LEGISLATIVE COUNCIL PANEL ON TRANSPORT

Transport Information System &
Journey Time Indication System

PURPOSE

At the Panel meeting held on 16 March 2001, Members were advised in the paper on "Application of IT to Transport Management" that, under the Intelligent Transport Systems (ITS) Strategy, two projects, i.e. Transport Information System and Journey Time Indication System were proposed. This paper provides Members with supplementary information.

PROPOSALS

Transport Information System

2. Under the **Transport Information System (TIS)**, we plan to put transport and traffic data into a centralized data warehouse such that information can be shared among Transport Department (TD) offices and that the public can obtain updated transport and traffic information via the Internet. The transport and traffic data include traffic conditions, progress of road works, traffic diversion measures, public transport services, and traffic incident investigation. The TIS will be implemented as one project with three phases.

3. Phase I covers the establishment of a data warehouse, development of an intelligent road network and construction of communication network at the TD Headquarters. To develop an intelligent road network, we need to digitize all the traffic and transport information first, such as traffic directions, turning movements at road junctions, stopping restrictions, bus only lanes, etc. Then, the digitized networks and information would have to be validated for accuracy. This is the most time-consuming part of the project. Phase I will also include the development of an application interface for public transport users to enquire for public transport services and motorists to enquire for travel route.

4. Phase I will be completed in early 2003. By then, the general public will have access through the Internet to obtain one-stop information on all public transport services. Information on routes and fares, including options based on price, time and the need to interchange will be provided. Motorists will have access to a travel route finding function. Links to relevant information such as car park or petrol filling station locations can also be provided. This pre-trip planning service encourages better use of public transport and better use of transport facility for motorists.

5. Phase II covers migration of existing data systems within TD. Phase III covers data conversion and networking with other TIS users. This includes the connection and interface development for potential traffic information users both within the Government (such as Highways Department, Fire Services Department and the Hong Kong Police Force) and outside the Government (such as public transport and car park operators). Phases II and III will be completed by mid-2003 and late 2003 respectively.

6. As part of the TIS, real-time traffic information will be made available to Government agencies for planning and management of their transport related operations by mid-2003. This will result in more efficient traffic regulation/diversion by the Police and better managed and coordinated road works by Highways Department and the utilities companies. With the real-time traffic information, Fire Services Department and the Police will also find it much easier to avoid congestion points when deploying their emergency vehicles.

7. With information from the TIS, transport operators including the franchised bus companies, railway companies, tunnel operators and commercial vehicle fleet operators, will be able to adjust their operation readily to cope with changes in the traffic conditions. In addition, the public transport operators, in implementing their fleet management system, can further develop a passenger information system that provides pre-schedule, real-time scheduling and other related information, such as bus location, bus stop information, occupancy, traffic condition and weather.

8. On the other hand, private sector service providers, using the basic information and the intelligent road network obtainable from the TIS, will be able to develop value added applications for the public. For example, vehicle manufacturers could make use of the TIS to develop in-vehicle route display units for drivers. Car park operators could develop a parking management system. Dissemination of information on available parking spaces could be made via on-street variable message sign, radio, Internet, in-vehicle navigation unit or mobile phones. Also, parking reservation service can be explored. For other non-transport sectors, they could also make use of the TIS to provide tailor-made services to their customers. For example, hotels could use the system to design specific tour packages for their customers. Restaurant operators could also use the system to provide route guidance and parking reservation for customers going to their restaurants.

Journey Time Indication System

9. Apart from setting up the TIS, we also plan to implement a Journey Time Indication System (JTIS) to provide motorists on the move with their means of obtaining up-to-date traffic information. The purpose of JTIS is to convey to motorists real-time traffic conditions of different cross-harbour routes from Hong Kong Island to Kowloon so that they could make more informed choice on their cross harbour routing well ahead of critical diversion points.

10. The JTIS will be implemented in phases. Phase I involves the installation of digital indicators ahead of the three cross-harbour tunnels and the associated approach roads on the Hong Kong side. The tentative locations are Canal Road Flyover northbound, Gloucester Road eastbound and Island Eastern Corridor westbound.

11. Subject to the satisfactory performance of the system, the system will be extended to major approach roads on the Kowloon side, and subsequently to other tunnels and the associated approach roads.

BENEFITS

12. With the establishment of a comprehensive central database and digitization of transport information under the TIS, the Transport Department could respond to data queries and other public services in a much more accurate, reliable and timely manner without additional staff. It is estimated that if similar functions and services were to be provided without TIS, it would require additional staff with an annual recurrent costs of about $57 million.

13. At present, there are 1.34 million private vehicle trips made every weekday, among which 0.93 million trips are non-regular trips. When the route guidance service is available to the public, it is expected that the travelling time of 5% of these non-regular trips could be saved by 5 minutes per trip. Using the surveyed values of time from the Third Comprehensive Transport Study, this would represent an annual saving of about $100 million.

14. Likewise, there are 9.89 million public transport trips (excluding taxi trips) made every weekday, among which 4.33 million trips are non-regular trips. With the availability of public transport enquiry service under the TIS, it is expected that an average of 3 minutes per trip for 5% of these non-regular travellers could be saved. This would represent an annual saving of $180 million.

15. For the JTIS, there are about 31,500 vehicle trips crossing the harbour from Hong Kong Island to Kowloon side during the peak hours every day. It is expected that the travelling time of 5% of these vehicles could be saved by 3 minutes per trip, which would represent an annual saving of about $11 million.

OTHER BENEFITS

16. Besides savings in travelling time, a more efficient transport system enabled by the trip planning service can offer other indirect benefits such as lower vehicle operating costs due to avoidance of congestion, improved safety and lower total vehicle emissions, more

efficient use of parking facilities and better image of Hong Kong transport system.

17. Online access of up-to-date or real-time information in TIS to other Government agencies will forge government-wide coordination. The interaction will include coordination with HyD in the maintenance programme and strategic project implementation; co-ordination between the Police and the Fire Services Department during a major incident or special event and the provision of transport and traffic information for their dispatch management.

18. Following the implementation of the TIS infrastructure, private sector companies can make use of the TIS to develop and deliver ITS applications, such as in-vehicle navigation, parking management, fleet and freight management and real-time traffic reporting services. ITS applications in Hong Kong can be nurtured with private funding with only minimal development and maintenance costs to Government.

Costs

19. The cost of the implementation of all the three phases of the TIS is estimated to be $63.03 million. The scope of the project includes –

(a) acquisition of computer hardware, software and network equipment, data communication lines as well as facilities for disaster recovery; and

(b) acquisition of services for system design and implementation, data warehouse construction as well as data standardization and communication services.

20. Subject to funding approval, we plan to start implementation in January 2002 for completion in December 2003.

21. The cost for implementing Phase I of JTIS is estimated to be $20 million. The scope of the project includes –

(a) the supply, installation, testing and commissioning of the system comprising vehicle detection equipment for traffic monitoring, computer hardware and software and ancillary data communications equipment, digital display devices for display of journey times and a control console; and

(b) the related civil works such as provision of cable ductworks, gantry mounting for journey time indicators, as well as necessary building services works for installation of the computer hardware and the control console at a control centre.

22. Subject to funding approval, the JTIS will start implementation in October 2001 for completion in February 2003.

THE WAY FORWARD

23. We plan to seek the approval of the Finance Committee on 25 May 2001 on funding for implementation of the projects.

ADVICE SOUGHT

24. Members are invited to provide comments on the proposed projects.

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