



GIS with the “wow” factor

Paul Beauchamp of OS talks to the London Fire Brigade about their implementation of a GIS for planning and risk management.

The fire and rescue service of the 21st century is not just about extinguishing fires. It is about prevention as well as cure, the efficient management of resources and the assessment and mitigation of risk. Paul Beauchamp talks to the London Fire Brigade (LFB) to learn how detailed and intelligent geographic information (GI), like that from national mapping agency Ordnance Survey®, can play a key role in helping to improve efficiency, identify risk and utilise limited resources in the best possible way.

The LFB is the third largest firefighting organisation in the world, with an operating area of some 1,587 square kilometres and a resident population of 7.4 million. As such it collects, collates and holds a huge amount of information on incident trends, service efficiency and performance. Making full use of this valuable depository of data requires a powerful set of tools to analyse and interpret it whilst putting it into its wider location context. It is for this reason that LFB are now harnessing intelligent topographic and transport GI from Ordnance Survey within Cadcorp® GIS software.

Improving efficiency

According to Ray Hooper, Geographic Information System Manager at LFB, 'We have a lot of information about primary fires, response times, false alarms, malicious calls and so on. Our challenge has been to make this available as widely and as promptly as possible for interpretation and action. That is why we chose to implement a brigade-wide corporate desktop and Intranet geographical information system (GIS).'

In the past the information that LFB needed for risk assessment, plan-

ning, resource management and performance measurement had been generally provided as printed tabular data, making for time-consuming and laborious interpretation. However, as the volume and scope of performance information increased, LFB realised they would have to adopt a more strategic and integrated approach. This was the driving force behind a move to GI. Ray recalls, 'We needed a corporate GIS to improve our efficiency in gathering information from a multitude of sources, analysing it and presenting the results for distribution across our entire organisation. That way, it would be far easier and far quicker to understand and interpret, thus supporting decision making.'

After a competitive tendering process, LFB decided upon a solution comprising Cadcorp desktop and web-based GIS software and a set of tools designed specifically for use by the emergency services. Underpinning the entire solution is Ordnance Survey's flagship digital mapping data – OS MasterMap® Topography Layer and OS MasterMap Integrated Transport Network™ (ITN) Layer.

Saving cost, time and resource using OS MasterMap

According to Ray, 'OS MasterMap Topography Layer gives us considerable advantages over our previous mapping. It is available to us alongside a number of other mapping and address products under the Mapping Services Agreement (MSA), which keeps the cost down. It is the most accurate and up-to-date mapping data available and highly detailed too – we can drill right down to see specific buildings of interest, for example.

For making important decisions on resource management Ray points out how ITN Layer has been of great benefit, allowing LFB to evaluate

data based on more than simple distances. He says, 'We need to determine the optimum location for our large fire and rescue units. To do this, we make great use of a tool to create isochrones. Using data derived from ITN Layer, isochrones are, in effect, map contours based on travel times to locations rather than simple distances.' This is possible because the ITN data includes information on road layouts and road weight, width and height restrictions. Ray adds, 'Over the last 10 years we had surveyed the whole of London, capturing for ourselves all traffic-calming sites, one-way streets, restricted turns. We no longer have to do that. Thanks to ITN Layer, which contains the majority of that information and is updated on a frequent basis, we save cost, time and resource.'

Managing risk

LFB has also found that GI has a role to play in identifying and managing the brigade's risks. Paul Eady is Risk Information Assistant Manager at LFB. He explains, 'In the UK each fire brigade is responsible for deciding and defining its own risks. That is why we have developed our own Incident Risk Analysis Toolkit (IRAT).'

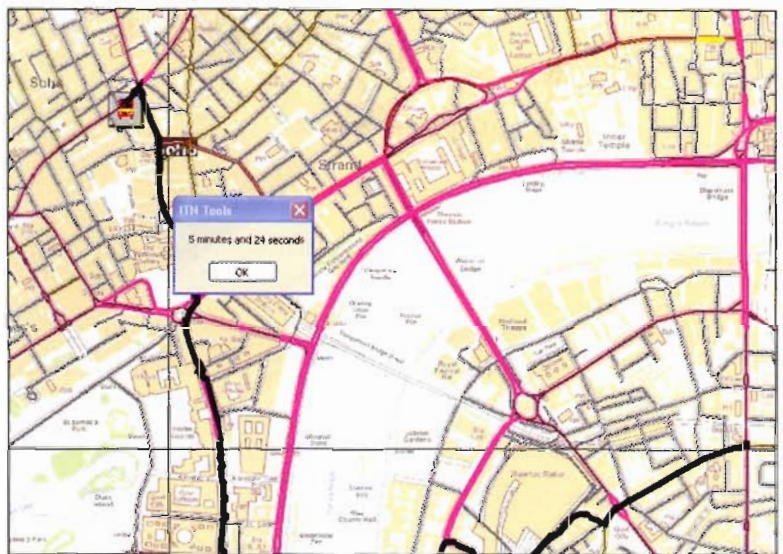
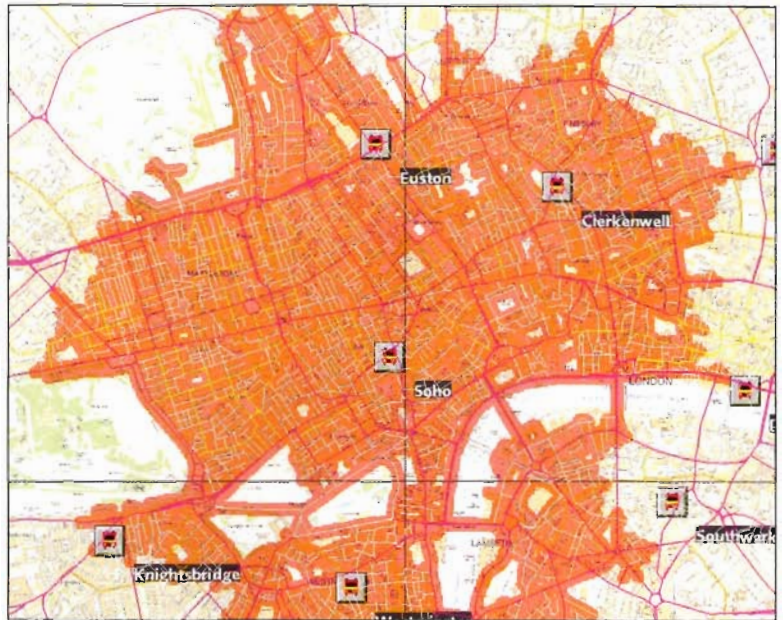
The toolkit is designed to help LFB borough and station managers set priorities and plan their community and fire safety work where previously this was just based on a combination of incident history and local knowledge. Paul explains, 'Every quarter we run a statistical analysis to produce projections of the number of incidents for 17 different incident types at ward level for the whole of the LFB area.'

'The output is a ranking table showing how each ward and each borough compares for the whole of London, segmented into domestic premises, commercial premises, deliberate or accidental incidents, severity of fire and so on.' He continues, 'We now have an application that automates the provision of a visual map-based representation of these projections.'

Paul points out, 'The iRAT approach provides borough managers with an aid to planning community-safety initiatives within their particular areas. Automatic map generation has been a massive time saver for us and I'm sure the same kind of thing would be of great value to other brigades.'

The return on investment

In summing up the impact of GI on LFB, Ray says, 'Whenever we bring in borough teams to familiarise them with IT systems, it's always the mapping GIS that gets the "wow" reaction. Being able to use geographic information across the organisation is highly cost-effective considering the high number of users, and as more people use GI to help them make better decisions, it will increasingly save time and money and increase efficiency. The cost of the software and OS MasterMap may be pretty modest, but the benefits are huge.'



The next steps

The next stage is to integrate GIS, including OS MasterMap, with systems that hold live data, such as the incident recording system, and for it to be linked to IRAT for the wider availability of risk-management information. GIS software will also be used to publish maps on event plans, such as the location of resources at major sporting events and to publish site maps under the Control of Major Accident Hazards (COMAH) regulations.

One picture is much better than a thousand tables of figures

Asking Ray to look back, did LFB make the right decision in choosing GIS software with OS MasterMap? He responds, 'Definitely! We've had the system for two years and it's superb. It meets all our needs and expectations. Users can very easily visualise what's happening and where using OS MasterMap: proof that one picture is much better than a thousand tables of figures.'

Intelligent GI is at work throughout the public and private sectors – from the police and health services to insurance and utility companies. To find out more about how GI is relied on in Great Britain, visit www.ordnancesurvey.co.uk/business.

Paul Beauchamp – Ordnance survey

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