

North Melbourne Station

Pedestrian Simulation Planning and Design

Planning and Design of Passenger Interchanges at North Melbourne Station, Australia

North Melbourne Station is immediately adjacent to the City Centre loop within the Melbourne metropolitan area. There are four rail lines that converge on this station on route to the Central Business District, with a variety of service destinations, rolling stock, schedules and service occupancy and the number of doors for passenger boarding and alighting.



Client: Department of Transport, Victoria, Australia

Objective Investigate issues of rail passenger's operational landscape at a major rail interchange within the Melbourne metropolitan system.

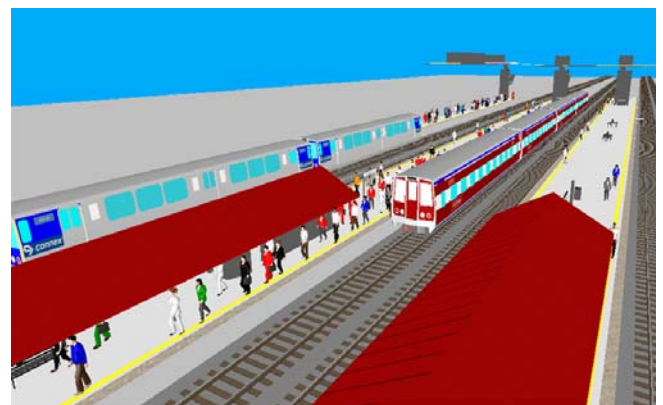
Both regional and metropolitan services pass through this station during the morning peak hour of operation. This is a significant interchange of passengers between platforms at North Melbourne Station on route between residential locations and employment centres.

Tasks

PTV Asia-Pacific was to investigate issues of rail passenger's operational landscape at a major rail interchange within the Melbourne metropolitan system. PTV had to consider the large number of planning and design constraints that can influence the movement of forecast growth in residents and employment

Methodology

There is regular crowding and congestion on one platform for commuters completing their journey to work.



PTV developed a VISSIM simulation model of the pedestrian transfers within the station to investigate planning and design options for both infrastructure and service provision. The pedestrian simulation model incorporated the existing platform arrangements, including access ramps, obstacles and passenger behaviour across the platform. PTV developed the pedestrian transfers and the rail schedules, including rolling stock, variation in interchange between platforms and consideration for boarding and alighting times through the development of a spreadsheet. This approach streamlined the refinement process to investigate future year considerations including changes in number of doors and carrying capacity of the services, demand volumes and distributions (given the proximity of residential growth areas), service delays, and provision of infrastructure and scheduling refinements within the planning and design consideration for the North Melbourne Station rail passengers.