

For discussion  
on 22 January 2010

## LEGISLATIVE COUNCIL

### **Panel on Transport and Panel on Environmental Affairs** **Rationalisation of Bus Routes to Improve Air Quality**

#### **Purpose**

This paper briefs Members on the background, planning principles and guidelines, and the proposed way forward in pursuing franchised bus service rationalisation.

#### **Background**

2. In pursuance of our policy to provide a safe, efficient and reliable transport system in a sustainable environment, public transport services are coordinated to better match demand and to minimise wasteful competition and duplication of services. In view of the limited road resources in Hong Kong, priority is given to railways, which are environment-friendly, efficient and reliable mass carriers. At the same time, healthy competition among service providers is maintained to ensure commuters' choice. Whilst franchised buses also play an important role, their role is particularly more prominent in areas not conveniently served by railways. Against this general background, from time to time there is a need to rationalise bus services in response to changes in the transport environment and to maintain sustainability.

#### **Bus Service Rationalisation**

3. Rationalisation of bus services is thus an on-going exercise to achieve the objectives of enhancing bus operation efficiency while meeting passenger demand, reducing traffic congestion and roadside emission, having regard to the changes in passenger demand and the opening of new transport infrastructure.

##### *(a) Reduced Demand for Bus Service*

4. The commissioning of new rail lines over the past few years has increased the carrying capacity of the public transport system and choices for commuters. In consequence, the average daily patronage of franchised bus services dropped from 4.3 million in 2002 to 3.8 million in September 2009.

*(b) Traffic Congestion*

5. In view of the limited road resources in Hong Kong, traffic congestion has always been a problem in busy traffic corridors. A number of the major road sections in busy areas have already reached capacity. In 2008, franchised bus constituted about 30%, 21% and 32% of the respective total traffic in peak hour in Des Voeux Road Central, Causeway Road and Nathan Road. As many bus passengers will start to alight when the buses reach the periphery of the urban area, some of the bus routes are found to have relatively low occupancy rate when they pass through the busy traffic corridors on the way to their termini. Better utilisation of bus resources may help reduce the number of bus trips along these busy corridors, and hence provide some relief to traffic congestion.

**Environmental Benefits of Bus Route Rationalisation**

6. On a territorial basis, franchised buses accounted for about 6% of respirable suspended particulates and 11% of the nitrogen oxides of road transport emission in Hong Kong in 2008. At busy traffic corridors, they could account for up to 40% of the total vehicular emissions. These busy traffic corridors such as Mongkok, Central and Causeway Bay are frequented by many people who are passers-by, residents or persons who work or conduct businesses in the areas. Reducing bus trips is an effective way to mitigate the roadside air pollution and hence the health risk to the people at these locations. The resulting environmental benefits are proportional to the extent of the bus trip reduction. As an illustration, if the number of bus trips in busy corridors is reduced by 10%, the roadside concentrations of respirable suspended particulates and nitrogen oxides could be reduced by up to about 2% and 4% respectively as compared to the 2008 levels. There could be other environmental benefits such as reducing noise nuisance. In addition, as rationalization of bus routes does not involve significant additional costs for implementation, it is assessed by the consultant for the Air Quality Objectives Review as the most cost-effective measure amongst all the proposed emission control measures.

**Planning Principles and Guidelines**

7. Over the years, the Transport Department (TD) has developed a set of general principles and guidelines in planning franchised bus services. These general principles and guidelines are reviewed from time to time by TD with reference to any new initiatives for sustainable and continuous service improvement. District Councils (DCs) are informed of them through the annual consultations on bus route development programmes (RDPs).

## Service Reduction

8. For bus routes with low utilisation and subject to their actual performance, we would implement different measures to enhance their efficiency. Such measures may include adjusting the bus routeing, service frequency and timetable, reducing the number of bus stops, truncation or amalgamation of routes, route cancellation, etc. as appropriate.

### *(a) Frequency reduction*

9. If the average occupancy rate of an individual route is below 85% during the peakiest half hour of the peak period, or below 30% during the off-peak period, consideration would be given to reducing bus deployment. Railway feeder routes, socially essential routes, and routes with peak headway at 15 minutes or more and off-peak headway at 30 minutes or more will be considered on individual merits.

### *(b) Route Cancellation / Amalgamation*

10. If the utilisation of a low-frequency route does not improve (i.e. a bus route with average occupancy rate lower than 50% during peak hour, despite its headways having already been lengthened to 15 minutes and 30 minutes during peak hour and off-peak hour respectively), we will consider proposing canceling the route or amalgamating it with other route(s), after evaluating the impact on passengers and taking account of alternatives available, including the service levels and fares of these alternatives.

### *(c) Route Truncation*

11. To optimise the use of resources, TD will review with relevant bus operators the feasibility of truncating routes, in particular for routes where the majority of the passengers will have alighted en route. In formulating truncation proposals, the following factors will be taken into account -

- (i) the number of affected passengers should not be excessive. As a reference benchmark, TD will examine bus routes with an occupancy rate of not more than 20% to 30% at the proposed truncation points during the peakiest hour;
- (ii) availability of road and kerbside space to accommodate passengers affected who need to interchange for other bus services to their final destinations; and
- (iii) availability of terminal space near the proposed truncation points.

## Service Improvement

12. On the other hand, we may increase the service frequency of bus routes according to the patronage of and passenger demand for existing bus services, or introduce new bus services where circumstances so warrant.

### *(a) Frequency Improvement*

13. If the occupancy rate of any bus route reaches 100% during any half hour of the peak period and 85% during that one hour, or reaches 60% during the busiest one hour of the off-peak period, consideration will be given to the deployment of more vehicles to improve the service level. In increasing the vehicle allocation, priority will be given to redeploying vehicles saved from other rationalisation measures.

### *(b) New Bus Service*

14. If the adjustment described in paragraph 13 above is insufficient to meet demands and no practical alternatives are available, we will give consideration to the provision of new service, with priority for providing new bus service to serve areas that are beyond the catchment area of existing railways or railway feeders. In approving any new bus service, we will also consider the impact of such new service on the traffic condition on major roads, and will as far as possible refrain from providing long haul bus routes or routes that operate via busy districts such as Mong Kok, Tsim Sha Tsui, Central, Wan Chai, Causeway Bay etc.

15. To improve the environment, the efficiency of bus operation and traffic congestion, it has been TD's on-going objective to reduce the number of bus trips along busy corridors (through route cancellation, amalgamation, truncation and frequency reduction) and reducing bus stoppings. If it is inevitable for the new routes or enhanced services of existing routes to operate via the busy districts, the bus operators will have to reduce the same number of trips made by the buses of other routes in the same corridor.

## Development of Bus-Bus Interchange Schemes

16. We have been working with the bus operators to formulate bus-bus interchange schemes at appropriate and feasible locations to enable bus passengers to reach more destinations through interchanging with fare concessions. Such interchange schemes reduce the need for new long haul and direct point-to-point bus services, enable better utilisation of the limited road space and bus resources, enhance the efficiency of the overall bus network, and lessen the traffic congestion and environment problems caused by duplication of bus services.

## **Bus Rationalisation Efforts**

17. Between 2004 and September 2009, a number of new railways came into operation and provided the public with more choices in transport services. During the aforesaid period, in response to changes in the demand of bus passengers, we cancelled 46 bus routes, truncated 19 routes, reduced the frequency of 84 routes. Over the same period, we also introduced 20 new routes and increased the frequency of 86 routes to enhance feeder bus services to rail stations and to meet new passenger demands. As a result of these rationalisation efforts, the number of franchised buses in service decreased from 6,179 in early 2004 to 5,793 in September 2009.

18. Further, over 3,000 bus trips passing through Central, about 2,000 bus trips passing through Yee Wo Street in Causeway Bay and about 1,600 bus trips in Nathan Road per day were removed between 1999 and September 2009, while the number of bus stoppings in the above-said busy corridors were reduced by about 4,800 per peak hour.

19. As a result of the implementation of the various rationalisation schemes over the past few years, the level of service of many routes has been reduced to a relatively thin level. Amongst the 570 existing franchised bus routes, about 14% have average headway of over 15 minutes during peak period, whilst about 59% having average off-peak headway of over 15 minutes.

20. Implementation of rationalisation proposals, after agreement between Government and the bus operators, requires community support at the local level. In the past three years from 2007 to September 2009, we put forth, for local consultation, proposals to cancel 24 routes and to reduce the service level of another 81 routes. These proposals were considered justified on transport grounds. Of these, the DCs consulted objected to 59 of them. The main reasons for the objection include –

- (a) disagreement to the policy of using railways as the backbone of the transport system;
- (b) no direct alternative public transport service. Even if alternatives are available, passengers should be provided with bus choices;
- (c) passengers may need to pay higher fares if they have to interchange between transport modes or routes to reach final destinations;
- (d) greater inconvenience and longer total journey time arising from service reduction or need to interchange between modes or routes; and
- (e) reluctance to accept service reduction on routes which the local community has used for a long period of time despite reduction in passenger demand.

21. It is worth noting that 15 of these rejected cases duplicate with railways, 27 operate on busy corridors, and 26 are long haul routes. Further, in respect of paragraph 20(c) above, in most circumstances passengers having to interchange between transport modes or routes will in fact be offered fare concessions.

### **Future Bus Route Development Programmes**

22. We will continue to plan bus services according to the planning principles and guidelines, and will explain to the travelling public the need for service rationalisation for the sustainable development of Hong Kong. We will also make effort to resolve, as far as practicable, issues of concerns raised by the public who are affected by any rationalisation proposal.

23. As in past years, we will start DC consultations on the future bus RDPs from late January 2010.

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

Transport Department  
Environmental Protection Department

January 2010