT tunnels at the Panel meeting on 15 December 2000, the Panel passed a motion urging the Administration to 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.

20. Members also made various suggestions to improve the utilization of BOT tunnels for the Administration's consideration. 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.

21. In reviewing the toll increase of WHC at the meeting on 13 February 2003, the Panel reiterated its concern that the WHC toll increase would inevitably aggravate the existing congestion at CHT and EHC. Apart from urging the tunnel company to consider deferring the toll increase, the Panel examined with the Administration measures to enhance the accessibility and utilization of WHC. Members also called on the Administration to consider 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.

Toll increase of EHC in 2005

22. When the Panel was briefed on the outcome of the arbitration pursued by the EHC franchisee in March 2005, members expressed grave concern about the substantial increase in the EHC tolls and the resultant economic and traffic implications. Members considered that the EHC toll increase might induce public transport operators and the trucking industries to raise the fares of public transport services and delivery charges and aggravate the traffic congestion at CHT.

23. The Panel passed a motion at its meeting on 18 March 2005 expressing astonishment and strong dissatisfaction over the far excessive toll increase of the EHC. The Panel requested the tunnel company to consider deferring the toll increase and the Administration to review the high toll levels of the three road harbour crossings taking prudent consideration of the interest of the general public. The Administration was also urged to come up with measures to improve the uneven distribution of traffic among the three road harbour crossings.

Application for the 2005 toll increase by Tate's Cairn Tunnel Company Limited (TCTC)

24. The Panel discussed the application for the 2005 toll increase by TCTC on 2 February 2005. Panel members were worried that the proposed toll increase would aggravate the traffic congestion at LRT and induce other public transport operators to increase their fares. They called on the Administration to request the tunnel company to defer the toll increase. At the meeting, the Panel passed the

following motion –

"In view of the gradually improving financial position of TCTC Limited, this Panel considers it inappropriate to increase the tunnel tolls at this stage."

25. On 10 June 2005, the Government published in the Gazette the new Schedules to reflect the toll increases of TCT and Tai Lam Tunnel and Yuen Long Approach Road. The Panel was disappointed that the Administration did not consult the Panel prior to gazettal of the notices. The Panel discussed the matter on 15 June 2005 with the Administration and the tunnel companies. The Panel urged the Administration to review the decision of allowing the tunnel companies to increase their tolls and to review the effectiveness and appropriateness of using the BOT approach in taking forward infrastructure projects. The Panel passed a motion urging the Administration to withdraw the Gazette notices on the toll increases of TCT (L.N. 93 of 2005) and Route 3 (Country Park Section) (L.N. 95 of 2005).

Proposals for improving the distribution of traffic among the three road harbour crossings

26. In April 2005, the Panel was briefed on the Administration's proposals for improving the distribution of traffic between the three road harbour crossings. In order to facilitate members' further discussion on the issue, the Panel requested the Research and Library Services Division to conduct a research study on the operation of toll roads, bridges and tunnels in selected places. The Panel took the view that tunnel tolls should be set at affordable levels which allowed the franchisees of BOT tunnels to earn a reasonable rate of return and the use of existing tunnel resources be maximized to improve traffic circulation. As uneven distribution of traffic among different BOT tunnels had huge economic implications for the community, the Panel considered that there was an urgent need to find solutions which would best protect the interests of the public and be acceptable to both the Government and the franchisees.

Application for the 2008 toll increase by TCTC

27. On 25 April 2008, the Administration briefed the Panel on the application of TCTC for toll increase which ranged from 13% to 28%. The Panel was concerned about the traffic implications of the proposed toll increases, as the toll disparity between TCT and LRT would further increase and vehicles would be diverted to LRT as a result. Members urged the Administration to map out other measures to obviate the need for the toll increase, such as extending TCTC's franchise or buying back TCT at a reasonable price. The Panel considered the rate of the proposed toll increases, at over 20% on average, was unacceptable to

the public. The Panel passed a motion at the meeting expressing strong opposition to the substantial increase in tolls for TCT and urging the Government to reject it.

28. After the Panel meeting, TCTC agreed in July 2008 to revise the application with the increase ranging from 9% to 20% for different vehicle types. In parallel, the Administration has commenced discussion with TCTC to explore the option of franchise extension.

Latest developments

29. At the special meeting of the Panel on 24 October 2008, in response to the recent public call for the Government to buy back CITIC Pacific's shares in WHC and in EHC, the Secretary for Transport and Housing (STH) informed members that the Administration would commission a consultancy study to make recommendations. In response to members' views, STH indicated that the consultancy study would proceed in parallel with the Administration's negotiation with relevant parties.

30. At the request of the Panel, the Administration will brief the Panel on its progress of work in taking measures to rationalize the utilization of the existing BOT tunnels at the regular meeting of the Panel to be held on 28 November 2008.

31. A list of relevant papers is in the **Appendix**.

Council Business Division 1
Legislative Council Secretariat
27 November 2008

Measures to rationalize utilization of Build-Operate-Transfer tunnels
List of relevant papers

Date of meeting	Committee	Minutes/Paper	LC Paper No.
15.12.2000	Panel on Transport	Administration's paper on "Traffic Implications of Tunnel Toll Increases"	CB(1)307/00-01(04) http://www.legco.gov.hk/y r00-01/english/panels/tp/p apers/a307e04.pdf
		Minutes of meeting	CB(1)458/00-01 http://www.legco.gov.hk/y r00-01/english/panels/tp/m inutes/tp151200.pdf
22.2.2002	Panel on Transport	Administration's paper on "Government Policy and Provision and Operation of Tunnels"	CB(1)1085/01-02(04) http://www.legco.gov.hk/y r01-02/english/panels/tp/p apers/tp0222cb1-1085-4e. pdf
		Administration's supplementary information on "Government Policy on the Provision and Operation of Tunnels"	CB(1)1596/01-02(01) http://www.legco.gov.hk/y r01-02/english/panels/tp/p apers/tp0222cb1-1596-1e. pdf
		Minutes of meeting	CB(1)1557/01-02 http://www.legco.gov.hk/y r01-02/english/panels/tp/m inutes/tp020222.pdf
13.2.2003	Panel on Transport	Administration's information paper on "Western Harbour Crossing Tolls"	CB(1)888/02-03(01) http://www.legco.gov.hk/y r02-03/english/panels/tp/p apers/tp0213cb1-888-1e.p df
		Minutes of meeting	CB(1)1455/02-03 http://www.legco.gov.hk/y r02-03/english/panels/tp/m inutes/tp030213.pdf

Date of meeting	Committee	Minutes/Paper	LC Paper No.
25.4.2003	Panel on Transport	Administration's paper on "The Provision and Operation of Tunnels and Tollways – Mainland and Overseas Experience"	CB(1)1457/02-03(03) http://www.legco.gov.hk/yr02-03/english/panels/tp/papers/tp0425cb1-1457-3e.pdf
		Minutes of meeting	CB(1)1677/02-03 http://www.legco.gov.hk/yr02-03/english/panels/tp/minutes/tp030425.pdf
28.5.2004	Panel on Transport	Administration's information paper on "Improvement to Traffic Conditions of Tuen Mun Road and Provision and Operation of Tunnels and Tollways"	CB(1)1912/03-04(26) http://www.legco.gov.hk/yr03-04/english/panels/tp/papers/tp0528cb1-1912-26e.pdf
		Minutes of meeting	CB(1)2408/03-04 http://www.legco.gov.hk/yr03-04/english/panels/tp/minutes/tp040528.pdf
18.3.2005	Panel on Transport	Legislative Council Brief on "Arbitration on the Toll Increase of the Eastern Harbour Crossing"	ETWB(T)CR1/3/4651/92 http://www.legco.gov.hk/yr04-05/english/panels/tp/papers/tp_etwb_t_cr13465192.pdf
		Minutes of meeting	CB(1)1563/04-05 http://www.legco.gov.hk/yr04-05/english/panels/tp/minutes/tp050318.pdf
22.4.2005	Panel on Transport	Background brief on "Distribution of traffic amongst the three road harbour crossings" prepared by the Legislative Council Secretariat	CB(1)1293/04-05 http://www.legco.gov.hk/yr04-05/english/panels/tp/papers/tp0422cb1-1293-e.pdf

Date of meeting	Committee	Minutes/Paper	LC Paper No.
		Administration's information paper on "Enhancing the Distribution of Traffic at the Three Road Harbour Crossings"	CB(1)1298/04-05(03) http://www.legco.gov.hk/yr04-05/english/panels/tp/papers/tp0422cb1-1298-3e.pdf
		Minutes of meeting	CB(1)1833/04-05 http://www.legco.gov.hk/yr04-05/english/panels/tp/minutes/tp050422.pdf
19.12.2005	Panel on Transport	Administration's information paper on "Progress Update on Possible Measures to Rationalize Utilization of BOT Tunnels"	CB(1)526/05-06(02) http://www.legco.gov.hk/yr05-06/english/panels/tp/papers/tp1219cb1-526-2e.pdf
		Minutes of meeting	CB(1)822/05-06 http://www.legco.gov.hk/yr05-06/english/panels/tp/minutes/tp051219.pdf
24.2.2006	Panel on Transport --	Research Report on "Operation of Toll Roads, Bridges and Tunnels in Selected Places"	RP03/05-06 http://www.legco.gov.hk/yr05-06/english/sec/library/0506rp03e.pdf
		Information Note on The Adoption of the Build-Operate-Transfer Model and Its Variants in Developing Transport Infrastructures in Selected Places prepared by Research and Library Services Division	IN13/05-06 http://www.legco.gov.hk/yr05-06/english/sec/library/0506in13e.pdf
		Information Note on Toll Increase of the Eastern Harbour Crossing prepared by Research and Library Services Division	IN14/05-06 http://www.legco.gov.hk/yr05-06/english/sec/library/0506in14e.pdf

Date of meeting	Committee	Minutes/Paper	LC Paper No.
24.10.2006	Panel on Transport	Administration's information paper on "Western Harbour Crossing Tolls"	CB(1)1963/05-06(01) http://www.legco.gov.hk/yr05-06/english/panels/tp/papers/tpcb1-1963-1e.pdf
		Administration's information paper on "Route 3 (Country Park Section) Tolls"	CB(1)2185/05-06(01) http://www.legco.gov.hk/yr05-06/english/panels/tp/papers/tpcb1-2185-1e.pdf
5.5.2007	Panel on Transport	Administration's information paper on "Measures to Rationalize the Utilization of Route 3 and the Non-tolled Tuen Mun Road"	CB(1)1521/06-07(02) http://www.legco.gov.hk/yr06-07/english/panels/tp/papers/tp0505cb1-1521-2-e.pdf
		Minutes of meeting	CB(1)1676/06-07 http://www.legco.gov.hk/yr06-07/english/panels/tp/minutes/tp070505.pdf
9.7.2007	Panel on Transport	Administration's information paper on "Measures to Rationalize Utilization of the Three Road Harbour Crossings"	CB(1)2023/06-07(04) http://www.legco.gov.hk/yr06-07/english/panels/tp/papers/tp0709cb1-2023-4-e.pdf
		Minutes of meeting	CB(1)2408/06-07 http://www.legco.gov.hk/yr06-07/english/panels/tp/minutes/tp070709.pdf
30.10.2007	Panel on Transport	Administration's information paper on "Route 3 (Country Park Section) Toll Increase"	CB(1)2265/06-07(01) http://www.legco.gov.hk/yr06-07/english/panels/tp/papers/tpcb1-2265-1-e.pdf
		Administration's information paper on "Western Harbour Crossing Tolls"	CB(1)2205/06-07(01) http://www.legco.gov.hk/yr06-07/english/panels/tp/papers/tpcb1-2205-1-e.pdf
28.1.2008	Panel on Transport	Administration's paper on "Western Harbour Crossing Tolls"	CB(1)533/07-08(01) http://www.legco.gov.hk/yr07-08/english/panels/tp/papers/tpcb1-533-1-e.pdf

Date of meeting	Committee	Minutes/Paper	LC Paper No.
		Background brief on "Western Harbour Crossing" prepared by the Legislative Council Secretariat	CB(1)588/07-08 http://www.legco.gov.hk/yr07-08/english/panels/tp/papers/tpcb1-588-e.pdf
25.4.2008	Panel on Transport	Background brief on "Toll increases by Tate's Cairn Tunnel Company Limited" prepared by the Legislative Council Secretariat	CB(1)1347/07-08 http://www.legco.gov.hk/yr07-08/english/panels/tp/papers/tp0425cb1-1347-e.pdf
		Administration's paper on "Application for Toll Increase by Tate's Cairn Tunnel Company Limited"	CB(1)1317/07-08(03) http://www.legco.gov.hk/yr07-08/english/panels/tp/papers/tp0425cb1-1317-3-e.pdf
		Minutes of meeting	CB(1)1975/07-08 http://www.legco.gov.hk/yr07-08/english/panels/tp/minutes/tp080425.pdf