

Waterloo Light Rapid Transit



Americas Transport

Plenary, as part of the Grandlinq consortium, has delivered a rapid transit system for the Regional Municipality of Waterloo that will serve residents in Cambridge, Kitchener and Waterloo.

Stage 1 of the rapid transit system includes 19 kilometres of tracks, 16 stations and 14 tram sets, on its route from Conestoga Mall in Waterloo to Fairview Park Mall. The Project scope also included 13 Traction Power Substations and the Operations and Maintenance Storage Facility.

Project facts		
Location	Client	Value (NPV)
Region of Waterloo, Ontario, Canada	The Regional Municipality of Waterloo	C\$583 million
Consortium	Plenary Americas' role	Design-build
GrandLinq	Project sponsor	Aecon and Kiewit Joint Venture
	Equity investor	
	Financial arranger	
Engineer	Operations	Financial close date
AECOM	Keolis	May 2014
Completion date	Contract terms	Project website
June 2019	30 years, DBFOM	www.rideion.ca

The DBFOM Contract includes a minimum 10-year operator appointment, with up to four 5-year extensions, to be performed by Keolis.

As a result of the favourable interest rate environment at financial close, construction costs were \$2.5 million lower than anticipated, and the 30-year financing costs dropped by \$11.5 million.

The ION LRT system became operational on June 21, 2019.



Design features

The Waterloo LRT System will be a dedicated system for passenger use; however, the system uses an existing heavy rail corridor (CN Rail, approximately 4.5km), which will continue to be used periodically by freight trains at night. Design and construction of the LRT stop passenger platforms in this area will allow clearance for the larger main line rolling stock.

A key element for the successful implementation of a LRT system delivered in a PPP model, is the full integration of the operator in the design solution so that operational, maintenance and lifecycle aspects are fully considered right from the outset. This approach was adopted by GrandLinq with Keolis being fully integrated into the design team and participating at all steps of the design development.

Through the design phase, the team concentrated on evaluating solutions that would allow a sustainable development which promoted environmentally focused solutions including:

- Selecting construction methods and operating techniques that reduce emissions, dust and noise generation;
- Designing stops that blend with their surroundings and reflect the distinctiveness of each community;
- Investigating the incorporation of renewable energy solutions; and
- Committing to a LEED certified Operation, Maintenance and Service Facility.

Innovations

The Project is stage 1 of a master plan developed by the Region of Waterloo for the LRT System, which includes an eventual extension to Cambridge. Although not part of the Project scope, stage 1 also includes 17km of adapted bus rapid transit which would be converted to LRT during stage 2, to create a seamless 37km / 23-stop service. As a result, the Project and any future system additions will need to be fully integrated.

The procurement followed the Infrastructure Ontario process, well-proven for achieving efficient project delivery, with the Region retained leadership of the process due to the unique nature of the transaction.

The payment mechanism was developed in conjunction with Deloitte and was the first LRT P3 transaction in Canada where the operations of driver controlled vehicles has been passed to the private partner.



Keolis's experience was key to understanding the payment mechanism during operations and ensuring that an operating plan could be developed to both meet the requirements of the specifications and to ensure a reliable passenger service.

Financing of the Project was provided through a combination of a short-term bank loan and long-term rated bond. The bond was rated BBB+ by S&P. GrandLinq spent significant time developing a solution that could be rated investment grade because of the unique nature of the structure which included a very high portion of governmental contribution (almost 80% of capital cost).

Local economic impacts

It is expected that the Project will generate more people to the central transit corridor. Businesses along the route will benefit from expanded amenities and increased visibility due to rapid transit. It will enable employees to access job opportunities and provide access by employers to an expanded workforce.