

LCQ5: Cross-harbour transport infrastructure

Following is a question by the Hon Chim Pui-chung and a reply by the Secretary for Transport and Housing, Ms Eva Cheng, at the Legislative Council meeting today (May 4):

Question:

Given that cross harbour tunnels have an impact on transport and the economy of Hong Kong, will the Government inform this Council whether it has any plan to construct the fourth road harbour crossing in the near future; if it has such a plan, when and where the harbour crossing will be constructed; if not, of the reasons for that?

Reply:

President,

The Administration's major consideration in deciding whether and when a strategic infrastructure facility should be constructed is the necessity for such a project. Regarding cross-harbour transport infrastructure, we will also monitor the need of the public. Apart from road harbour crossing (RHC) as mentioned by the Hon Chim Pui-chung in his question, cross-harbour railway is also an important infrastructure to satisfy the community's need for cross-harbour facilities.

As a matter of fact, with a population of 7 million people but only a land area of 1,100 sq km, excluding country parks and greenbelts, the actual area of land available for development in Hong Kong is only 200 sq km. Such development intensity is probably the highest in the world. If the 7 million people solely rely on vehicles for their daily trips, a large area of land will be required for the construction of roads, and will also aggravate the problem of roadside air pollution and increase energy consumption. This is not conducive to sustainable development.

As such, making full use of railway and developing it into the backbone of the mass transport system is an important part of Hong Kong's long-term transport strategy. This has taken into consideration the fact that railway is an environmentally friendly, efficient and land-saving mass transportation, and very

much suits the circumstances in Hong Kong. Trains are driven by electricity and will not have roadside emission, and the energy consumption per capita is also lower than that of vehicles. Passenger railway network can provide frequent and speedy transportation service for a large number of passengers. Hong Kong's railway network is largely constructed underground which takes up relatively less ground surface. This helps relieve the burden of constructing additional roads in the urban area where the development intensity is high.

Therefore, we have strived to develop the railway network to meet the need of the society. For better utilisation of railway resources, through the provision of other transport modes (for example buses and minibus), pedestrian walkway systems (for example footbridges, subways, escalators and lifts), park and ride facilities, etc to provide linkage to railway stations, members of the public in areas not directly covered by the railway network are encouraged to use the railway service.

At present, developments in Hong Kong are largely concentrated on both sides of the Victoria Harbour. The north shore of Hong Kong Island and Kowloon already accommodate nearly half of the population and provides 70 percent of the employment opportunities in Hong Kong. The intensity of the railway network in these areas is thus higher, so as to meet the traffic demand, including public demand for cross-harbour trips.

We have a total of three cross-harbour railway links i.e. Tsuen Wan Line running from Tsim Sha Tsui to Admiralty, Tseung Kwan O Line running from Yau Tong to Quarry Bay, and Tung Chung Line running through Kowloon to Hong Kong. Although the utilisation rate for the cross-harbour section of the railway links concerned is quite high during rush hours, there is still reserve capacity, and part of the railway links will only start to saturate in the early 2020s. We are now making every effort to take forward the Shatin to Central Link (SCL). With the full commissioning of the SCL in 2020, it will provide an additional cross-harbour capacity of 85,000 passengers per hour, which will satisfy the cross-harbour transport need of the public in a timely manner. We also anticipate that the SCL could attract some of the passengers who currently use vehicular cross-harbour transport modes (for example buses, private cars, etc) to switch to use the SCL. This will help relieve the burden of the cross-harbour tunnels. It is also anticipated that some passengers who travel via Tsuen Wan Line, Tseung Kwan O Line and Tung Chung Line for crossing the harbour will switch to the SCL for their cross-harbour journey, and this will be conducive to relieving the burden of the existing cross-harbour railway lines.

As regards long term development, the Administration has engaged consultants in mid-March 2011 to review and revise the blueprint for railway development on the basis of the Railway Development Strategy 2000, in order to meet the demand for local and cross-border railway transport until 2031. The need for the fifth cross-harbour railway will be covered.

Notwithstanding the numerous advantages of railway transport, the Administration also recognises that roads and railways have different functions. Apart from the provision of feeder service for the railway network and serving the areas not covered by the railways, roads are in fact essential for commercial vehicle operations. The railway system can hardly serve such functions. As such, the Administration recognises that apart from developing the railway network, there is also a need to continue to develop the road network according to actual need. And in deciding whether and when to construct a fourth RHC as proposed in the question, necessity and feasibility of such a project are the key considerations of the Administration.

According to our current assessment, the total capacity of the three existing RHCs is able to accommodate the vehicles currently using the three RHCs. And upon the opening of a number of new connecting roads currently under construction or planning, the total capacity of the three RHCs will be further increased. Amongst these, Road P2 connecting the vicinity of MTR Airport Express Station in Central and Hung Hing Road in Wan Chai will be fully opened in 2011, while Central-Wanchai Bypass will be commissioned in 2017. Upon the commissioning of all relevant roads, the total capacity of the three RHCs will be increased by 15%. And as the commissioning of the cross-harbour section of the SCL will attract a certain part of the passengers currently using road transport for their cross-harbour trips to switch to the SCL, this will help reduce the number of passengers using road transport. Therefore, the total capacity of the three existing RHCs should be able to meet the overall cross-harbour traffic demand.

Furthermore, the technical difficulties of the proposal will need to be considered in deciding whether a fourth RHC should be constructed. Generally speaking, the construction of cross-harbour tunnel would involve establishing pre-cast yards at suitable location(s) for casting the tunnel units. Concurrently, the seabed along the pre-determined tunnel alignment will be dredged using dredgers to prepare the foundation for accommodating the tunnel units. The tunnel units will be towed

by barges to pre-determined locations and lowered to the foundation. Space around the units will be backfilled to hold them in position. Rock armour will then be placed on top of the units for protection. The seabed will be restored after the completion of works. In view of the needs of the foregoing construction process and the impact on the traffic on both sides of the Victoria Harbour, our conclusion is that there are considerable technical difficulties in the construction of the fourth RHC.

- Firstly, there must be sufficient space for providing the tunnel portals. As the areas on both sides of the Victoria Harbour are already highly developed, there will be considerable difficulties in finding space to build the portals and the necessary connecting roads. Also, traffic will have to be diverted during the construction of the new RHC and its connecting roads. Given that the major roads on both sides of the harbour are already heavily congested, traffic diversion arrangements may create very serious traffic problems. And after completion of the works, these existing roads may not have adequate capacity to cope with the extra traffic brought about by the new RHC.

- Secondly, quite a number of technical issues would have to be resolved in relation to the execution of the tunnel construction works on the Victoria Harbour or the foreshores on both sides, including maintaining road and marine traffic, avoiding impacts on underwater public utilities, accommodating changes in seabed and ground conditions, and avoiding the impact on environment etc, which will be major challenges.

- Moreover, depending on the design, geographical constraints and actual construction, permanent or temporary reclamation of the Victoria Harbour or the foreshores at the two sides would likely be required. Owing to the presumption against reclamation in the harbour under the Protection of the Harbour Ordinance (Cap 531), overriding public need for reclamation must be established to rebut the above presumption before such a project may proceed. How to avoid or minimise the extent of reclamation would be major engineering challenges. And as the total capacity of the three existing RHCs is sufficient to meet the overall cross-harbour traffic demand, it may not be possible to establish the case for an overriding public need.

Indeed, as the construction of the proposed fourth RHC will involve a substantial amount of public expenditure, and rather lengthy planning and construction process, it will not be conducive to alleviating the traffic problem in the short to medium term. In view of the above considerations on various fronts, the

Administration does not have any plan to construct a fourth RHC for the time being. However, we will continue to keep a close watch at the increase in cross-harbour traffic flow, and will conduct timely studies when the need arises, in order to meet the traffic demand in Hong Kong in the long run.

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