

Case Study Project: Gateway WA Perth Airport and Freight Access Project

Client: Main Roads Western Australia

Overview

The *Gateway WA Perth Airport and Freight Access Project* represents one of Perth's largest road network planning studies with close to \$1bn expenditure planned for the key roads surrounding the Kewdale industrial area and Perth Airport.

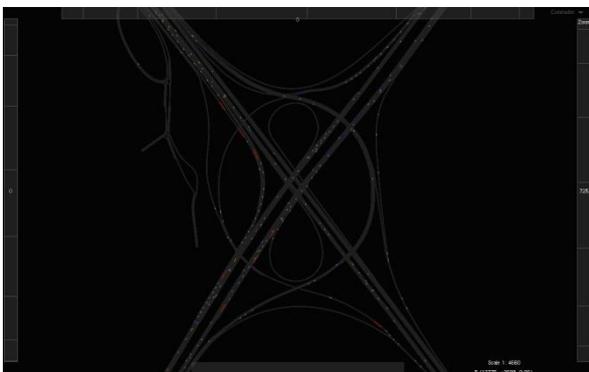
With the consolidation of the domestic and international airport terminals, the development of a commercial precinct within the airport estate and a rapid expansion in freight based activities expected within the Kewdale area, significant traffic demands will be placed on an already at capacity section of the Perth road network.



Tonkin Hwy / Leach Hwy layout

The Study

The study is focussed on delivering a freeway to freeway interchange for the Tonkin Highway / Leach Highway intersection and the Tonkin Highway / Roe Highway interchange.



Tonkin Hwy / Roe Hwy layout

The project also involves the grade separation of the Tonkin Highway / Horrie Miller Drive / Kewdale Road intersection with a single point interchange.

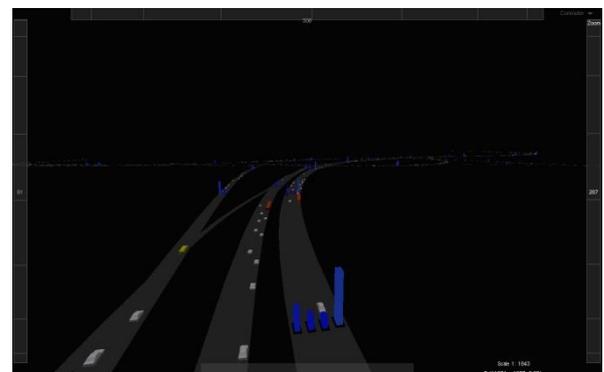
UrbSol were engaged to undertake the traffic modelling and analysis associated with the project as part of a joint venture team formed between BG&E and GHD.

The modelling and analysis required was especially complex due to the unique nature of a number of the key traffic generators in the area including intermodal freight terminals and airport landside activities.

The work involved the use of longer term strategic forecasting models, traditional traffic engineering techniques (HCM, SIDRA) and detailed simulation of network operating conditions.

Simulation

Simulation allowed for the analysis of inter-related complex merging, diverging and weaving manoeuvres on and between the planned interchanges.



Lane density indicators

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

- Replication of congested freeway behaviour
- Detailed heavy vehicle kinematic modelling
- Spatially aware agent modelling
- Powerful signal actuation rules
- Reporting of lane based density