German 280-km/h Inter-City Express high-speed train

HIGH-SPEED RAIL

High-Speed Rail

High-speed rail (HSR) is the ultimate evolution of intercity rail passenger service, undertaken generally when original rail lines have reached their speed and capacity limits. Introduced in Japan in 1964, HSR has since been implemented on high-volume corridors in 13 other Asian and European countries. Several more HSR routes are now under construction or being planned worldwide.

HSR is defined by the U.S. Department of Transportation as a frequent express service with top speeds of at least 240 km/h between major centres that are 300-1,000 km apart, with few intermediate stops. HSR trains are electrically powered and operate on fully grade-separated, dedicated rights-of-way, although they often share track with other types of rail traffic in constrained urban terminal areas.

Because of the need for new and straighter alignments than on the original lines, HSR involves costly and time-consuming right-of-way acquisition and infrastructure construction. It must, therefore, be predicated on its ability to attract large numbers of passengers from the other modes, as well as inducing additional travel demand.

HSR has been studied numerous times since the 1970s for possible application to all or portions of the Quebec-Windsor Corridor. Each study determined it was technically feasible and could yield mobility benefits, but it would require substantial public funding and would likely attract only limited private-sector investment.

In 2014, the Government of Ontario announced its intention to re-examine HSR's potential in

Bombardier's 240-km/h Acela Express on Amtrak's Northeast Corridor. Photo courtesy of Amtrak

Southwestern Ontario and initiated a preliminary environment assessment (EA) for a 300-km/h HSR line linking Toronto, Pearson International Airport, Kitchener, London and Windsor. The project has been entrusted to former Minister of Transport David Collenette, who will provide recommendations to the province in late 2016.

In addition to the EA, a business case analysis that includes 200-km/h diesel and electric alternatives has been commissioned. These lower-speed services would more accurately be described as high-performance rail, not HSR. All three options being studied would involve the upgrading of portions of the existing rail corridors and the construction of "greenfield" line segments, including a new Kitchener-London route.

As has been demonstrated in other regions, HSR in Southwestern Ontario would require and support improvements to connecting rail, inter-community bus and urban transit systems to act as high-volume feeders. Also to be considered would be the retention and improvement of the existing rail passenger services for those communities that would be bypassed by the new HSR service.

The current EA and business case analysis of HSR provide an opportunity for all levels of government to co-operatively address the requirements and the benefits of a multi-modal public transportation system for Southwestern Ontario.