



Case Study: Emergency Services Resource Optimisation

Requirements

With increasing pressure to reduce costs, emergency service providers must ensure efficiency in their operations. This requires the effective deployment of human resources and infrastructure development whilst maintaining the same quality of service.

A regional emergency service operating in the UK responds to over 300,000 reported incidents per year over a large geographical area.

Data relating to the location and type of incidents can provide key insights into the efficiency of incident response.

Edge Analytics was commissioned to analyse incident data to provide recommendations on how the service's 'response hubs' could be optimally located relative to where emergency and non-emergency incidents occur.

Solution

Quest is suite of optimisation models which provide solutions to complex geographical location problems; location optimisation, territory optimisation and geographical clustering.

The Quest software was fed with incident data in combination with drive-time information to explore a range of alternative scenario outcomes. These included:

- Scenarios to identify optimal locations - in terms of minimising overall drive-times - for different numbers of response hubs.
- Coverage scenarios to identify how many response hubs would be required and where they would be located if all reported incidents were to be serviced from a location within a specified drive-time.
- A range of scenarios identifying optimal locations considering equalisation of workloads and capacity constraints.

The analysis provided a range of possible alternative outcomes for the emergency service to consider as it sought to optimise facilities and resources for the future.