Freight modelling and forecasting: what if analysis and options

Freight modelling and forecasting - what if analysis and options

ACIL Tasman's approach to freight modelling and forecasting is consistent with international practices in transport modelling.

Our approach was applied in a recent major transport corridor study in the Eastern states of Australia.

Besides basic forecasting, the modelling approach allows for a high degree of flexibility and testing of different options and sensitivities, making it particularly useful for scenario development or "what if" analysis and infrastructure investment planning.

The freight modelling approach is divided into two broad areas:

• forecasts of the total freight market (by origin, destination and commodity)

• mode shares of the total freight task.

The key modelling outputs are forecasts of freight tonnages of each commodity moved by each freight mode on each individual freight route.

Components of ACIL Tasman's modelling and analysis

The ACIL Tasman logit approach allows a high level of flexibility for modelling different infrastructure arrangements and how these may impact on freight customer's choice of mode. For example, the scenario where a new road or rail line is constructed can be compared with the outcomes in a business as usual scenario.

Freight database: Publicly available data is available from the Bureau of Infrastructure, Transport and Regional Economics and from the Australian Bureau of Statistics for current freight volumes moved by land, air and sea on the inter-capital origin destinations

Freight Modelling and forecasting includes several features:

• current market data

• freight flows and forecasts by mode

• mode-specific freight performance

• total freight market forecasts

• overall economic growth

• production and consumption of commodities at the regional level

• the cost of freight

• concentration of industries and distribution centres

• mode assignment modelling: price, reliability and availability are the parameters used in the utility functions to help determine the probability of a freight customer selecting a road or rail service.

See our freight modelling case studies.

Contact us to find out more about ACIL Tasman's expertise and experience in freight modelling and forecasting projects.