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THINK GIS

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100 years of data can help save lives in the NHS



WELCOME CHALLENGING THE WAY WE DO THINGS

It's time to stop and think about new ways of working using geographic information system (GIS) technology, writes Charles Kennelly, Chief Technology Officer, Esri UK.

We are all creatures of habit. In our jobs, we probably spend a large amount of our time doing the same things, in the same ways that we have been doing them for years. Maybe that's because these approaches are tried, tested and proven to be effective. Or maybe it's because we haven't recently taken the time to stop and consider if there might be a better way.

So, let's stop and think.

Could we use GIS to reimagine our business processes, work more efficiently or deliver added value for customers? GIS technology has advanced so far in recent years that it is now possible to do things that, just a few years ago, would have seemed either cost-prohibitive or simply not possible. Improvements in mobile technology have, for example, widened the reach and use of GIS across society, facilitating more community engagement and addressing issues of accessibility and inclusiveness. In government and the private sector, GIS can now be used in new ways to empower citizens, customers and stakeholders. There has also been a huge surge in the use of GIS-focused portals to support things such as large construction and development projects and the use of GIS in digital enablement projects around urban and rural planning.

You may be reading this article during or soon after the Scottish Conference. I have noticed, over the years, that Scotland has led the way in many aspects of societal and environmental change, from reducing smoking levels to increasing the levels of renewable energy. I see that same drive to forge ahead when I talk with our customers about how they are applying Esri's ArcGIS platform in their day-to-day roles, whether they are making decisions about the provision of healthcare or policing, improving the efficiency of commercial organisations or developing new ways to encourage community engagement. Across almost all industry sectors, customers are beginning to challenge the way that they have always done things and explore new, more efficient and effective approaches, enabled by GIS.



This issue of ThinkGIS includes lots of stories about organisations that have already successfully challenged established practices and transformed ways of doing things that have been in place for many, many years. The commercial provider of heritage services, AOC Archaeology ([page 10](#)) is a great example, having recently applied state-of-the-art GIS tools to the challenge of excavating Iron Age settlements for the first time. In the public sector, NHS Information Services Division is discovering that it can make more evidence-based decisions about where to locate new healthcare services in Scotland by analysing data that it has held for nearly 100 years ([page 3](#)). Equally, North Ayrshire Council has introduced a fully-automated approach to scheduling routine grounds maintenance works that has completely transformed traditional ways of working ([page 5](#)).

Scottish Water has recently made ArcGIS available enterprise-wide, empowering 1,200 employees to use GIS in new ways to make better decisions, work more efficiently and deliver great services for customers ([page 13](#)). Meanwhile, the research and consultancy business Wood Mackenzie has improved access to geospatial data and ArcGIS tools for all the subsidiaries and business units in the Verisk group, giving the entire organisation greater insight into global issues and innovative new ways to improve client services ([page 11](#)).

Whatever your job, organisation or industry, I very much hope that these stories, and others in this issue of ThinkGIS, will challenge you to think creatively about how you work. If you stop and think, you too might find a better way with GIS.

Charles Kennelly
Chief Technology Officer,
Esri UK

CHALLENGING THE
WAY WE DO THINGS

NHS INFORMATION SERVICES DIVISION SHOWS HOW DATA CAN HELP SAVE LIVES

Almost
100 YEARS

of NHS data can provide
invaluable insight into
public healthcare needs

In Scotland, geospatial data is now being used in diverse ways to improve awareness of public health issues and inform key decisions about life-saving NHS services.

[NHS Information Services Division \(ISD\)](#) is helping to improve public health services in Scotland by using [Esri's ArcGIS platform](#) to analyse the data on medical conditions, healthcare services and facilities that it has been amassing since 1922. The insight that the organisation is gaining from this geospatial analysis will be used to help NHS Scotland make informed decisions about where to base new services to meet patient demand and deliver better outcomes. For example, ArcGIS will be used to determine the optimum locations across Scotland for key services that will save lives and reduce disabilities in patients.

NHS ISD is also raising awareness of urgent health issues by using ArcGIS to highlight trends and concerns. In one recent initiative, the organisation analysed data on secondary schools and fast food outlets, revealing that a large percentage of pupils have access to unhealthy meals within just a five minute walk of their schools. This research is now being used as part of further studies to help develop greater understanding of childhood obesity and inform strategies to promote healthier lifestyles.

In other projects, the use of ArcGIS is helping NHS ISD to improve the accessibility of information about public health services in Scotland. By taking advantage of the Sweet web editing solution, the organisation is creating an up-to-date map that will accurately show the boundaries for all 942 GP surgeries in Scotland. This interactive map will be made available via NHS 24 and the Scottish Government's new single portal for GP services, making it far easier for anyone in the country to find their nearest GP surgery and access the healthcare services they need.

"By transforming the wealth of data we hold into useable intelligence, we can help NHS Scotland to make the best decisions about health services, make better information available to citizens and help save lives in Scotland."

Andy Gasiorowski
Information Development Manager,
NHS Information Services Division



INSPIRING WHAT'S NEXT

GEOSPATIAL DATA IGNITES PUBLIC INTEREST IN NATURAL LANDSCAPES

"By giving people unprecedented access to our geospatial data and tools and allowing them to explore the park digitally, we have improved their understanding of the area and inspired them to get out into the landscape."

Ed Hudspeth
FRGS CGeog (GIS), GIS Officer,
Northumberland National Park

In a trail-blazing Digital Landscapes exhibition, Northumberland National Park Authority put its geospatial data and ArcGIS tools into the hands of the general public, augmenting people's interest in the biodiversity and conservation of the landscape.

[Northumberland National Park Authority's](#) role is not only to conserve and enhance the park's special qualities, but also to help people understand and enjoy them. The organisation is, therefore, constantly looking for inventive ways to engage with the public. During its Digital Landscapes exhibition at The Sill: National Landscape Discovery Centre, it made its geospatial data and tools available for members of the public to explore for the first time. This innovative use of ArcGIS in an exhibition increased visitor numbers and extended dwell times by up to an hour.

Visitors to the exhibition were able to use ArcGIS Dashboards to gain an improved understanding of the park's biodiversity and cultural heritage. For example, visitors could interact with live data collected by rangers on their mobile phones to investigate the condition of almost 800 miles of paths and track the maintenance of Hadrian's Wall National Trail. Through the touchscreens, visitors were

also encouraged to investigate the distribution of seventeen different bumblebee species and see how this varied with topography, habitat or through time. In addition, an [ArcGIS Story Map](#) gave visitors the opportunity to explore drone imagery and 3D models to gain a deeper appreciation of the rich archaeology of the park.

By showcasing its geospatial data and tools, Northumberland National Park Authority was able to demonstrate how it uses GIS analysis to inform its decisions about park conservation. One popular display showed the movements of hefted (free-roaming) sheep around the park and clearly illustrated why the park authority is working with farmers to encourage the sheep away from vulnerable moorland habitats. The exhibition achieved a 94% visitor satisfaction score and proved that GIS can play an effective role in engaging the community with the landscape, biodiversity and future of Northumberland National Park.

Visitors use interactive ArcGIS Dashboards to explore information about biodiversity and conservation



INSPIRING WHAT'S NEXT

NORTH AYRSHIRE COUNCIL TRANSFORMS GROUNDS MAINTENANCE PROCESSES



In creating a standardised process for scheduling grounds maintenance works, [North Ayrshire Council](#) has improved its efficiency and responsiveness to urgent issues.

North Ayrshire Council has introduced a fully-automated approach to scheduling routine grounds maintenance works that has completely transformed traditional ways of working. Weekly lists of routine tasks, such as grass cutting and hedge trimming, are generated automatically using an [ArcPy Python Script](#) and sent directly to employees' tablets using [Esri's Workforce for ArcGIS](#), with no manual intervention at all, delivering significant improvements in efficiency for the council.

The use of Workforce for ArcGIS in the field creates a standard way of working for three regional teams, for the first time, but has been sympathetically developed to allow employees to work autonomously and adapt their schedules based on local conditions. Grounds maintenance operators can, therefore, draw on their own experience to defer grass cutting if a prolonged dry spell makes it unnecessary or wait

for a dry day to weed flower beds. A proximity feature on Workforce for ArcGIS alerts staff when they are near the locations of other jobs, enabling them to plan their days more productively and save time and fuel.

The council is now integrating its new process for routine grounds maintenance with its Salesforce Customer Relationship Management (CRM) system to help it respond more quickly to ad hoc and urgent requests for maintenance. If a customer phones the contact centre to report broken glass in a playground, for example, a grounds maintenance task will be automatically generated and sent to the relevant team using Workforce for ArcGIS. Within as little as ten minutes, the maintenance request could be with the correct person, in the right location, enabling the safety of parks to be improved very quickly.

"ArcGIS has enabled us to automate our grounds maintenance processes, improving our efficiency and ability to deliver fast, high quality services for citizens."

Dyllan North
Senior Technology Officer, North Ayrshire Council



10 minutes or less
to react to urgent requests for grounds maintenance

ORDNANCE SURVEY IMPROVES THE CURRENCY AND QUALITY OF ITS MAPS



The national mapping agency for Great Britain has developed a new automated process for updating its maps and can now deliver more accurate map products and services for its customers, more quickly.

[Ordnance Survey](#) records as many as 20,000 individual changes to the landscape of Great Britain every day. Now, the organisation has created a fully-automated, end-to-end process that allows it to incorporate these changes into its mapping products with no manual intervention at all. Developed using [Esri's ArcGIS Workflow Manager](#) and ModelBuilder solutions, this new automated map production system saves a significant amount of time, enabling the organisation to update its maps more frequently.

Ordnance Survey's customers benefit from having access to maps that are both more current and more consistent, because changes are now made to the whole map at the same time. For example, Ordnance Survey's OS VectorMap Local dataset used to be updated section by section, maintaining an average currency of three months

across the national dataset. Now, however, using the new automated process, the entire product is updated in full, every three months. The overall accuracy of the map product is also improved, as manual errors and inconsistencies cannot arise from different cartographers working in slightly different ways.

As well as improving the quality of its products for customers, the new automated map production system has also enabled Ordnance Survey to improve its internal efficiency, reduce its costs by releasing agency staff and reallocate employees to other parts of the business. In the production of OS VectorMap Local alone, Ordnance Survey has freed up over twenty cartographers to work on other initiatives that will add further value for the organisation's customers now and in the future.



Ordnance Survey's OS VectorMap Local

"In automating our map production process with ArcGIS, we have improved the consistency and currency of our mapping products and can deliver a higher quality of service for our customers."

Derek Howland
Principal Production Consultant,
Automated Map Production Systems,
Ordnance Survey

COLLABORATIVE WORKING

BLACK & VEATCH BUILDS CONSENSUS FOR £6 MILLION WETLANDS SCHEME

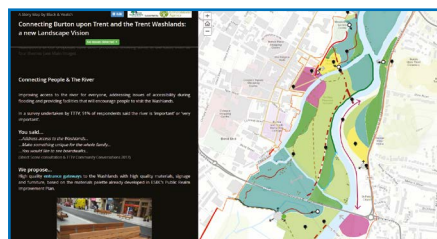
As part of an award-winning project in Staffordshire, Black & Veatch has used ArcGIS to work collaboratively with partners and engage the public in consultations about a multi-million pound wetlands development project.

Working on behalf of the Environment Agency, the engineering consultancy [Black & Veatch](#) was tasked with designing a 630 hectare floodplain near Burton-upon-Trent to enhance its role as a natural flood defence, improve its biodiversity and increase its recreational value for the local community. The organisation used [ArcGIS Online](#) to consolidate environmental data and previous landscape studies from a large number of partners, including East Staffordshire Borough Council, Staffordshire Wildlife Trust and The National Forest, and created a vision for the area that was shared by all stakeholders.

Black & Veatch then developed an [ArcGIS Story Map](#) to enable the partners to collaborate effectively and present their shared vision to the local community. Highly interactive, the Story Map allows people to zoom into specific parts of the site, find out about the quality of the ecosystem, recognise existing historical features and see planned new infrastructure like paths and playgrounds. The [Story Map](#) was published on the East Staffordshire Borough Council website and displayed on large screens at public consultations, making it much easier for people to understand the development plans and contribute their views. In November

2018, Black & Veatch won a prestigious Landscape Institute Award for the Burton and Trent Washlands project, with judges praising the company for the way in which it engaged with the public.

The partners involved in the project are continuing to use the Story Map to help them secure buy-in from other stakeholders, as well as secure the funding that will be necessary to deliver this £6 million scheme. The Story Map has been used by East Staffordshire Borough Council to help justify the allocation of public funds to the project. In addition, the Story Map has been shared with a number of local and national grant-awarding bodies to help the partners gain further financial support and enable them to turn their vision into a reality for the people of Staffordshire.



The ArcGIS Story Map presents environmental, historical and recreational information in a visual, interactive format

“ArcGIS enabled multiple stakeholders to create a shared vision for the future of the Burton Washlands and then communicate that vision to local people in a way that completely captured their imagination.”

Mark Boothroyd
Chief Landscape Architect,
Black & Veatch



A WEALTH OF GIS EXPERTISE



Whether you are discovering GIS for the first time or extending a well-established ArcGIS system, [Esri UK's Professional Services](#) group has a wealth of expertise to help you achieve success. Four consultants, based at Esri UK's Edinburgh office, explain how they and their colleagues help customers develop innovative business solutions, acquire relevant GIS skills and accelerate the delivery of GIS projects.

LEARN FROM GIS EXPERTS

Carmel Connolly
Senior GIS Consultant

"A big part of my role is to pass on my knowledge of ArcGIS and other technologies to our clients, so that they can learn the relevant skills they need to gain best value from their new and existing GIS apps. When I work on-site with customers, they don't just benefit from my knowledge and experience; they benefit from the specialist skills of all the GIS experts I have access to within Esri UK and Esri Inc."

ACHIEVE YOUR GOALS - AND MORE

Alistair McDougall
GIS Consultant

"Customers generally know exactly what they want to achieve, but don't always know the best way to get there. Esri UK's Professional Services team can guide you along your journey, so that you achieve your original goals - and more. I get a huge amount of satisfaction from the 'Ah ha' moment, when customers see the path ahead and recognise the value that GIS can bring to their organisation."



KEEP YOUR PROJECT ON TRACK

Alice Duff
Project Manager

"Many projects have tight deadlines, and customers are rightly concerned about delivering new GIS solutions on time and on budget. That's when an Esri UK Project Manager can really add value. We can manage large or small teams, comprising in-house staff, Esri UK consultants or third party contractors, and apply a range of project methodologies - whether agile or waterfall - to keep your project on track."

DISCOVER THE ENTIRE ARCGIS PLATFORM

Duncan Beaton
Solution Architect

"So much is possible with ArcGIS! Esri UK's Professional Services team can help you discover the functionality of the entire ArcGIS platform and identify the ArcGIS components that will best meet your requirements. We can show you how to configure out-of-the-box capabilities to get faster return on your investment and share information with you about Esri's technology roadmap to help you formulate your future plans."

INSPIRING WHAT'S NEXT

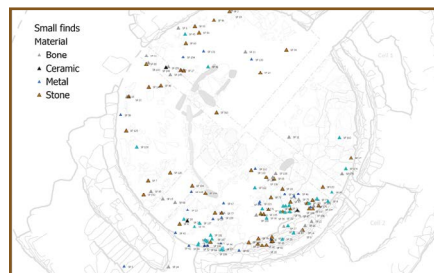
AOC ARCHAEOLOGY REVEALS THE SECRETS OF SCOTLAND'S PAST

"Just because we study the past, doesn't mean to say we live in the past when it comes to recording the nation's heritage. Our use of state-of-the-art GIS technology is enhancing people's understanding of Scotland's history."

Laura O'Connor
Geomatics and GIS Manager, AOC Archaeology

While AOC Archaeology is focused on discovering the truth about people who lived hundreds or thousands of years ago, its use of GIS technology is right up-to-date.

A commercial provider of heritage services, [AOC Archaeology](#) is using solutions from [Esri's ArcGIS platform](#) to help it collect and interpret data about Scotland's past. At Clachtoll Broch, an Iron Age structure in the north of Scotland, archaeologists are using [ArcGIS Pro](#) to map and analyse 500 archaeological finds recovered from the site. This GIS analysis is revealing how certain areas around the broch were occupied two thousand years ago, allowing archaeologists to gain a deeper understanding of how Iron Age society lived.



Using ArcGIS to analyse the locations of ancient artefacts excavated at Clachtoll Broch in Scotland

AOC Archaeology's use of ArcGIS mobile apps in the field has reduced project costs by as much as 25%, by improving the efficiency of processes for capturing and sharing data. Archaeologists no longer need to take paper-based maps and documents out onto sites, in all weather conditions and difficult terrains. Instead, they enter information into ArcGIS apps on mobile devices, and the data is almost immediately visible to colleagues in offices. Employees spend less time at sites, don't need to type up notes when they get back into the office and have easy access to all the information they need to produce professional reports more quickly.

In addition, AOC Archaeology can now share archaeological information with clients and the wider public more effectively, by using ArcGIS Online to enable people to interact with the data themselves. The company has recently published an interactive ArcGIS web app for the Inverness Townscape Heritage Project that displays information about the history and development of a key street in the town. The web app includes a time slider tool, comparing historic maps and modern satellite imagery, which really captures people's interest in the area and brings centuries of history to life.

25% cost savings
from improvements
in efficiency

CHALLENGING THE
WAY WE DO THINGS

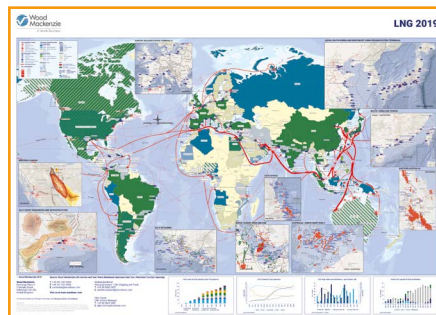
WOOD MACKENZIE DRIVES INNOVATION THROUGH COLLABORATION

By setting up a single centre of GIS expertise and encouraging data sharing, Wood Mackenzie is helping all businesses in the Verisk group to gain valuable new intelligence about global markets and implement innovative new solutions to improve client services.

A global leader in natural resources intelligence, [Wood Mackenzie](#) is part of the Verisk group. This year, Wood Mackenzie has established a new centre of excellence for GIS and is helping all the businesses in the group to share their geospatial data for the first time, using the [ArcGIS platform](#). This new centralised GIS service is delivering cost savings and efficiency improvements throughout the group, by simplifying GIS licensing and removing duplicated data management tasks.

Most significantly, the new collaborative approach gives Verisk business units and subsidiaries access to a larger quantity of global geospatial data and the ArcGIS tools to analyse and visualise it. They can, therefore, take greater advantage of geospatial information to gain valuable new insight into factors that impact on global markets. For instance, data on political, human rights and environmental issues that was previously held by just one subsidiary for assessing insurance risks can now be used by another business unit to identify factors that might impact equity valuations.

In addition, Wood Mackenzie is sharing ArcGIS best practices with Verisk business units and subsidiaries, paving the way for all businesses in the group to benefit from state-of-the-art GIS apps incorporating AI and modelling. Using the rich features of the ArcGIS platform, some data layers can now be updated in six hours instead of daily, enabling businesses to provide more up-to-date information to clients. Wood Mackenzie is also using ArcGIS tools and agile development techniques to create a series of innovative proof of concept solutions, which are expected to help group businesses deliver new, value-adding services for their clients.



16 business units can share geospatial data and innovative ArcGIS apps

"We are improving access to geospatial data and developing advanced ArcGIS solutions for the wider organisation, so that all business units can gain a deeper understanding of global issues and make better decisions about risks and opportunities for clients."

Stephen Bull
GIS Director, Wood Mackenzie



MOTT MACDONALD EXTENDS GIS BEST PRACTICES TO GLOBAL TEAMS

"Our Global Enterprise Agreement with Esri will enable us to make another leap forwards in our use of ArcGIS and allow us to open up our ArcGIS tools, web services and platforms to all employees, across our entire global organisation."

Helen Pickard
Global GIS Practice Leader,
Mott MacDonald

16,000 employees

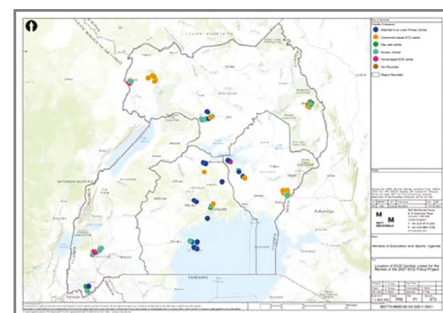
will be able to access geospatial data via a global ArcGIS Portal

The global engineering, management and development consultancy Mott MacDonald has signed an Esri Global Enterprise Agreement that will enable it to share its ArcGIS solutions and best practices with teams all around the world.

Over the last four years, [Mott MacDonald](#) has transformed the efficiency of multidisciplinary teams in the UK by using [ArcGIS](#) to manage, visualise, analyse and share data from many different sources. Now, under the terms of a new Global Enterprise Agreement, employees in the firm's other international offices will be able to benefit from the same ArcGIS-enabled working practices that have proven so successful in the UK.

Mott MacDonald anticipates that it will be able to improve the quality of data collected for its clients, by making more use of ArcGIS mobile solutions in international projects. In one recent assignment, the company used [Survey123 for ArcGIS](#) to help it build up an accurate picture of early childhood care and educational facilities in Uganda as part of a policy review for the government. Surveyors were able to gather more detailed information at 143 sites in 10 Districts across the country and make data available to the wider project team more quickly. This accelerated the project's capacity to deliver a high quality outcome for the client, including thorough representation of the data on a geographical map.

The global agreement is also expected to significantly improve collaboration between employees working in multinational teams, by improving the quality, accessibility and consistency of project information. All of the company's 16,000 employees will be able to access geospatial data via a global ArcGIS portal to help them better understand the geographic context of projects in up to 150 countries. In addition, project teams will be able to access dedicated ArcGIS services, analytical tools and data, relating to their specific client engagement, regardless of where in the world they are working.



ArcGIS displays the locations and types of early years and educational facilities available in Uganda



CHALLENGING THE
WAY WE DO THINGS

SCOTTISH WATER EMPOWERS EMPLOYEES ENTERPRISE-WIDE



Throughout its entire business, Scottish Water is empowering employees to make better-informed operational and strategic decisions, work more efficiently and make complex information easy to understand.

Having recently replaced its legacy GIS systems with a central ArcGIS platform, [Scottish Water](#) now makes GIS services and data accessible to over 1,200 employees, giving them vastly improved insight into the organisation's assets and operations and enabling great service for its customers. Employees can, for instance, use ArcGIS to gain a clearer understanding of different zones within the water network, from treatment works to taps, and make better operational decisions on a day-to-day basis, as well as plan future investments in network improvements more strategically.

Furthermore, the creation of the single [ArcGIS platform](#) has led to significant improvements in efficiency, as all geospatial data is stored and managed in one place, for the first time. For example, data on pipe bursts in the network is now collected once, held centrally and used by three separate business units, avoiding many hours

of duplicated effort. Employees spend less time managing data and more time actually using it to help them plan and implement effective service enhancements for customers.

Scottish Water is also transforming the way that it shares information using ArcGIS. Vital information on topics such as flood risk can be shared internally using interactive web apps and [Story Maps](#), making complex scenarios easier for all employees to understand. In the future, the organisation also plans to use ArcGIS to share data externally with other utilities, government bodies and local authorities, to help these partners better understand the locations of Scottish Water's assets. Scottish Water anticipates that this collaboration will reduce the risk of third party damage to its assets and help its partners plan their own operations more efficiently, enabling improved services for people across Scotland.

"The enterprise-wide deployment of ArcGIS has enabled us to make a step change from a system of record to a platform for business transformation. Now Scottish Water is on a journey to fully leverage its investment in ArcGIS and deliver significant improvements in decision making and data quality, all for the benefit of getting the best service and the best value for our customers."

Stuart Hill
Asset Inventory Leader, Corporate Data & Compliance,
Scottish Water

1,200

employees use ArcGIS
to gain clear insight
into the business

ESRI UK ACCELERATES GIS CAREERS FOR GRADUATES



Now in its fifth year, Esri UK's Graduate Programme is putting GIS, geography and computer science graduates on a fast track towards a successful career in the GIS industry.

To help it meet rising demand for GIS solutions and services, Esri UK actively recruits and trains recent graduates. The company has a two-year [Graduate Programme](#) in which graduates rotate around seven different business areas, from technical support and pre-sales to professional services and content development. The scheme builds graduates' knowledge of the ArcGIS platform, but also helps them to develop important skills in customer interaction, time management, prioritisation and team working that will be vital for their career progression.

For the young people who join Esri UK after completing their degrees, the Graduate Programme provides a fantastic opportunity to experience many different job roles and develop both professionally and personally. Carly Jackson, one of Esri UK's newly-appointed graduate trainees, says: "The structure of the programme means that I will, over the next two years, gain an insight into how different areas of the business work. I won't just

develop the skills to fulfil one role, but will build up an understanding of how people in different teams interact with each other to deliver the right resources and professional services to meet the needs of customers."

By the time they reach the end of the training programme, graduates have developed the technical and commercial skills to transition into a wide range of positions, whether they stay at Esri UK or move to other organisations. Dominic Saunders has recently taken up the full-time position of GIS Data Consultant at Esri UK, after successfully completing the graduate scheme. "Throughout the rotations, I got to experience the whole customer journey and learned how to interact with prospective, new and established customers at different points in that journey," he says. "The communication skills I learned will help me to work closely with customers in my new role and will be valuable throughout my career."

Thirty three young people have joined Esri UK through the Graduate Programme to date, and we are looking for more graduates to start in September 2020.

*More information is available at:
[www.esriuk.com/en-gb/careers/graduates/
application-process](http://www.esriuk.com/en-gb/careers/graduates/application-process)*

EDUCATION

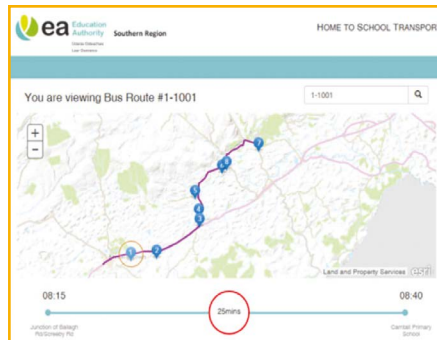
EDUCATION AUTHORITY TRANSFORMS SCHOOL TRANSPORTATION APPLICATION PROCESS

Education Authority Northern Ireland has received positive feedback from parents following the launch of three web apps that simplify the application process for school transportation.

The [Education Authority Northern Ireland](#) provides school transport for 85,000 school children, and every year it processes around 29,000 applications for transportation from parents, many of whom are uncertain about their eligibility or journey options. The organisation has now launched three web apps that accelerate the application process and make it more convenient, simple and transparent for parents and carers.

Developed using [ArcGIS](#), the apps provide parents with accurate information at each stage of the application process, enabling them to make well-informed decisions about their children's school journeys. The first app enables parents and carers to ascertain immediately whether or not their children are entitled to free transportation, based on an accurate calculation of walking distances from their home to school. If eligible, they can then submit their application online, from within the same app, in a matter of minutes. Once they have been allocated transport, parents can use two other BETA apps to plan the best route to school for their children, as well as notify the authority of the stops where the children will get on and off the bus, ferry or train.

As well as meeting the needs of parents, this new ArcGIS-driven approach has enabled the Education Authority Northern Ireland to eliminate approximately 120 days of back office administration. This significant time saving stems in part from the reduction in applications from people whose children are ineligible for transport, partly from the removal of paper forms and partly from the automatic calculation of walking distances. The Education Authority Northern Ireland also uses an Esri-based dashboard to monitor the application process in real time and help it deliver a consistently fast and high quality service for families across the whole of Northern Ireland.



Parents use ArcGIS apps to plan their children's routes to school and apply for school transportation

Eliminated approximately
120 days
of back office administration

"ArcGIS apps have allowed us to improve the school transport application process for parents and focus our time on delivering excellent education support services for children and young people."

Colm Daly
Digital Transformation Manager,
Education Authority Northern Ireland





INSPIRING WHAT'S NEXT

WHAT'S NEXT FOR YOU?



If you need inspiration, take a look at Esri's ArcGIS Living Atlas of the World. This treasure trove of interactive maps and authoritative data will not only stimulate ideas for your next project, but will also help you deliver it more quickly.

[Esri's ArcGIS Living Atlas of the World](#) is the perfect place to find ideas for new ArcGIS projects and maps. Curated by data experts at Esri from around the world, it includes a huge array of informative and stimulating maps on everything from global temperature changes and the locations of ancient orchards to UK purchasing power per capita and live traffic updates.

The interactive, digital atlas doesn't just allow people to view maps; it also enables ArcGIS users to more easily

find and download a vast amount of authoritative data to include in their own maps and GIS apps. You can save hours of effort and produce high quality maps very quickly by simply accessing data from a wide range of reputable data providers, available in one place and ready formatted for use in ArcGIS. Furthermore, you can draw upon the data to undertake in-depth business analysis and improve decision making or simply create general interest maps about sporting events or the local area that will inspire others.

"There's tremendous value in being able to quickly pull relevant data into our GIS applications from the ArcGIS Living Atlas, without the need to go on the hunt for data from multiple sources."

Olivia Powell
GIS Manager, Avon & Somerset Police

Customers with an ArcGIS Online account can access Esri's ArcGIS Living Atlas of the World and also contribute to it, by publishing their own maps via this public portal.

Go to www.esriuk.com/arcgis-content to find out more or contact datacurator@esriuk.com with your questions.