ORH
Established 1986

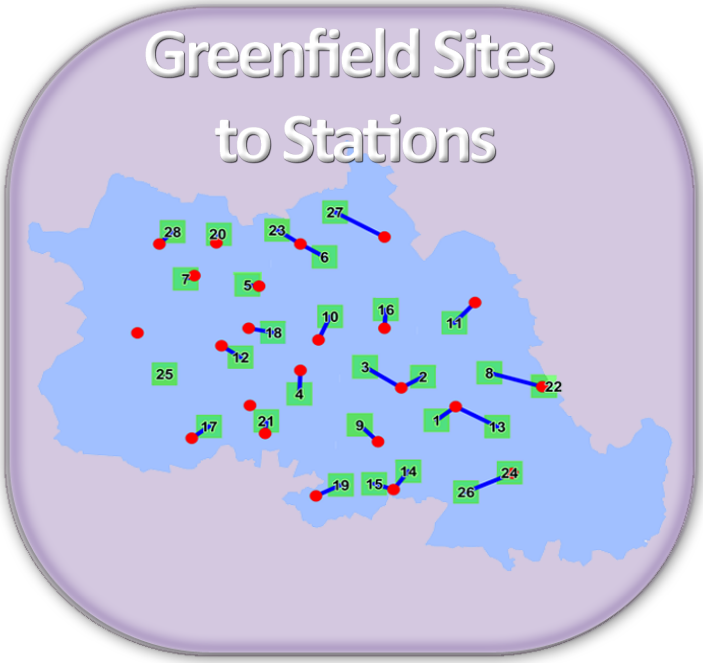
CASE STUDY

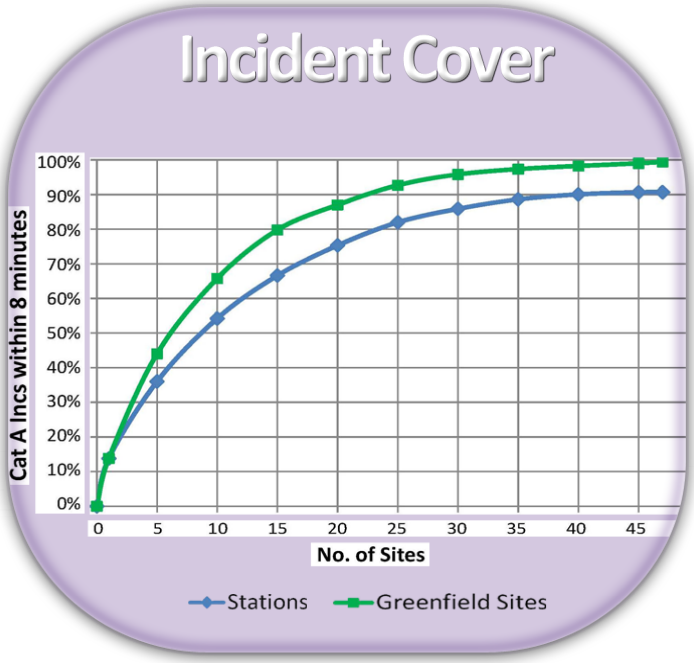
# Modelling RRVs in Birmingham and the Black Country

## The Challenge

- West Midlands Ambulance Service NHS Trust (WMAS) required a scheme to deploy Rapid Response Vehicles (RRVs) in Birmingham and the Black Country (BBC) based on key requirements for locations and performance.

- Key assumptions included:
  - RRV road speeds, activation time and time at scene.
  - 10-hour and 12-hour shifts with fixed start time and meal break rules.
  - 'Greenfield' locations only used at specific times of day.
  - Target of response to 60% of Category A and B incidents with 85% of Category A reached within 8-minutes .




## Approach

- ORH's optimisation tool, OGRE, was used to identify the best deployment locations.

- ORH's simulation model, AmbSim was used to rank the sites, establish performance at different times of day and test deployment options.

- Where Greenfield sites could not be used crews were assigned to their nearest station.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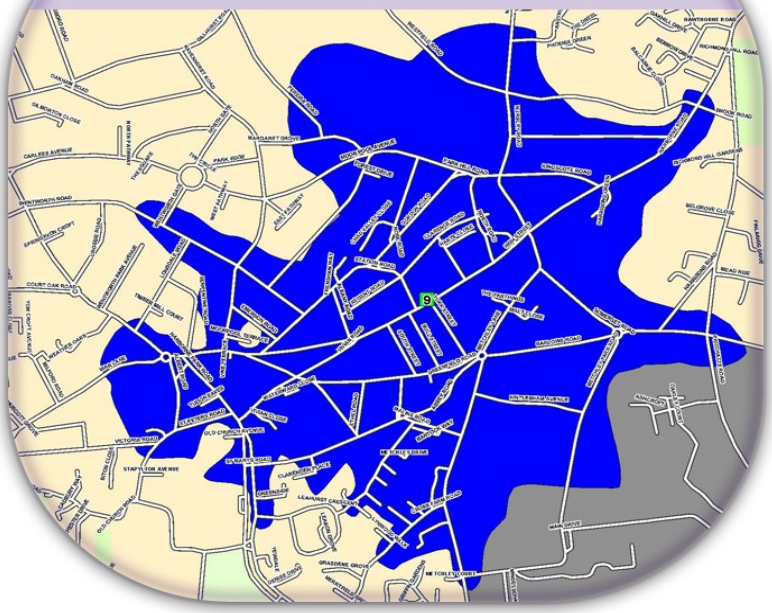
## The Solution

- The final recommendation required a mixture of 10 and 12 hour shifts.
- 5040 deployed RRV hours were needed per week.
- 28 Greenfield locations were used in the day and evening.
- The busiest 5 sites required more than one vehicle during the day.
- Each vehicle was assigned a specific patrol zone during the day and evening.

## Patrol Zone



## Performance Results

| Average Calls per Hour | | RRV hours per week | % Cat A attended by RRV | % of RRV to Cat A within 8 mins | Net RRV contribution to A8 |
|---|---|---|---|---|---|
| Cat A | Cat B | | | | |
| 12.767 | 16.601 | 5040 | 65.0% | 78.7% | 51.2% |

## Benefits

- Simulation modelling allowed deployment options to be tested quickly and effectively.
- RRVs targeted to the busiest areas, maximising their performance.
- Patrol zones developed for each location.
- Clear targets for RRV performance.
- A clear deployment plan .

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