



Eglinton Light Rail Transit Peer Review

Project
Eglinton Light Rail Transit
Peer Review

Client
Crosslinx Transit
Solutions

Location
Toronto, Canada

Dates & Duration
2018 – 2018
(4 months)

Services Provided

- ▶ Peer Review;
- ▶ Subject Matter Expertise;
- ▶ Systems Engineering; and
- ▶ Systems Integration.

Background

Network Rail Consulting (NRC) was requested to undertake peer reviews to support the Crosslinx Transit Solutions Project Team in the development of the Eglinton Road Crosstown Light Rail Transit project. NRC was to provide consulting services that included Subject Matter Expertise related to Systems Engineering and Systems Integration.

Scope of Works

Selected to complete the Design-Build of the Eglinton Road Crosstown Light Rail Transit expansion, Crosslinx Transit signed a Project Agreement (PA) with Metrolinx and Infrastructure Ontario (HMQE). Compliance with the PA is being administered by HMQE.

The PA has a very specific set of system requirements. In the absence of the system operator Toronto Transit Commission (TTC), the system requirements have the potential to drive complex technical solutions which are not currently within the capability of the vehicle. This has the potential to add significant cost and timescale risks to the overall project.

Network Rail Consulting assessed the PA against:

- ▶ System requirements;
- ▶ Concept of operations and operating scenarios;
- ▶ Hazard Analysis;
- ▶ System Capability;
- ▶ CBTC Signaling System; and
- ▶ Vehicle Integration.

Key Project Outputs

Network Rail Consulting shared the GB Rail through the Digital Railway Programme have used a concept called 'Reference Design' to identify and step through various operating scenarios. What became clear from the Digital Railway exercise was that this process provided a common understanding to be reached by relevant parties (Project, Operators, Maintainers and Suppliers) but also benefits from an understanding of all topics from the outset. This allowed for the possibility of functionality to be used to address more than one scenario and hence providing efficiencies for the project and for operators/maintainers. The scope of the Digital Railway topics were identified in joint operational/maintenance workshops.

NRC shared a roadmap of activities and an associated RACI chart to prove beneficial with the development/review forming the main task for the next assignment.

An Entry into Service Diagram was also provided that highlights the processes deemed necessary for European Train Control System (ETCS) in GB and could provide a template for the roadmap.

Given the different contractual relationships, especially as the vehicles are not being procured directly by Crosslinx Transit Solutions, it is suggested that the PRAMS (Performance, Reliability, Availability, Maintainability and Safety) targets and the apportionment between systems is at the forefront of the system engineering process such that any shortfalls can be detected and corrected prior to service introduction and future uplifts in service levels.