Source: / www.dougjack.co.uk/bus-rapid-transit.html

Bus Rapid Transit

An ever-increasing percentage of the world's population is living in urban areas, and that trend is set to continue.

In China alone, there are now more than 100 cities which have at least one million people. Cities place tremendous demands on public transport.

In many of the world's larger cities, there are metro systems, usually running underground, at least in the central areas. While they move large numbers of passengers per direction per hour, projects can take typically up to ten years from first approval to full opening. The construction costs per kilometre are also astronomical. London's Crossrail project will be ten years in the making, and at an estimated cost of £16 billion.

Trams are a less expensive alternative, and the costs are reasonable when existing systems are extended to serve new industrial and residential areas. Totally new systems can be much more expensive and highly disruptive to traders and residents during the construction period.

The alternative is bus rapid transit. These systems first appeared in the city of Curitiba, Brazil, in 1991. High capacity articulated buses are used on dedicated routes. They have high floors, level with covered platforms from which passengers can very easily get on and off. It was soon found that they could move nearly as many passengers per direction per hour as a metro train, because buses could run at greater frequencies.

The Curitiba system has since been developed in several other cities around the world, principally in South America. TransMilineo in Bogota, Columbia, is a particularly impressive system with up to two lanes in each direction on reserved roadway in the middle of main arterial roads.

The largest system currently in use in Europe is in Istanbul, where high capacity articulated buses run very frequently on dedicated rights of way from some of the suburbs in and through the city centre, and across to the Asian side.

The Istanbul BRT vehicles have low floors, only one step above the ground, but still use platforms level with the floor of the bus.

Passengers reach the platforms either from above or below the busway, passing ticket machines and barriers before they reach the platform. Dwell time at each platform is therefore kept to a minimum. Journey times from the outer suburbs have been cut by more than half, compared with using a car.

Where space for a dedicated busway is limited, guided busways can be installed. Buses run on a concrete surface that is bordered continuously by concrete kerbs. Guide wheels mounted just ahead of the front axle make continuous contact with the sidewalls so that buses travelling in opposite directions can pass very close to each other.

The longest known system is a 22km route in the United Kingdom between Cambridge and Huntingdon. It uses the track-bed of a disused railway, where ironically, overall width was not a problem. The system has proved extremely popular with passengers because journey times by bus are faster than travelling by car on a nearby heavily congested highway and the bus also saves parking costs in Cambridge.

Another form of guided busway was developed in France by Matra and taken over by Siemens. A camera mounted

above the centre of the windscreen followed two intermittent parallel white lines painted on the road surface. The system proved reliable and accurate, enabling the bus to park within a few mm on a raised platform, enabling passengers to get on and off very easily. In the event of an emergency it can be immediately over-ridden by the driver.

The implementation time of a BRT project can be little more than a year, including acquisition of the vehicles. Installation costs are far lower than tramways. BRT systems are very good at moving large numbers of people on the busiest routes. It is also easy for local buses to connect with them, providing feeder services for passengers. The operating costs per kilometre are highly competitive, and vehicle emissions per passenger per km are also extremely low.

Guided Busway in the UK

Mercedes Benz Bus Rapid Transit in Brazil

Solaris Urbino Bus Rapid Transit in Paris


Volvo Bus Rapid Transit in Colombia