

# Reusable solution for major highway use

## Bridging Case Study



## Delta Bridge Detour, Quebec, Canada

**Customer:** Ministère des Transports Québec | **Solution:** Mabey Delta™



## The Challenge

When the Ministère des Transports Québec embarked on a project to reconstruct a steel and concrete decked bridge on L'Autoroute 40, Félix-Leclerc in Berthierville, just outside Montreal, there was a requirement to install a temporary detour solution to ensure traffic was not impacted.

The original bridge was approaching end-of-life and had required additional bracing in recent years. The project to replace the bridge was a major one scheduled to last two years.

L'Autoroute 40 runs along the north shore of the St. Lawrence River and is one of two major connections between Montreal and Quebec City. The site of the bridge is on a major interstate serving the second largest city in Canada, so it was imperative to install a detour bridge in a timely and efficient manner.

## The Solution

The bridge solution used for the detour was a 67.5 metre span Mabey Delta™ with an 8 metre road width, parapet system and 70mm asphalt decking. This was the first Mabey Delta™ bridge system installed in the province of Quebec, and was supplied by Algonquin Bridge, Mabey's distributor in the territory.

Installation of the bridge was by a cantilevered launch from one side without lifting equipment. Roxboro Excavation Inc, the contractor for the installation, erected and launched the bridge with guidance from Algonquin's on-site advisors. The steel decking and parapet systems were installed prior to launch in order to reduce the amount of work done over the river after installation.

The launch of the bridge was executed from one side using a fully-cantilevered sequence with a 10-bay launch nose. When the bridge and team were ready, on-site equipment nudged the structure across the river to the opposite side.

The Mabey Delta™ bridge system uses innovative 4.5 metre long 'Delta' panels and is able to achieve clear spans of up to 90 metres. The panels are bolted to top and bottom chord members to form the side trusses, carrying the applied loads between abutments or intermediate piers. The Mabey Delta™ combines the best in off-site fabrication with high-speed construction and rapid installation. With specially designed Mabey Delta™ deck and pre-camber system, the system can be configured for single or multiple span bridging in road widths up to 10.5 metres (three lanes) and provides superior permanent or long-term temporary long-span bridging for major highway applications.

## The Result

The detour bridge at Berthierville was installed with ease and is providing a robust detour solution for the two years it will take to install a permanent bridge. The Ministère des Transports Québec will own the system once this deployment is complete and has already expressed an intention to reconfigure and redeploy it for future projects. With a minimum life of 25 years and a capacity to accommodate average traffic levels of 13,000 vehicles per day at a speed of 70 km/h, the Ministère des Transports Québec now has a reusable bridge solution that will undoubtedly be employed in subsequent major infrastructure work across the territory.



Mabey Bridge Limited, Unit 9, Lydney Harbour Estate, Lydney, Gloucestershire GL15 4EJ, United Kingdom

Office: +44 (0)1291 623 801 Email: [mail@mabeybridge.com](mailto:mail@mabeybridge.com) [www.mabey.com](http://www.mabey.com)

