

Optimisation

Optimising can be targeted to minimise average response times to a particular type of risk



ORH has developed a unique and powerful program to optimise the location and deployment of emergency response vehicles. OGRE (which stands for “Optimising by Genetic Resource Evolution”) uses a sophisticated genetic algorithm to assess millions of options for station and vehicle placement within minutes.

OGRE has been designed to respond to many different location challenges, taking into account a wide variety of risk factors. For example, optimising can be targeted to minimise average response times to a particular type of risk, or maximise the number of incidents of a certain category covered within a target response window, against first, second or subsequent vehicle arrivals on scene. Current locations can be fixed within the model runs and optimisation carried out around them, or they can be removed to identify a completely greenfield solution.

OPTIMISATION PROCESS

The optimisation process involves four key steps:

- **Specification** – ORH works alongside the service to determine the optimisation criteria and objectives, and any locations and/or deployments that must be fixed
- **Iteration** – many optimisation runs are undertaken by ORH to draw out preferred solutions
- **Testing** – preferred options are fully evaluated using ORH’s simulation software to quantify the performance impacts of potential solutions
- **Results** – once a final set of sites has been identified, site-search maps are provided to assist the service in procuring new locations

KEY BENEFITS

- Solutions are bespoke, with optimisation objectives specified by the service
- Exhaustive analysis gives confidence in the chosen solution, with millions of options assessed by OGRE and preferred solutions fully tested using ORH’s simulation modelling
- Practical support for implementation, with detailed location maps to assist the procurement of identified locations



Emergency Service Planning
Optimisation

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