esri UK
THE SCIENCE OF WHERE™

TRANSFORMING GOVERNMENT

Delivering for citizens with a sense of place

From responding to climate change, to building new homes, to providing healthcare, government organisations in the UK are working hard to improve the lives of citizens and protect the environment.

Success in achieving progress is almost always informed by location, whether that's national, regional or more local, and so a sense of place is essential.

This publication highlights some of the many ways that government organisations are tackling some of the most significant challenges for society using location intelligence to find solutions and improve decision making.

Location intelligence is made possible through a technology called Geographic Information Systems (GIS), combining digital (geospatial) data, data science, and visualisation to deliver greater understanding, real time awareness, transparency, collaboration and citizen engagement.

We believe these examples will inspire you to consider how location intelligence can help your organisation to make an even greater positive impact. We hope you will come to share our passion for the incredible potential of the geographic approach to make the world a better place both now and for future generations.

If you wish to discuss how location intelligence can support your challenges, please feel free to contact us on:

✉ **government@esriuk.com**

📞 **01296 745599**

Resource Management

Managing a National Asset

Case: Forestry England
Covering such a diverse range of functions over a vast estate requires an accurate understanding of where things are and how they interact in order to make informed decisions.

The GIS Solution
Forest Research has created a comprehensive digital twin of their entire estate, providing visibility of the entire range of assets spread across their land. This is accessible at any time and location, including by mobile workers.

The Benefits

- Improved strategic decision making
- Demonstrating regulatory compliance
- Improved business continuity
- Effective budgeting

Empowered Employees
All staff are now connected and empowered to make decisions about the land to help people enjoy their nation's forest and woodland.

Climate Change Awareness

National Education Nature Park

Get Your Learn On
In the UK Education sector, over 3,000 schools use GIS software as part of the Esri UK Education programme, which allows free access to learning resources.

Case: Department for Education
Department for Education (DfE) calculated that the land collectively used by schools and colleges is around two times the size of Birmingham. They made the decision to utilise this statistic to promote positive change to these areas of land.

The GIS Solution
DfE are working with Esri UK to devise digital tools for use by children and young people to record and create a digital nature park. The Nature Park project will map, manage and enhance the grounds in every school, college or nursery in the country, creating one, vast conceptual nature park.

The Benefits
Climate Change awareness
Empower young people to take action
Early geospatial skill development
Improved biodiversity

Digital Transformation

Increased Data Validation and Efficiency

Case: Ordnance Survey

Ordnance Survey (OS) is responsible for surveying all 243,241 square kilometres of Great Britain and making more than 20,000 edits to real world features within its datasets everyday. OS need an efficient and effective geospatial platform to manage its core data capture and maintenance programmes.

The GIS Solution

With Esri's ArcGIS System and professional services support, OS has been able to develop a new large-scale capture and maintenance platform: the Geo-Spatial Production Platform (GSPP). GSPP architecture supports optimised transformational business processes. Sweet for ArcGIS is also the online editing client for OS that has been configured to work with rich data themes.

The Benefits

- Cost & Resource Reductions
- Improved Data Integrity
- Supply Chain Efficiencies
- Supports national and dynamic growth

World leading digital mapping
OS is driving transformational change, re-imagining how it captures and shares changes to arguably the world's most detailed and current national basemaps

Incident Management

Managed Cloud Service
Esri UK Managed Cloud Services host, manage and keep the IM Portal up-to-date to provide resilience and scalability to >10,000 staff.

Case: The Environment Agency
The Environment Agency (EA) is a Category One responder working with other emergency services in the UK to help save lives and protect the environment. Every year, the organisation responds to between 20,000 and 50,000 incidents, such as floods, drought or water pollution, including 40 major incidents.

The GIS Solution
Follow the devasting 2015/16 floods, the EA developed a brand-new ArcGIS-based Incident Management (IM) Portal using in-house resource working collaboratively with Esri UK's Professional Services. The new capabilities support >2,500 field workers to collect data digitally making it instantly accessible via information products to control centres, data analysts, staff, stakeholders and the public via standardised processes.

The Benefits
Rapid appraisal of emergency situations ■
More effective response to major incidents ■
Improved public safety ■
Better planning for future events ■

Transparency

Land Hub for Development Potential

Case: Homes England

Homes England works to help the UK Government to achieve its target of 300,000 new homes per year, by the mid-2020s. As part of its mission to accelerate housing supply and create a more resilient, diverse housing market, the organisation facilitates the sale of publicly owned land, supporting the delivery of new homes and generating returns for the public purse. It used to produce a list, twice a year, of development plots that were for sale, but this didn't provide the detail that developers needed to make informed decisions about where to invest.

The GIS Solution

The interactive solution 'Land Hub' allows users to easily find and explore areas of land using ArcGIS Experience Builder. This solution is available to anyone on a desktop or mobile device, enabling them to see all development sites for a local authority. Users can then view the quality of specific areas such as flood risk and transport hubs.

The Benefits

- Rapid development insight
- Significantly more transparency about development opportunities available
- Developers able to bid confidently
- Time and cost savings for developers

Greater Transparency

Significantly improved transparency resulted in usage of Homes England's Land Hub app increasing by 365% after it was built using ArcGIS Experience Builder.

Reducing Health Inequalities

Protecting patient access to community pharmacies
There are over 11,600 community pharmacies in England, and around 1.6 million people visit a pharmacy every day for healthcare advice, medications, and healthcare services like vaccinations.

Case: NHS South, Central and West
The Department of Health and Social Care wanted to analyse data to help determine which pharmacies in remote locations would be eligible for extra funding to ensure equitable access to pharmacies across England.

The GIS Solution
SCW was able to geocode the locations of all 11,600 pharmacies in England using Esri's ArcGIS Pro. It then used the network analysis capabilities of ArcGIS Pro together with Ordnance Survey's highways network data to calculate walking distances from each pharmacy to the five closest pharmacies, information which was then used as part of the department's funding criteria.

The Benefits
A complete end-to-end process to support funding
Targeted allocation of funding
Greater transparency
Structured and efficient review process

Sustainable Natural Capital

Monitoring and Evaluating the Welsh Environment

Field Mobility
ArcGIS mobile apps enable efficient field work, whether collecting soil samples, monitoring the presence of pollinators, recording plant species or editing woodland features.

Case: Centre for Ecology and Hydrology

In order to develop policies that build social, economic and environmental resilience in Wales, the UK Centre for Ecology and Hydrology (CEH) is leading a collaborative, large-scale, detailed environmental monitoring survey.

The Solution

37 specialist surveyors are using ArcGIS apps to view and capture information on soil, plants, insects, birds, water and landscape features. Botanists have geo-referenced 4,500 soil samples and recorded 1,200 plant species, while other surveyors have used Sweet for ArcGIS to record changes to trees and woodlands. As the whole data collection process is digital, information is instantly available in the office.

The Benefits

- Efficiency savings of a week/survey site (fully digital process)
- Faster insight into emerging environmental trends
- Better project management and delivery
- Greater evidence base to underpin national environmental policies

Changing Landscapes

Preserving historical sites and land
The National Trust protects and conserves 250,000 hectares of land, has 12,000 staff members and 460,000 volunteers.

Case: The National Trust
National Trust archaeologists examine a variety of data to assess landscape change over time. Imagery is an essential part of this work. Historically, that imagery was shared throughout the organisation as PDFs for review and analysis. This approach was time consuming and presented technical challenges.

The Solution

The National Trust needed a solution that would allow staff to more efficiently share imagery. It turned to Esri's ArcGIS Image for ArcGIS Online, a software as a service (SaaS) for hosting, streaming and sharing imagery. This solution enables staff, partners and volunteers to easily access and visualise imagery to gain unique insights.

The Benefits
Democratised access to data ■
Suitable for specialists and non-specialists ■
Previously unsurveyed sites thoroughly reviewed ■
Enhanced collaboration & volunteer value realisation ■
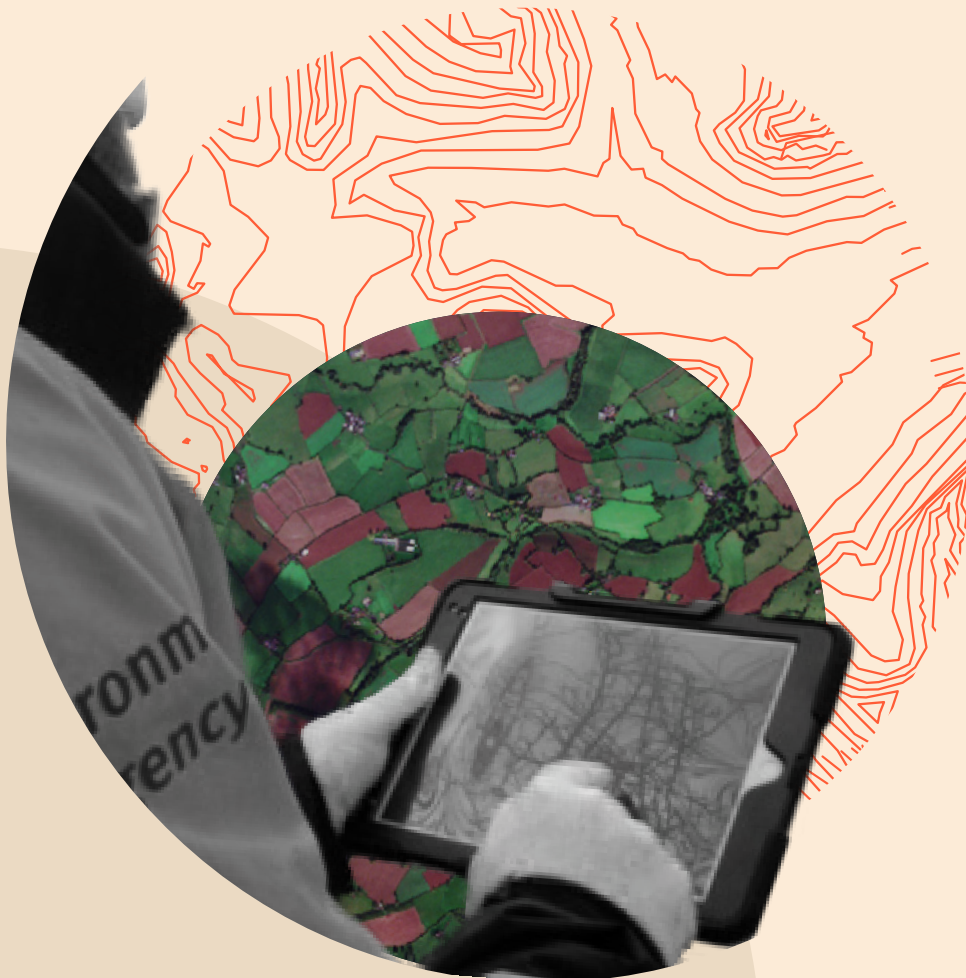
Optimising Healthcare Services

Improving the health of a nation
Geospatial analysis leads to a deeper understanding of healthcare concerns and patient needs in Scotland.

Case: Public Health Scotlland
Public Health Scotland (PHS) set out to optimise the use of Scotland's historical medical data, as well as new data on current healthcare concerns, to help it make well-informed decisions about the delivery of healthcare services in Scotland.

The Solution
PHS used ArcGIS advanced spatial analysis and visualisation capabilities to analyse incredibly complex data over time to improve understanding of, and communication about, health concerns. Projects include developing greater understanding of childhood obesity to inform strategies to promote healthier lifestyles and using ArcGIS Dashboards to make authoritative data about COVID-19 cases available to the public.

The Benefits
- Healthcare where it is needed most
- More accessible public health information
- Clear communication in a public health crisis
- Improved management of disease outbreaks

Data Science

Locating low carbon heat systems in urban areas

Big-data analytics
ArcGIS enabled analysis of large volumes of energy-related data down to building and address level. Across urban Scotland this has raised awareness of the potential for open spaces to support low carbon heating.

Case: Greenspace Scotland for Scottish Government
Heating buildings accounts for >50% of all energy consumed in the UK, and 80% of buildings are currently heated by fossil fuels, generating approximately 25% of our greenhouse gas emissions. The decarbonisation of heat is therefore a top priority for the UK and Scottish Government.

The Solution
Alternative, low carbon heating solutions such as ground source, air source and water source heat pumps are well-proven and can be used to decarbonise heat supply in urban areas. It can, however, be a major challenge to find suitable space for this infrastructure within our densely populated cities and towns.
Analysis of large data volumes of energy-related data down to building levels conducted by greenspace scotland using spatial analysis in ArcGIS has revealed new opportunities.

The Benefits

All 516 of Scotland's urban settlements analysed

Potential to reduce carbon emissions by 4.7m tonnes

Water source heat pumps could meet 50% Glasgow's urban heat demand

Sufficient urban green space identified to meet 79% of Scotland's urban heat demand

Esri was founded on the vision that geographic thinking and digital mapping could help design a better world.

To this day we remain passionately true to that vision, working closely with central and local government organisations across the world, to help them sustainably improve the lives of citizens, realise the potential of their communities and protect and nurture the environment for future generations.

Our technology and services make sense of complexity and model the world from a geographic perspective that recognises the importance of place in improving people's lives.

If you are interested in finding out more about working with us to build a better future, please contact us:

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