

Appendix 4 – Ottawa: Shifting from BRT to Rail



Bayview LRT Station.

One of the stations under construction for the Confederation Line LRT replacing the core segment of Ottawa's Bus Transitway

Yonah Freemark's article in his blog *The Transport Politic* provides some useful insights into the evolution of North America's most successful experiment with enhanced bus / Bus Rapid Transit (BRT).

Many American cities have looked to Ottawa as a model for implementation. Canada's capital has become a gold standard for bus advocates, who point to the region's 240,000 daily bus riders and 23% transit share as proof that buses can work just as well as rail in encouraging people to choose public transportation to get to and from work. Ottawa's several busways transport passengers quickly and relatively comfortably. Unlike most "BRT" lines in North America, this city's are mostly grade-separated, producing actually high-speed buses.

But now Ottawa is planning to give up its primary transitway. Is the Ottawa model — raise ridership with buses, and then think about more expensive rail options — falling flat? What went wrong?

The quick answer is that Ottawa was too successful, encouraging the city's citizens to take an average of 125 trips by public transportation a year, more than any equivalently-sized North American city. The transitway has so many riders that it puts 2,600 daily buses onto two



downtown streets, and by 2018, the system will have literally no more capacity. By 2030, Ottawa would have to get a bus downtown every eighteen seconds to accommodate all of its riders — an impossible feat.

Thus for several years, the city has been considering light rail as a replacement; a 2006 plan fell apart because it would have done nothing to increase capacity and decrease commute times as it would have relied on street-running downtown. So Mayor Larry O'Brien and his staff have concocted what is now a C\$2.1 billion project to run light rail in a three-kilometer tunnel under downtown. The remainder of the 12.5-kilometer corridor would run from Tunney's Pasture to Blair Station along the existing transitway, completely displacing the bus service that's currently there. The 13-station system will be designed for very high capacity, up to 25,000 riders per direction during the peak hour (up from 10,000 today), thanks to platforms long enough to handle six-car trains and even platform screen doors in the underground stations.

The general plan for a downtown tunnel was approved last May by the city's council, and light rail was signed off as the technology in November. It has received a C\$600 million promise from Ontario province and is likely to receive a similar guarantee from the federal government later this year. The project could begin construction in 2013 and open by 2018 — as long as opponents of the rail line don't take the mayoral seat in this fall's election.

Though the existing bus transitway is already in place, light rail construction will be expensive, notably because of the tunnel, which will cost C\$735 million by itself. Even if bus service had been chosen as the preferred technology, this expense would have been required. But the C\$540 million cost to convert the remaining ten kilometers of right-of-way is more surprising; much of that will go towards the big new stations along the line, with the rest to pay for tracks and electrification. Vehicles and a new maintenance facility will cost C\$515 million.

With expenses like that — practically equivalent to building a new rail line from scratch — one wonders whether there was ever any fiscal advantage to using buses first along the rapidway. Did the city lose out by not choosing rail when the transitway first opened in 1983?

In terms of operations costs, it almost certainly did. Even with a nine percent increase in ridership in the first year alone, light rail is expected to allow the city to save up to C\$100 million annually on bus drivers'

salaries, gas consumption, and right-of-way maintenance. By dramatically increasing the average number of passengers per vehicle thanks to long trains and by switching to clean and cheap electricity from diesel fuel, the city will find notable economies in rail. It will also produce far fewer greenhouse gases — saving 38,000 tons by 2031.

For passengers, though, the conversion to light rail means mixed outcomes. The downtown tunnel will decrease trip times by fifteen minutes, principally by avoiding the congestion currently resulting from bus bunching. But the direct service now offered to many parts of the city will be lost, as many passengers coming from areas not immediately adjacent to the rail stations will be shuttled via bus to the stops, where they will have to transfer to get downtown. This will result in roughly 40% of Ottawa's transit trips using the rail line.

During rail line construction, bus service will be seriously affected.

Had buses been retained on the transitway and been sent through the tunnel, it would have required a far more extensive tunnel because of ventilation concerns — or it would have necessitated the electrification of the bus fleet, not necessarily a cheap choice either. So Ottawa had basically no choice but to switch to rail.

If the city gets its way, and finds the money, direct service will be extended; light rail will replace the 10,000 daily-rider DMU O-Train as well as a number of the other current transitway routes. A light rail loop across the river into Gatineau, Québec is also being discussed. With the downtown tunnel built, capacity won't be a problem.

But the underlying question about whether the city should have invested in BRT in the first place twenty-seven years ago returns. Though Ottawa was much smaller then, it was larger than Edmonton, which had installed a modern light rail line in 1978 — including a downtown tunnel. If Ottawa's politicians had known then that they would have to spend billions converting to rail just to keep up with capacity needs, would they have selected bus service?

For other cities considering investing in reserved-bus corridors before light rail, Ottawa's may be a cautionary tale. Savings in the short term



may ultimately result in far greater expenses — especially when factoring in the high cost of bus operations.²⁹

²⁹ <http://www.thetransportpolitic.com/2010/05/17/ottawa-closer-than-ever-to-replacing-bus-rapid-transit-with-light-rail/>