For discussion
on 23 November 2001

Legislative Council Panel on Transport

Shenzhen Western Corridor, Deep Bay Link and Route 10

PURPOSE

This paper updates Members on the latest position of the three projects - Shenzhen Western Corridor (SWC), Deep Bay Link (DBL) and Route 10. It also sets out our response to points raised at the previous meeting on 26 October and the public hearing on 8 November 2001.

SHENZHEN WESTERN CORRIDOR AND DEEP BAY LINK

Need for the project

2. The Crosslinks Further Study completed by Planning Department in early 2001 has assessed the future cross-boundary traffic demand and confirmed the need for the SWC to satisfy the future demand. The SWC would facilitate the further development of the container port of Hong Kong as well as the growth in trade between Hong Kong and Southern China. It will help enhance the status of Hong Kong as a business-cum-trade-cum-logistics hub in the Pearl River Delta. The SWC can be expected to bring about substantial economic benefits to Hong Kong. The Study estimates that the net benefit of SWC would be $175 billion (1998 prices) over a 20 year planning horizon from 2000 to 2020.

3. The average total daily vehicular traffic using the existing three boundary crossings at Sha Tau Kok, Man Kam To and Lok Ma Chau in 2 000 was 33 000 vehicles, representing a 32% growth over the past 5 years and an average annual growth of 6%. At present there are 34 000 cross boundary traffic permit holders and we expect the number would increase to 52 000 in 2006. We expect that in 2006 the daily cross

boundary vehicular traffic would exceed the total capacity of 52 000 even with the planned improvement at the crossings. A plan showing the boundary crossings and the connecting roads is at **Annex A**. There is little chance to further expand these three crossings because the existing cross-boundary traffic has already resulted in severe traffic congestion in Shenzhen City Centre. On the Hong Kong side, the congested situation at the crossings have resulted in tailbacks at San Sham Road, Man Kam To Road and Sha Tau Kok Road during peak hours, with volume/capacity[1] (V/C) ratios of 1.2-1.3. During peak seasons, the vehicle queues from the Lok Ma Chau crossing have extended to Fanling Highway and San Tin Highway. There is a pressing need to build the fourth boundary crossing i.e. the SWC to cater for such traffic need.

4. The SWC will also facilitate the growing movement of people between Hong Kong and Guangdong and several Members have also asked the Administration to expedite the implementation of SWC during the Debate on the Motion of Thanks of the 2001 Policy Address.

5. The function of the DBL is to connect the SWC with the local highway network. DBL will be connected to Route 10 and Yuen Long Highway at Lam Tei.

Alignments

SWC

6. The landing point of SWC on the Mainland side is Dongjiaotou, Shekou. A landing point located further away from the Shenzhen city centre is chosen in order to divert traffic from the congested existing crossings. Moreover, traffic forecasts indicate much of the cross boundary traffic would be heading towards the Pearl River Delta Region which is to the west of Shenzhen city centre. At Shekou, the SWC

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[1] The capacity here refers to the design of the road. A V/C ratio equal to or less than 1.0 means that the road has sufficient capacity to cope with the volume of vehicular traffic under consideration. A V/C ratio above 1.0 indicates the onset of mild congestion; above 1.2 indicates more serious congestion with traffic speeds progressively deteriorating with further increase in traffic.

could be conveniently connected to the highway network (i.e. Guangshen Highway) leading to other parts of Southern China. As much area of Shekou is already developed, the most suitable landing point would be Dongjiaotou which could provide adequate space for the cross boundary facilities.

7. On Hong Kong side, three different points were identified, namely Sheung Pak Nai, Ngau Hom Sha and Ngau Hom Shek. Any point further north or south along the coast will require a longer bridge leading to more piers and adverse effect on water flow in Deep Bay. Ngau Hom Shek is considered the most suitable of the three because of the least impact on fish ponds and the ecology. (A detailed analysis is at **Annex B**.)

DBL

8. The latest proposed alignment of DBL is shown at **Annex C** which will avoid the Yuen Tau Shan burial ground. We shall now adopt a viaduct form of construction and there will still be sufficient buffer zone to contain any noise and visual impact of the viaduct on the proposed Hung Shui Kiu New Development Area (HSK NDA).

9. We would also provide slip roads from the DBL to the Ha Tsuen/Hung Shui Kiu areas for vehicles to gain access to Yuen Long and Tin Shui Wai. There will not be a direct road connection from Ngau Hom Shek to Tin Shui Wai because such a road would bring about significant adverse environmental impacts. If it runs along the northern boundary of Tin Shui Wai, it would affect the wet land along the Deep Bay coast and the Mai Po Ramsar site, and if it runs across Tin Shui Wai, it would cause considerable noise and air quality impacts to residents.

10. The Route 3 CPS operator has proposed a more northerly alignment linking DBL and Route 3. Such a connection would bisect the HSK NDA which is not acceptable from the planning point of view. Furthermore, the SWC and DBL together with Route 10 will provide a strategic direct link from North Lantau to the boundary and the DBL has therefore to be linked directly to the northern section of Route 10. We have also reviewed the design and programme of Route 10 and this will

be further addressed in paragraphs 16 to 29.

Traffic forecasts

11. Traffic forecasts indicate that the daily traffic flow of SWC and DBL in 2006 would be 28 000 vehicles, much less than the capacity of the crossing of 44 000. We expect that traffic would build up incrementally in the first few years after the completion of the SWC/DBL. Moreover, the commissioning of West Rail in end 2003 would help to reduce land transport on Tuen Mun Road.

Resumption and Clearance

12. The DBL will involve resumption of private land and clearance of a number of structures on government land affecting people who either live there or carry on commercial or industrial activities there. We are now reviewing the compensation arrangement.

13. Part of the existing oyster bed in Deep Bay which is currently under an annual tenancy will be affected by the SWC project. Genuine oyster farmers cultivating at this oyster bed at Deep Bay as affected by the SWC will be granted ex-gratia allowance.

Environmental Issues

14. The cumulative ecological impact of the SWC works of both the Shenzhen and Hong Kong sides on Deep Bay will be assessed in the EIA report for the SWC.

A FIFTH LAND BOUNDARY CROSSING

15. The Crosslinks Further Study has also considered the need for the Lingdingyang Bridge but for a much longer time frame. There are also proposals to construct a bridge linking Hong Kong, Zhuhai and Macau. The timing and alignment of this fifth land boundary crossing would be further looked into in the Hong Kong 2030: Planning Vision and Strategy Study.

ROUTE 10

Alignment

16. The section of Route 10 between north Lantau and So Kwun Wat ("the Southern Section") was gazetted under the Roads (Works, Use and Compensation) Ordinance in July 2000. Two link roads to connect with Tuen Mun Road were included in the scheme –

(a) a dual 2 – lane So Kwun Wat Link Road which connects Route 10 to Tuen Mun Road at So Kwun Wat, for vehicles to enter or leave the Southern Section; and

(b) a dual 2 – lane Siu Lam Link Road which connects Route 10 to Tuen Mun Road at Siu Lam, for vehicles to enter or leave the Northern Section.

A plan showing the original alignment of Route 10 is at **Annex D**.

17. During the objection period, 577 objections were received. Most of them were from the residents of Palatial Coast at Siu Lam. They were concerned about the environmental impact of the Siu Lam Link Road and traffic impact of it on Tuen Mun Road. Lo Tsing Shan Tsuen at So Kwun Wat also objected to the gazetted scheme in view of the environmental impacts of the So Kwun Wat Link Road.

18. Some members of the Tsuen Wan District Council have asked to investigate whether an interchange could be provided at Tsing Lung Tau for Route 10 and Tuen Mun Road.

19. Some green groups have asked for investigation into the possibility of connecting Tsing Lung Bridge directly to the North Lantau Highway. Under the gazetted scheme, the southern end of Route 10 – NLYLH will connect to the proposed Chok Ko Wan Link Road at a proposed interchange at Pa Tau Kwu before joining the North Lantau Highway at Yam O Interchange. Such an alignment was chosen with a number of factors in mind, including the need to provide access to the proposed container port facilities in Lantau and to facilitate the possible

long term extension of Route 10 to Hong Kong Island.

20. Having regard to the public views and the latest circumstances, we have considered the following issues in the last several months –

(a) the possibility of providing a direct connection between Tsing Lung Bridge and Tuen Mun Road and between Tsing Lung Bridge and the North Lantau Highway;

(b) alternative alignments for the Siu Lam Link Road; and

(c) the alignment of So Kwun Wat Link Road.

21. After further investigation, we have found it feasible to provide an interchange between Tsing Lung Bridge and Tuen Mun Road because we have identified a new design for the Tsing Lung Bridge through the use of a shallow streamline deck section. This new design enables us to provide a hardshoulder in addition to the dual 3-lane on the bridge which would provide space for accommodating the merging and diverging lanes for the interchange slip roads at Tsing Lung Tau.

22. A direct connection would also be provided between the bridge and the North Lantau Highway. The section of the North Lantau Highway between the existing toll plaza and Yam O Interchange will be widened to cope with the traffic from Tsing Lung Bridge. Under this arrangement, traffic from Tsing Lung Bridge would need to use the existing toll plaza for the Lantau Link. In view of the uncertainties of the use of the coastal area at Northeast Lantau, we would delete the coastal section of Route 10 from the project. Any future road connections for northeast Lantau would depend on the scope of the new developments planned for the area.

23. As regards the Siu Lam Link Road, we have examined the feasibility of a dual 2 – lane tunnel from Route 10 at Siu Lam to Tuen Mun Road at Sham Tseng. The tunnel would function as a route parallel to Tuen Mun Road and deliver traffic from the north west New Territories through the Northern Section of Route 10 to Ting Kau Bridge or to Tsuen Wan. The tunnel would also reduce traffic on Tuen Mun Road between

Siu Lam and Sham Tseng. From the initial investigation, we have found the tunnel feasible and are prepared to pursue it to replace Siu Lam Link Road.

24. As regards the So Kwun Wat Link Road, there are a number of constraints that dictate its alignment. These constraints include a designated village area, Tai Lam Country Park, Water Supplies Department's facilities, planned developments, drainage impact and fung shui impact. There are also technical difficulties in achieving desirable highway design standards for certain movements, especially the northward movement from the link road onto Route 10 and the southward movement onto Tuen Mun Road from the link. We have reviewed alternative alignments of the So Kwun Wat Link Road and we believe that the gazetted alignment represents a most suitable solution in view of the constraints involved. However, we would delete the east arm of So Kwun Wat Link Road which connects to Tuen Mun Road as such a movement is now found feasible at Tsing Lung Tau.

25. To recap, we will amend the gazetted scheme of the Southern Section of Route 10 in the following ways –

(a) add an interchange between Tsing Lung Bridge and Tuen Mun Road at Tsing Lung Tau;

(b) add slip roads between Tsing Lung Bridge and the North Lantau Highway and widen the section of the latter between the existing toll plaza and Yam O Interchange;

(c) delete the gazetted section along the coast of North Lantau;

(d) delete Siu Lam Link Road and replace it with a tunnel/viaduct scheme between Siu Lam and the approaches to Ting Kau Bridge to be separately gazetted as part of the Northern Section of Route 10; and

(e) delete the east arm of the So Kwun Wat Link Road.

The amendments are shown at **Annex E**.

Overall Planning and Implementation Programme

26. Route 10 is a strategic highway project featured in the Third Comprehensive Transport Study to provide an alternative external road link for Lantau and the airport, to meet anticipated population and employment growth in North West New Territories and to meet forecast traffic demand generated by cross boundary activities. It will be required as the fourth north-south link besides Tuen Mun Road, Route 3 CPS and Tolo Highway. We have now further reviewed the programme for both sections of Route 10 in the light of initiatives to accelerate the development of logistics industry in Hong Kong and to attract tourists from Mainland, both of which could increase the traffic demand between the Mainland and Hong Kong.

27. We now plan to proceed with the construction of Route 10 in one-go. A start is planned for 2003. The construction of the Tsing Lung Bridge would, because of its engineering complexity, take five years to complete and that means completion of Route 10 is expected in 2008. To mitigate concerns about the gap between the completion of SWC/DBL and Route 10 causing congestion on Tuen Mun Road, we will look into the possibility of bringing forward the section of Route 10 linking DBL to the urban area (i.e. Lam Tei Tunnel and Sham Tseng Tunnel) by about 12 months with a view to ensuring better interface between SWC/DBL and Route 10.

28. Route 10 Northern Section consists of two tolled tunnels – the Lam Tei Tunnel and Siu Lam – Sham Tseng Tunnel. The tolling strategy for these two tunnels would be considered nearer the time of completion taking into account the situation at that time covering public acceptance and affordability, the economic situation, the need for traffic diversion and the toll levels of alternative routes.

Environmental Issues

29. The Director of Environmental Protection has issued the environmental permit for Route 10 Southern Section on the condition that works could not start before the EIA Report for the Northern Section is approved. We would submit a revised EIA Report for the whole

Route 10 taking into account the revised alignment. We would also consider the cumulative impact of SWC, DBL and Route 10 in the EIA Report.

OVERALL TRANSPORT PLAN

30. The four boundary crossings, i.e. Man Kam To, Lok Ma Chau, Sha Tau Kok and SWC, would be served by four north-south road links, i.e. Tolo Highway in the east, Tuen Mun Road in the west, Route 3 providing direct access to the Kwai Chung Container Port and connection with Lantau Link via Tsing Yi for access to Lantau, and Route 10 providing a link between North West New Territories to North Lantau.

THE WAY FORWARD

31. We plan to seek the approval of the Public Works Sub-Committee of the Finance Committee in December 2001 to undertake the detailed design of the SWC, DBL and Route 10.

ADVICE SOUGHT

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

Transport Bureau
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