Our Transportation System is in Crisis - VI

This is the sixth article in our analysis of the transport system in the country. This week we examine another mode option for public transport: Bus Rapid Transit (BRT).

The BRT system is based on the concept of utilizing the most popular features of Light Rail Transit (LRT) with the flexibility and cost advantages of traditional roadway transit. It can come in a variety of different forms, from dedicated busways that have their own rights-of-way (including traffic signal preferential treatment and pre-emption at intersections) to bus services that utilize High Occupancy Volume (HOV) lanes, and dedicated highway lanes to limited stop buses on conventional routes.

The key argument in favour of BRT systems is that they provide a higher quality of service (similar to LRT systems), but at greatly reduced capital investment in vehicles and right-of-way. Key to this assumption is the utilization of existing roadways, so that capital costs in these areas are only for the vehicles themselves and additional street furniture required for operation. BRT allows for incremental construction and implementation and can be easily tailored to meet the specific transportation needs and opportunities within individual neighbourhoods and transportation corridors.

Insofar as BRT can utilize dedicated rights-of-way it offers advantages over regular bus service, including service frequency, increased capacity, and speed. Fares are collected upon entering an enclosed bus station or shelter area prior to bus arrivals (similar to how fares are collected at a kiosk before entering a subway system). This speeds up the trip for everyone. This system would allow passengers to board through all doors of a stopped bus. Many BRT systems also use low floor buses (or high level platforms with high floor buses) to speed up passenger boarding and enhance accessibility.

BRT systems can operate at speeds nearly twice as fast as conventional buses and roughly equivalent to light rail, getting people quickly to their destination.

A major advantage of BRT (and bus transit in general) is its flexibility in meeting changes in the shape of urban development and in changes in demand in terms of both quantity and quality. If necessary, existing bus routes can be modified almost overnight at virtually no cost. Expanded or new services can be introduced quickly and at relatively low initial cost. And all types of bus transit may be provided by the private sector, and so the financial burden on the state may be reduced.

Another advantage is that since buses using busways or bus lanes can disperse to several terminals in urban areas, very high concentrations of passengers in buses can be minimised. Similarly, outbound buses are able to fan out into suburban areas after leaving busways or bus lanes. In other words, passengers can be taken close to their destinations at both ends of these high-capacity facilities.

Opponents of bus rapid transit initiatives argue that BRT is not an effective replacement for light rail or subway services. They argue that in order for BRT to have greatest effect, it must have its own right-of-way; and BRT operating in mixed traffic is subject to the same congestion and delays as do ordinary buses. Furthermore, signal priority systems might cause severe disruptions to traffic flow on major cross streets. They argue that this merely redistributes, rather than reduces, the traffic congestion problems that BRT systems are designed to alleviate.

BRT also suffers from a serious image problem. In many places (and particularly in the United States), buses of any kind are far less attractive to middle- and upper-class riders than light rail and subway systems, suffering from resulting low ridership among segments of the population that prefer travel by automobile to using any sort of public transportation whatsoever. While many BRT systems utilize state-of-the-art buses that differ substantially from traditional buses, BRT opponents insist that "a bus is still a bus."

The city of Curitiba in Brazil is held as a paragon of urban planning excellence. In 2001 it had a population of 1.6 Million people. The city has implemented a major plan which provides strict controls on urban sprawl, a reduction in traffic in the downtown area, preservation of Curitiba's Historic Sector, and a convenient and affordable public transit system. The city has a notably efficient transportation system, including devotion of lanes on major streets for a BRT system. In 1992, they introduced bi-articulated buses which are long, split into three sections (two accordion-type joints, instead of one as in the case of our articulated bus), each unit is 25 m in length and is capable of carrying up to 270 passengers. Their goal was to shelve plans for LRT through the bi-articulated concept, because the 21 km LRT system would cost US$ 400 million to build and would take at least 2 years to be completed. The bi-articulated project cost US$40 million and was operating in six months. The units are run by private companies, so that the largest part of the total investment (US$30 million) was financed by the private sector.

On reserved busways passenger volumes of 15-18,000 passengers per hour per lane for standard buses, and 20-30,000 passengers per hour

per lane for larger buses can be expected. The construction of exclusive busways in combination with at-grade intersections may cost between US$ 2 to 7 million per kilometre.

Next week, we examine ferryboats and their potential for intra-island travel.

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