



case studies

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Project

Essendon Airport, Melbourne, Victoria, Australia

Organization

GTA Consultants

Sector

Transportation Planning and Traffic Operations

Objective

Retail development impact analysis, intersection design and freeway operational assessment

Highlights

- 120,000Sqm office, retail, commercial development
- Wide area network analysis
- 2006 + post development analysis for 2011, 2021 design years

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Essendon Airport, Melbourne, Victoria, Australia

Essendon Airport located in Melbourne's inner north is being redeveloped into a large commercial precinct incorporating up to 120,000sqm office, retail, warehouse and other land uses. In addition, the site is situated adjacent to one of Melbourne's busiest freeway networks, the Tullamarine Freeway.

Part of the redevelopment of the site included a new off ramp from the Freeway and a new connection into a congested five legged roundabout.

The existing network geometry was replaced by two closely spaced signalised intersections, one of which consisted of five approaches. Due to the intricacy and complexity of the intersections, traditional modelling methods were not capable of analysing the future traffic impact. Therefore Paramics was utilised to assess the operation of the network, particularly the impact of signal linking, queue length interaction, public transport demand and vehicle platooning.

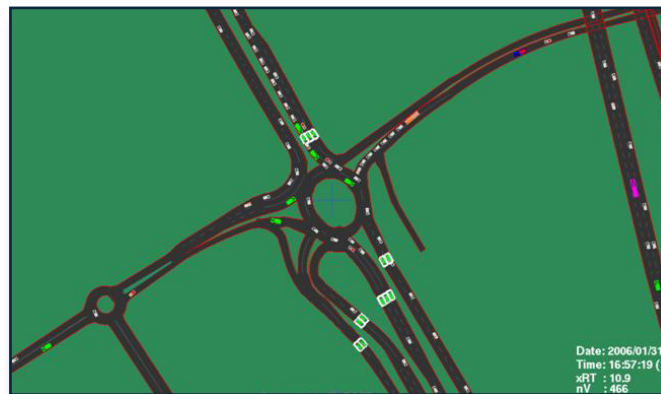


Figure 1: Matthews Avenue / Melrose Drive / Westfield Drive / Tullamarine Freeway Offramp

The model investigated the operation of the network at the following design periods:

- 2006 (Existing conditions and immediate post development);
- At 2011 (50% of the development being completed and in operation); and
- At 2021 (100% of the development being complete and in operation).

Paramics was very useful in obtaining approval from the state road authority (VicRoads) and the City of Moonee Valley. It was also valuable in demonstrating the impacts of the site generated traffic to stakeholders and residents. The vehicles generated from the development of Essendon Airport were altered to different colours which showed the proportion of additional vehicles on the road network. It was able to show that the additional traffic from the new development had a marginal impact on the existing levels of traffic on the road network.

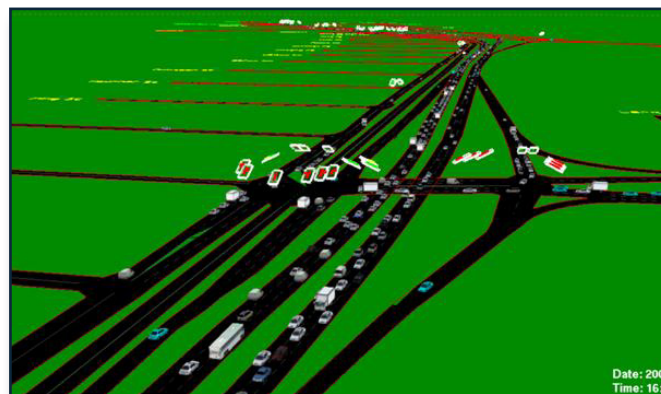


Figure 2: Tullamarine Freeway / English Street Interchange