

Richmond Line Duplication Study

NETWORK:
Sydney
metropolitan
network

CLIENT:
Railcorp, New South Wales

DATE:
June 2006 to August 2006

Systemwide determined the passenger and operational benefits of increasing the scope of a planned track duplication project on the Richmond Line. This assisted Railcorp to successfully argue for an extension to the project.

The Challenge

The Richmond line is a predominantly single-track branch in outer northwest Sydney. Major residential developments within the area from 2011 through to 2031 will significantly increase the patronage on peak services that use this line. There is also pressure to provide an additional station located nearer to a planned new community.

Of the possible options to cater for this growth, duplication of part of the line is the most reliable solution. The challenge for RailCorp was to understand the likely outcomes and convince other key stakeholders of the benefits in terms of increased capacity, improved frequency and less overcrowding of trains with differing lengths of duplication.

In addition, as part of this duplication project, decisions to either construct a new station or relocate one of the existing stations could adversely affect the operations by increasing the travel time of services. The second challenge for RailCorp was to better understand these impacts, which would need to be weighed up against the predicted land-use benefits.

- > The minimum lengths of duplication required at each of these key years
- > The operational impacts resulting from upgrading, relocating or duplicating one of the intermediate stations on the line.

Advice was also provided on any subsequent, broader impacts on the surrounding network including the likely impacts upon future options for connecting the line to a new proposed rail link.

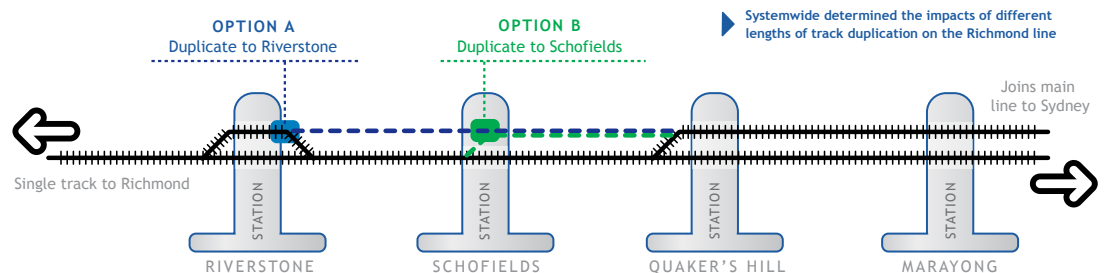
The Benefits

The outputs from this study assisted RailCorp in providing a strong business case for their preferred upgrade program. The study help justify an investment schedule which has subsequently been adopted and funded by the Government as a \$316m project. See http://www.nsw.gov.au/pdf/NW_Rail_Clearways_Extension.pdf for the media release.

Our Approach

Systemwide's 'Train Load Predictor' was used to create strategic peak period timetables for three future years based upon RailCorp's demand forecasts. These strategic timetables were then analysed to understand the limitations of each of the infrastructure options, both in terms of their likely longevity (defined by the limiting capacity) and operational reliability. By understanding the limitations of each infrastructure option, specific recommendations were made regarding:

Schematic of Richmond Line



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