The Brisbane Busway

Successful Public Transit Serves Australia's Fastest Growing Region

Background

Located in Western Australia, Brisbane is the capital city of the State of Queensland and the center of the fastest-growing region in the country. Population projections estimate that the region will grow from 2.7 million in 2006, to more than 4.2 million in 2031.[1] In order to meet the transportation demands of its growing population and support a strong regional economy, Brisbane has developed an extensive bus rapid transit system. Modeled largely after the Ottawa, Canada system, the Brisbane system exemplifies the "quickway model" of BRT. The region is served by a network of dedicate busways that provide fast and convenient connection to the central business district (CBD) and major employment centers. Building on the success they've had to date, the region has set of goal of doubling the use of public transportation by 2031.[2]

Process

Recognizing the Need. The city of Brisbane has long been served by an electrified commuter rail system, the "Citytrain." The Citytrain network includes four corridors radiating out of the CBD and branching out into 7 primary corridors. While this system was historically well used, transportation planners recognized that residents located between the lines were not well served and had little access to reliable transit options linking them to employment centers.

The decision to invest in the busway system is largely credited to Lord Mayor Jim Soorley, who was in office from 1991-2003. Soorley sought to transform the city of Brisbane into a globally competitive city and believed that an effective public transit system was critical to achieving this goal. Inspired by the Ottawa Transitway, the Lord Mayor believed that busways offered a way to achieve high-quality transit in a relatively short timeframe.

As Brisbane's population grew in the 1990s, plans were developed to expand the Pacific Motorway from six lanes to eight in order to increase capacity of the highway connecting Brisbane to the Gold Coast. However, studies found that building a two-lane dedicated busway would better serve the region, reducing congestion and improving access to the CBD. Today, during peak hours one lane of busway carries the equivalent number of people per hour as nine lanes of highway.[3]

[1] Connecting SEQ 2031: An Integrated Regional Transport Plan for South East Queensland, online at http://www.connectingseq.qld.gov.au/
[2] Ibid.
[3] Breakthrough Technologies Institute. "Bus Rapid Transit and Transit Oriented Development: Case Studies on Transit Oriented Development around Bus Rapid Transit Systems in North America and Australia." April 2008.

Building and Expanding the System. The current Brisbane busway network includes 4 segments. The first of these, the South East Busway (SEB), was completed in 2001 and extends from the Queen Street Mall (a pedestrian-only, mixed use, downtown district) to the suburbs of "Eight Mile Plains" approximately 8 miles southeast. This busway had immediate impact: transit ridership grew by 56 percent, including 26 percent who were new riders and had previously driven cars.[4] The SEB reduced the travel time from Eight Mile Plains to the CBD from 60-minutes by car to only 18-minutes by bus.[5]

In 2004, the Brisbane system expanded to include the Brisbane Inner Northern Busway (BIBN). This busway extends 2 miles north of downtown and provides direct access to the CBD via an underground tunnel. The line includes an underground station at King George Square and links to an existing underground bus station under the Queen Street Mall. The BIBN is now being expanded to connect to the growing suburbs further to the north.

Current and future busway map. Source: www.translink.com.au

Work is also underway on the Eastern Busway, which will connect eastern suburbs to Brisbane City, major shopping and employment centers, including the University of Queensland and Princess Alexandra Hospital. The fourth segment is the relatively short (1.5km) Boggo Road Busway, which provides connection between the southern and eastern districts of Queensland University and includes a 430m-tunnel running below an existing rail line and the Pacific Motorway.

TransLink, an agency of the Queensland government formerly called Queensland Transport, controls the Brisbane system. Translink contracts with several operators and provides several types of service. "Spine" service offers high frequency service along each corridor with stops at each station. CityXpress service operates off-corridor and enters the Busway via a ramp. These buses typically allow for transfers to the spine and then proceed non-stop to the CBD. "Rockets," similar to CityXpress connect the Woooloongabba station and provide access to the CBD and major office buildings to the southeast.

Lessons Learned

A Flexible System Grows with the Region. By developing a network of grade-separated busways, Brisbane has created a system that can be responsive to demand and can be adapted to meet the needs of the region over time. While the fixed infrastructure of the stations provides a level of reliability that can spur real estate investment, using buses rather than rail allows service to change in response to growth and commuter trends. There is even potential to convert the busways into light rail lines if that were to make sense in the future.

[44] Currie, Graham. "Bus Rapid Transit in Australasia: Performance, Lessons Learned and Futures." 2006. Available online at http://www.nctr.usf.edu/jpt/pdf/JPT%209-3S%20Currie.pdf
[5] Ibid.

Branding and Design is Important. Brisbane has been very intentional about creating stations that reflect a high standard of design. Most stations follow a similar design, which provides consistency across the system. Typical stations include linear platforms that are 5 meters (16.4 ft) deep and 55 meters (181 ft) long.

The buses that utilize the busways are not specifically branded. The decision to brand the stations rather than the buses reflects Brisbane's infrastructure-focused approach, rather than a service-oriented strategy.[6] By focusing the branding on the infrastructure, they are recognizing that the service may change and evolve over time. The strong branding that is consistent across the stations helps to identify them and elevate the visibility of the infrastructure investment.

Capacity Remains a Challenge. As the busway has gained popularity and ridership has increased, the system is experiencing congestion and capacity challenges. Buses do get backed up, particularly at pinch points like bridges. Platform crowding is also a problem and because it's not always clear where buses will pull up to the platform, there can at times be confusion on the platforms. This results in inefficiency as passengers fight to find their right bus. Platform crowding also increases unloading time. It's estimated that these inefficiencies reduce station capacity by 10 percent.[7]

Busways Spur Investment. Among the most notable successes of the Brisbane busway has been the real estate investment and infill development that has taken place along the routes. Communities located along the SEB have experienced 20 percent increases in land value.[8]

To date, much of the transit-oriented development that has occurred has been market driven, and the government has done little to influence this development. One notable exception is the Boggo Road Urban Village, a mixed-use redevelopment project managed by the Department of Public Works. However, the government is now beginning to look at incentives that can be created to help target TOD investment. Land use planning in Southeast Queensland is under the authority of the Queensland State Government, which should allow for a more comprehensive approach. Pursuant to the Integrated Planning Act of 1997, local governments are required to prepare Local Growth Management Strategies to implement the regional plan. These local strategies are now required to identify opportunities for TOD. The current regional plan, "Connecting SEQ 2031" emphasizes the importance of transit-oriented development in support of the region's transportation, economic and environmental goals.

Thanks to Dr. Graham Currie, Monash University

Snapshot written by Debra Perry, ISC.

For More Information

TransLink; www.translink.com.au

[6] Federal Transit Administration. Advanced Network Planning for Bus Rapid Transit: The "Quickway" Model as a Modal Alternative to "Light Rail Lite," 2008, available online at http://www.fta.dot.gov/documents/BRT_Network_Planning_Study_-_Final_Report.pdf

[7] Jaiswal, S., Bunker, J and Ferreira, L. 2010. Modeling Bus Lost Time: Additional Parameter Influencing Bus Dwell Time and Station Platform Capacity at Bus Rapid trans Station Platform. Online at http://eprints.qut.edu.au/40888/

[8] Brisbane Australia: Brief online at http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp90v1_cs/Brisbane.pdf

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