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Hon. Chan Han-pan, BBS, JP
Chairman
Panel of Transport
Legislative Council

Room 609, Legislative Council Complex
1 Legislative Council Road
Central
Hong Kong

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Dear Hon. Chan,

Re: Toll rationalization scheme of the three road harbour crossings

The benefits to society of \$0.8 billion per year or \$2.8 billion over a 3 years and 7 months period from January 1st, 2020 to July 31st, 2023 is substantial for Government entering into the commercial agreement with the Western Harbour Tunnel Company franchisee before the expiry of its franchise as put forth by the Chief Executive's 2018 Policy Address. When compared to the Government's shouldering of \$1.8 billion, a rough-and-ready 'benefit-cost ratio' of 1.6 looks good *prima facie*. Based on a back-of-the-envelope calculation of the additional toll revenues collected from the government-owned tunnels' \$50-\$40-\$40 higher toll structure for the private car, up from the present \$70-\$20-\$25 toll structure for the Western Harbour Crossing (WHC), the Cross Harbour Tunnel (CHT) and the Eastern Harbour Crossing (EHC), with appropriate factors, the net cost to society is closer to \$0.9 billion, about a half of the Government's guarantee. The resulting higher rough-and-ready 'benefit-cost ratio' of 3 to 1 is even more attractive.

The existing wrongheaded toll structure of the three road harbour crossings has its historical roots in the 30-year Build-Operate-Transfer Scheme of the past when government coffers were presumably not as flushed. The Cross Harbour Tunnel toll for private car was doubled from the initial toll of \$5 to \$10 – from a \$5 'congestion tax' introduced by the late Financial Secretary John Bremridge – on June 1st, 1984. Latent demand resulted in the traffic normalizing soon after by the end of the year. The CHT toll was doubled only one more time from \$10 to \$20 on September 1, 1999 and remained at that level to the present day, economic and traffic growth notwithstanding. On real GDP growth alone, using that as a proxy for income, there are grounds to raise the toll to \$35.70 by at least 78.5% (according to the GDP per capita in chained (2016) dollars from 1999 to the latest available figure of 2017). But the central argument for proposing to double the CHT toll (from \$20 to \$40) and to raise the EHC toll by 70% (from \$25 to \$40) is to rectify the perverse toll structure that we

had inherited.

With the cheapest toll set for the centrally-located CHT tunnel and the more expensive tolls on the sides, naturally the CHT is congested for most of the day, with long queues forming at its entrances. Queuing and tailbacks at harbour crossings are deadweight losses – economic efficiency losses that are not recyclable for society – that accrue to all vehicles affected and their passengers. With the breakdown by public transport, buses and goods vehicles affected by the congestion is a quarter and by non-public transport vehicles including private cars (50%), taxis (23%) and motor cycles (3%) affected is three quarters. With the disaggregation by direction, the vehicles that are affected are those going by tunnel (almost four-fifths) and those not using the tunnel (over one-fifth). Clearly the negative spillover effects from a nonrational toll structure are significant.

The toll rationalization scheme proposes to redistribute the traffic by appropriately raising the tolls of those tunnels with excess demand – CHT and EHC, both dual 2-lane carriageways – and ushering the queued vehicles to the tunnel with excess capacity – WHC, a dual 3-lane carriageway – thereby utilizing the latter's resource more efficiently. Note that the total number of vehicles traversing the Victoria Harbour remains at today's level. Maintaining the status quo at the aggregate level would minimize depriving present motorists from their continued access to cross the harbour. Any lowering of a tunnel toll shall likely exacerbate the traffic congestion further. By bringing demand more in line with supply, a redistribution scheme such as this would have gainers and losers. By revealed preference, it is those whose values of time are higher that stay and pay whereas those with values of time that are lower might change their mode or reduce their vehicular cross harbour trips. For the potentially tolled off, there is a time period of slightly over a year to change modal and route choices in the short term and even locational choices in the longer term. Even so, over a fifth of the traffic not crossing the harbour is adversely affected through no fault of their own. Four-fifths of the traffic that prevailed still gain from the smoothing of the tunnel traffic. Even though only a quarter of the traffic affected by the cross harbour congestion belongs to public transport, buses and goods vehicles, it is these mass carriers that carry people and commercial vehicles that carry goods that would unequivocally benefit from the reduced traffic delay. On a typical weekday, the aggregate travel time saved by public transport passengers (19,400 hours) are even larger than the aggregate travel time by nonpublic transport vehicles (17,600 hours). The time savings come about by weighting the various classes of passengers and vehicles by their respective values of time. Public transport users, who undertake over eight-tenths of total passenger trips in Hong Kong, would naturally welcome any scheme that reduces congestion. However, they form the silent majority even though they are indeed the main beneficiaries. As car owners ourselves, we believe that motorists like us ought to pay for our fair share of road use.

The governmental guarantee of \$1.8 billion for the WHC toll compensation scheme essentially buys the right to freeze any further planned or even unanticipated toll increases on the part of the WHC. Note that with the imminent opening of the Central Wanchai Bypass, the present bottleneck of the surrounding road network at the WHC shall be uncorked and the Western Harbour Tunnel Company Limited shall be in an unfettered position to actualize the private car toll from its present 'concessionary' toll of \$70 to the gazetted toll of \$240 – not to mention the few more times it still has left in its franchise terms to fully recoup its investment by whatever means before its franchise expires. If so, a spillback of traffic from the WHC to the CHT and EHC could not be ruled out. Particularly welcome is the fact that the Government has agreed to cover the franchised bus tolls of those users of the WHC so

that reduction in toll payments would be directly used to forestall any future fare increase in actuality.

Some have argued that we should wait until expiry of the WHC in August 2023 so that all three tunnels' tolling structures could be managed holistically. Yet without the take-if-or-leave-it concrete option as a serendipitous outcome of a negotiation process with a commercial entity, we are concerned that a rational set of toll structure would not be mutually agreed upon even after *ad infinitum* debates and consultations. The passage of a fourth harbour crossing project would need to be evaluated based on a rigorous cost-benefit analysis, whose viability in turn depends on a rational toll structure. Indeed, latent demand would swamp a lot of the benefits of an infrastructure project if the project is mispriced due to the fundamental law of traffic congestion *a.k.a.* as Downs's Law.


Few public projects (including infrastructure projects), if any, can rival the impressive returns such a toll rationalization scheme promises to deliver. The scheme would bring to a good ending the several consultancy studies undertaken in the past decade and a half on measures to tackle the cross harbour congestion conundrum. Other benefits are intangible but nonetheless should be underscored: they include vehicle emissions reduction (of 3,800 tonnes of carbon dioxide per year) which could contribute to Hong Kong's fight against global warming. Vehicular emissions are health hazards so healthcare benefits from reduced asthmatic attacks and related respiratory diseases, especially for the elderly and the young, are no less important.

In conclusion, we fully support this unique benefit-enhancing toll rationalization scheme which is long overdue.

Sincerely yours,



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and Dr. Timothy D. Hau, FCILT
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