

Case Study Project: Riverside Drv Closure Traffic Analysis

Client: Main Roads Western Australia

Overview

The delivery of Elizabeth Quay sees the closure of Riverside Drive between Barrack Street and William Street in the Perth CBD.

As a major link to and through the CBD an understanding of likely operating conditions was seen as key in managing road user expectations and optimising available road space.

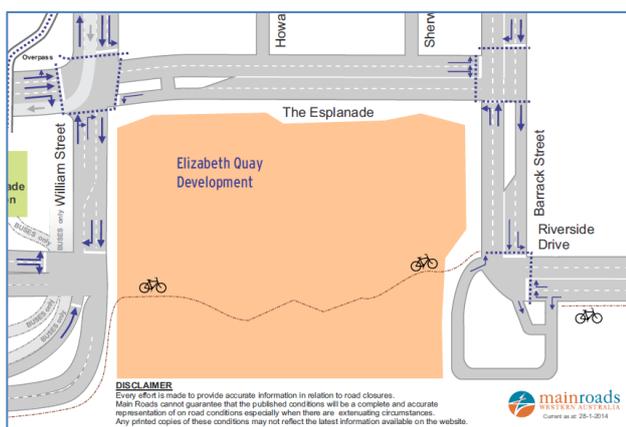
The Study

Urbsol was engaged by Main Roads Western Australia to investigate how the closure of this road section would operate in terms of:

- o Impacts on travel times
- o Likely queue lengths
- o Traffic diversions to substitute routes at a local and network level
- o Optimising traffic signal phasing and co-ordination

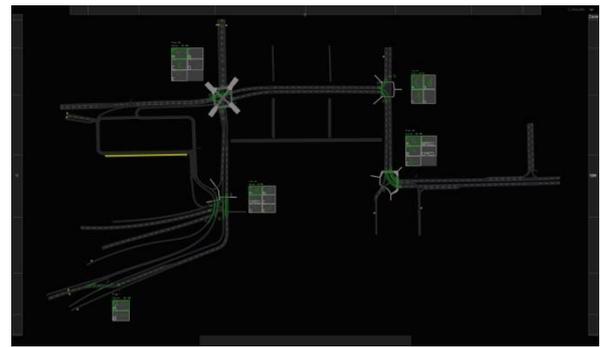
The work involved working with a range of existing and forecast data sources including:

- o Pneumatic tube (classified) surveys
- o SCATS data including loop counts and .idm files
- o GPS travel time surveys
- o Pedestrian surveys
- o Strategic modelling outputs from both the MRWA CUBE/VOYAGER ROM model and the City of Perth SATURN model



RSD Closure

The strategic models available in the area proved indispensable in forecasting likely traffic diversions and estimated demands through the area.



Commuter modelled network

Simulation

To understand and optimise likely operating conditions, Urbsol developed a Commuter nanosimulation model reflective of opening date traffic levels inclusive of pedestrian, public transport and vehicle movements.

The simulation proved key in identifying phase sequences and combinations for traffic signals and the best allocation of available road space.

On the day of opening GPS travel time surveys were undertaken to confirm simulated results.



GPS Travel Time log verification example

Commuter was chosen as the most suitable tool for the simulation for a number of reasons:

- o Inclusion of pedestrian phase calls and demands at key intersections
- o Spatially aware agent modelling
- o Powerful signal actuation rules
- o Robust data collection and extraction

The analysis was used to identify feasible signal operation and to forecast predicted travel times though the area.

Post opening validation of modelled travel times against GPS surveys proved estimates were within 10% of observed times for all surveyed routes.