Improving effectiveness with force-wide GIS

# Strathclyde Police

## The Challenge

- Managing and maintaining multiple separate GIS Solutions
- Over 70 Crime Analysts all requiring access to the same crime and incident data

## The Benefits

- Improved targeting of police resources through detailed analysis of crime patterns and trends
- Access to centralised management information, to be used to inform policing strategies

### The Customer

Strathclyde Police is Scotland's largest police force with 7,400 police officers and 2,800 police staff working around the clock to protect nearly 2.3 million people.

### The Challenge

For over a decade, Strathclyde Police have worked with Esri UK to deliver its vision of an integrated force-wide GIS solution. A number of departments started to request GIS-enabled applications, but this led to concerns in the force's IT department. *"We knew that it would be impossible for us to manage and maintain multiple separate GIS solutions,"* says Carragher. Furthermore, to meet the requirements of the National Intelligence Model, the team of crime analysts was extended to seventy, all requiring access to the same crime and incident data.

*"We therefore wanted to develop a single GIS that would give us the ability to manage our data and software centrally, while making innovative applications available right across the force."*

### The Solution

To address this challenge, the force decided to deploy ArcGIS Server, creating one centralised data store for all of its core geographic information. *"Our vision for an integrated force-wide GIS was very clear in our minds,"* says Carragher. *"We continued to implement GIS applications, according to the priorities of the business. However, with each deployment we took one step closer to our long term goal."*

The force turned its attention to its Command and Control Centre. *"We wanted to standardise on a single solution,"* says Carragher. *"Maintaining two separate and incompatible data sets within the force was an unnecessary overhead."* Working in collaboration with Steria, ArcGIS Server was seamlessly integrated with the existing Storm MA Command and Control system in just a morning. It also simultaneously upgraded to Ordnance Survey's MasterMap, the UK's most comprehensive mapping data.

### Benefits

What started out as a vision for the future at Strathclyde Police is now a reality. Today, the force has a fully integrated and centralised approach to GIS that is delivering tangible benefits. Across the entire force, ArcGIS is providing senior officers with better quality management information, which can be used to inform policing strategies. This geographic approach assists police forces in their drive to protect the public and prevent crime. *"ArcGIS highlights trends and makes information available that wasn't available before,"* says Carragher.
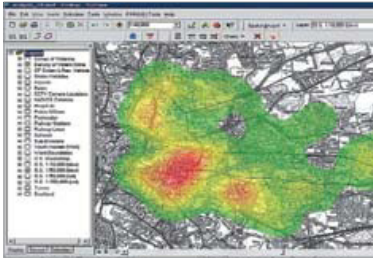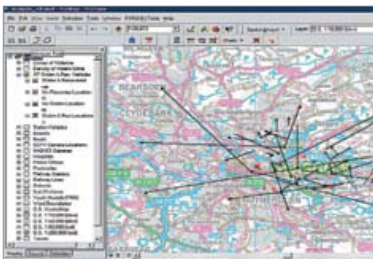
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" They can see the distribution of crime across divisions and this information is then utilised by senior officers when deciding how much and where to allocate police resources most appropriately. "

Joe Carragher, Senior Analyst and Programmer (GIS)


Hot-spot map showing the results of density analysis on violent crime data.


Direction of travel arrow map, based on stolen and recovered vehicle data

### Improved access to police intelligence
Strathclyde Police now has the means to collect, visualise, analyse and share its location-based information. *"ArcGIS provides a central hub for all of our spatial data,"* says Carragher. *"It allows us to pull together data on everything from crime and anti-social behaviour to police properties and make it available right across the force in a format that is easy to understand."*

### Enhanced crime analysis, easily shared with other agencies
Using ArcGIS Server, the force's crime analysts can access information from both the Crime Management system and the Command and Control system and make comparisons by area, by beat, by ward or by data zone. Information is supplied to partners, the local council and central government in whatever format is required. *"This cuts down on the reworking of data and makes reporting much quicker,"* explains Carragher.

### More effective use of police resources
Crime analysts use ArcGIS Server to target violent crime more effectively and have identified hot spots for knife crime. Police in these areas are now equipped with metal detectors and can carry out spot checks. *"They can see the distribution of crime across divisions and this information is then utilised by senior officers when deciding how and where to allocate police resources most appropriately,"* says Carragher. This intelligent use of data leads to more effective use of police resources and can contribute directly to lower rates of crime.

### Added value across multiple departments
In the Air Support Unit, crews use ArcGIS to carry out more detailed assessments of the areas that they are going to fly over, before they even leave the ground. This use of GIS helps the crews to find objects from the air more easily and complete their surveillance flights more quickly and discretely. Inspector David Dick of the Air Support Unit says: *"The use of GIS is essential and integral to the daily routine of the Air Support Unit, and I cannot overemphasise the importance of GIS applications to the team's work."*

### The Future
Strathclyde Police's advanced use of GIS has made it a role model for other forces within Scotland. Already, the force provides web-based GIS services for Tayside Police Force in Dundee and the Scottish Crime and Drug Enforcement Agency in Scotland and there are plans to continually expand GIS into all its core business systems. In addition, Strathclyde Police plans to integrate GIS with new applications, such as handheld and vehicle-based mobile devices. Carragher says: *"As new systems are developed, we intend to ensure that GIS is included as a core component, not an add-on."* He concludes: *"By achieving true integration, we expect to derive more value from our spatial information, enable more rapid reporting and ultimately improve our effectiveness across the organisation."*

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