Fighting fire with data

Humberside Fire & Rescue Service

The migration to a new ArcGIS platform at Humberside Fire & Rescue Service ignited plans to make interactive mapping and accurate data accessible in real-time to firefighters and other staff. Now almost 1,000 employees depend on ArcGIS-based solutions to help them respond rapidly and effectively to emergencies and build safer communities in Humberside.

The Challenge

- Make data more accessible and easier to use, from any location

The Benefits

- Improved decision making in life-threatening situations
- Strategic planning of fire prevention & protection activities
- More efficient fire safety visits
- Effective collaborative during COVID-19 lockdown

The Challenge

In the Fire Service today, good quality data is arguably just as important as a well-equipped fire engine. Fire and rescue crews need access to information about incident areas to enable them to make the best decisions, as quickly as possible, and save lives. Equally, other members of staff need accurate data to inform fire prevention and protection activities that reduce fire risks in the community.

At Humberside Fire & Rescue Service, the growing demand for up-to-date data was creating challenges. The small data analysis team was swamped with requests for data and reports, including many different variations of the same report, with just a few parameters changed. Important data was spread across different systems, making it hard for key decision makers to find the information they needed, and staff couldn't always access information quickly enough, whether they were developing fire prevention and protection strategies or responding to emergencies.

The Solution

Humberside Fire & Rescue Service has been using solutions from Esri's ArcGIS platform for over ten years. Its recent migration to Esri's ArcGIS Enterprise solution provided the catalyst for the development of a growing suite of new cloud-based GIS services for up to 1,000 employees. The organisation called upon the support of Esri UK's Professional Services team to support the migration, but its portfolio of solutions was built largely in-house by its ICT Development and Projects team.

Chief amongst the new solutions is a self-service mapping application, called Intelimap, that brings disparate datasets together in one place for the first time. Developed using the ArcGIS Web AppBuilder tool, it allows members of staff to create custom reports, perform analysis and gain instant access to accurate location information at any time, using any device, from any location.

Key decision makers within the organisation also have access to a range of Esri dashboards that present live information in an easily-understood format. There are dashboards for different topics, such as prevention, and dashboards for different levels within the organisation, such as managers and front line firefighters. All of the data that is available via the dashboards and Intelimap is stored, catalogued, curated and secured centrally in ArcGIS Enterprise.

No longer overwhelmed by requests for reports and data, the analysis team now uses ArcGIS Insights to undertake sophisticated geospatial analysis on historic incidents and social-economic factors to reveal previously unidentified high risk locations. The team then uses Story Map templates in ArcGIS Enterprise to create interactive reports for senior decision makers, highlighting where fire prevention and protection activities are most needed. The flexibility of the ArcGIS platform allows the analysis team to create ad hoc solutions at speed, to meet new requirements as they emerge.
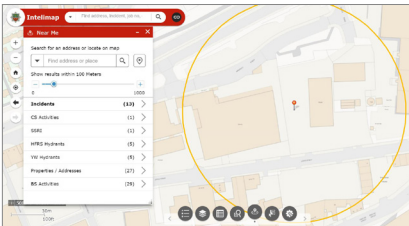
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> "ArcGIS gives Humberside Fire & Rescue Service instant access to the data it needs to make the right decisions and save lives in emergencies."

Jo Mann, Risk and Intelligence Manager, Public Safety, Humberside Fire and Rescue Service

Intelimap allows all staff to see the locations of water hydrants, understand risks near incidents and plan prevention & protection activities
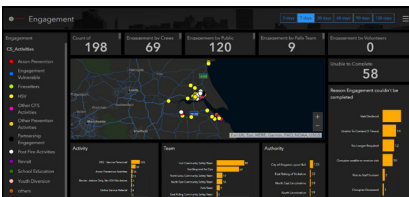

An Esri dashboard allows Humberside Fire & Rescue Service to monitor and plan engagement activities

The Benefits

Improved decision making in life-threatening situations
As they are pulling on their helmets in the back of fire engines, firefighters have access to Intelimap on tablet devices and can view data about the location they are heading towards. Meanwhile, their colleagues in the control room use Intelimap to check historical data, find the nearest water hydrant and direct firefighters to risk critical information. "ArcGIS gives Humberside Fire & Rescue Service instant access to the data it needs to make the right decisions and save lives in emergencies," says Jo Mann, Risk and Intelligence Manager, Public Safety at Humberside Fire and Rescue Service.

Strategic planning of fire prevention activities
Humberside Fire & Rescue Service now uses ArcGIS to more accurately plan where to carry out fire prevention and protection campaigns, based on a better understanding of where there are hotspots of people with high risk factors such as elderly people, living alone who smoke or have limited mobility. "ArcGIS has enabled a more data-driven approach to fire prevention and protection activities," says Martyn Shields, ICT Development and Projects Manager at Humberside Fire & Rescue Service. "We now have tools to present which areas to focus on, using the rich data that Intelimap provides, and help create safer communities."

More efficient fire safety visits
Fire prevention officers at Humberside Fire & Rescue Service can now carry out fire safety visits more efficiently, by using Intelimap to group nearby properties together and visit them on the same day to save time and fuel. Furthermore, they can access accurate information, from their mobile devices, to help them assess risks in different locations and recommend the most appropriate fire safety measures. "For the first time, almost all front line employees at Humberside Fire & Rescue Service have access to up-to-date information in the field, which enables them to work efficiently and make the best decisions," Shields says.

Effective collaboration during COVID-19 lockdown
When the UK went into lockdown during the COVID-19 pandemic, Humberside Fire & Rescue Service launched an ArcGIS solution to coordinate the delivery of food and medicine to vulnerable people. Volunteers used an ArcGIS Survey123 app on their mobile devices to record data about parcels delivered and all of the information was visible to the fire service, police, NHS and other voluntary groups on a dedicated ArcGIS Online dashboard. Shields says, "ArcGIS gave us the ability to create and launch a mobile volunteering solution within a matter of days and collaborate effectively with other emergency service providers and community groups to support vulnerable people at the height of the pandemic."

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