

Simulation

ORH Approach



KEY BENEFITS

- Produces evidence-based solutions to a range of planning questions
- Supports management decision-making when presenting a case for change
- Provides a risk-free environment to quickly test many different options
- Quantifies the impacts on performance of potential changes to service delivery

Answering complex planning questions using simulation modelling

THE CHALLENGE

All emergency services must make difficult decisions about how to deploy resources to provide the best response to the public, factoring in financial pressures, time constraints and other competing issues. Before implementing changes to operations, emergency services should take an evidence-based approach in order to understand the potential impacts on response performance and workload. ORH's market-leading

simulation models enable ambulance, fire and police services to make informed decisions in a risk-free environment.

ORH'S APPROACH

ORH's models replicate the key characteristics of an emergency service, and predict future behaviour and performance under a variety of different scenarios. We analyse service data in detail to understand current behaviour and provide inputs for the model in terms of demand, resources and response strategies. The model is also supplied with detailed travel time data, calibrated against actual journeys. Vehicles within the model respond to incident demand according to proximity and dispatch protocols.

We have designed each of our models to examine the different operational practices across all emergency services, for example:

- **Ambulance:** clinical specialities at medical facilities and changes to vehicle and skill mix.

- **Fire:** specialist appliances and multi-vehicle dispatch strategies.
- **Police:** mobile patrols and the balance of emergency and non-emergency incidents.

ORH's experienced consultants use the simulation models to address a wide range of 'what if?' planning questions, including:

- How will future demand changes affect performance?
- Where are the best locations for adding or removing resources?
- What impacts do new response or dispatch protocols have on vehicle workload?

Crucially, the models can assess questions individually or in combination to give a full picture of the impacts on response performance and utilisation. Detailed outputs include performance by time of day, maps of response times and the breakdown of workload by incident type.



ORH modelled the deployment of ambulance operational resources to assist the organisation in achieving contracted response times. ORH's work also informed property investment decisions for ambulance depots over the next eight years. The approach was robust and relevant to our specific circumstances."

Chief Executive Officer, Australian Ambulance Service

