



Sydney Metro – Independent Safety Assessor and Advisory Services

<p>Project Sydney Metro – Independent Safety Assessor and Advisory Services</p>
<p>Client Transport for New South Wales (TfNSW)</p>
<p>Location Sydney, Australia</p>
<p>Dates & Duration 2013 – 2019 (72 Months)</p>
<p>Services Provided</p> <ul style="list-style-type: none"> ▶ Safety Assurance Advisory

Background

Transport for New South Wales (TfNSW) commissioned Network Rail Consulting (NRC) as the Independent Safety Assessor (ISA) for Phase 1 of the program - the A\$8.3 bn North West Rail Link - Australia’s first fully automated rapid transit system incorporating:

- ▶ Driverless trains and state of the art customer safety and security measures;
- ▶ 23km of new double track railway – including Australia’s longest rail tunnel at 15km and a 4km “Skytrain” viaduct;
- ▶ Upgrading of the existing 13km Epping to Chatswood section of railway;
- ▶ Operation of advanced rapid metro services every four minutes; and
- ▶ Construction of eight new railway stations and the upgrading of a further five to metro standards.

The new railway greatly enhances accessibility along the north west corridor from Chatswood to Epping and beyond to Cudgegong Road and Rouse Hill. It will support an additional 200,000 people over the next 20 years in one of Sydney’s fastest growing residential areas.

Scope of Works

NRC provided ISA and advisory services to TfNSW in full accordance with the latest international railway standards, in particular ISO 9001 and EN 50126. Our ISA role supported the two major construction contracts - the Tunnel & Station Civil Works Contract and the Surface & Viaduct Civil Works Contract, completed in 2017.

Our role focused on the following specific aspects and sub-systems of the project:

- ▶ Tunnels and excavations;
- ▶ Viaduct, structures and stations;

- ▶ A cable stay bridge;
- ▶ Geotechnical and drainage;
- ▶ Security, fire and life safety systems;
- ▶ Constructability in design; and
- ▶ Management systems and assurance processes.

In addition, NRC independently reviewed programme reference designs, the enabling works on the existing network as well as the Sydney Yard Access Bridge detailed design.

NRC also reviewed the key safety documentation (Safety Assurance Plans, Safety Assurance Statements and Safety Assurance Reports) and key technical specification outputs.

NRC's ISA role during the design and construction phases was completed on schedule and a comprehensive Final ISA report provided to TfNSW.

Safety Advisory Services

We were also engaged to provide rail safety advisory services in relation to the Operations, Trains and Systems Contract. Our advisory role provided ongoing advice during the delivery phase up to 2020. This focused on the fit out of the rail systems, provision of rolling stock and development and implementation of the operational procedures and practices.

NRC, in conjunction with the UK's respected UK's Rail Safety and Standards Board (RSSB), developed the Safety Risk Model for the programme. NRC also provided an experienced Safety Assurance Manager to support the Early Network Enhancements (ENE) Works programme.

Key Project Outputs

NRC provided TfNSW with robust the evidence-based safety assurance they required. NRC assured TfNSW that the project safety requirements were satisfied in the execution of the three main contracts. The key deliverables of the project included:

- ▶ Preliminary safety assessment of the project safety management plan, the safety assurance plan, and the reference design safety assurance report;
- ▶ Ongoing independent safety assessment of the main construction contracts throughout their duration, culminating in the preparation of independent safety assessment reports for each contract; and
- ▶ Ongoing safety advisory services in relation to the operations and systems contract.