

Meeting the needs of 10.5 million Londoners

# Greater London Authority

## The Challenge

- Deliver the infrastructure to support a population of 10.5 million people in London by 2041

## The Benefits

- Time and cost savings from more collaborative delivery of infrastructure projects
- Potential savings of £4 million were the tool to reduce road congestion and traffic disruption by 1 percent
- Infrastructure investment ahead of demand to accelerate the supply of new housing in London
- Improved services and facilities for people living and working in London

The Greater London Authority (GLA) is pioneering a new, more collaborative approach to infrastructure planning to guide the long-term growth of the capital. Using Esri's ArcGIS platform, it has developed an inventive web app that will help public and private sector organisations make better investment decisions and deliver the right infrastructure to meet the needs of over 10.5 million Londoners by 2041.

### The Challenge

Based on an analysis conducted by the GLA, the number of people living in London is expected to grow by almost 2 million between 2018 and 2041, placing a significant added strain on the city's core water, energy and transportation infrastructure. Indeed, the city will require sizeable capacity increases across its infrastructure networks, including public transport, electricity, waste processing, digital communications, recycling and other services to support the building of 66,000 new homes per year.

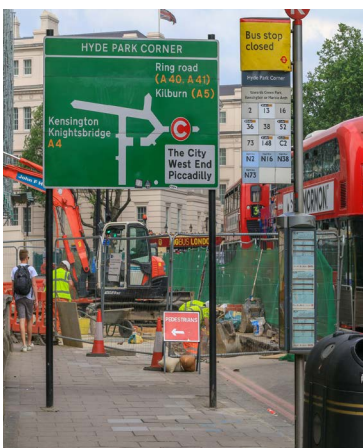
Recognising the need for considerable long-term investment in infrastructure in the city, London City Hall launched a new coordinated approach to infrastructure planning, called The London Infrastructure Plan 2050. The former Mayor then convened an Infrastructure Delivery Board, comprising top leaders from London's water, energy and transport providers, as well as London borough councils, central government departments, engineers, developers and advisors. Very quickly it became clear that these infrastructure providers needed an effective way to share their long term business plans and gain better information to help them coordinate their delivery of infrastructure schemes.

### The Solution

The GLA is a long-standing user of geographic information system (GIS) solutions from Esri UK. Using Esri's ArcGIS Online and the Esri JavaScript API, the organisation built a prototype app for infrastructure planning in London, known as the GLA Infrastructure Mapping Application (IMA), with support from Esri UK's Professional Services team. The GLA continued to refine and build on the solution over several months and then, on 1st August 2017, it launched Version 2.0, a more sophisticated and user-friendly solution.

The app brings together future investment data on everything from new housing and schools to sewerage and rail services, and shows it alongside relevant contextual data on population growth and, increasingly, capacity requirements. As a result, users can easily see where infrastructure and development is planned—to help them identify opportunities for coordination and evaluate where additional infrastructure investment is needed—in a highly visual map-based format. The app is available in two versions: one limited to infrastructure providers and the public sector, and another for members of the public.

Molly Strauss, Senior Policy and Programme Officer at GLA, says, "Our Infrastructure Mapping Application represents a major step forward in integrating disparate data sets from industry and the public sector in London. In the first four months alone, the app generated nearly 9,000 page views."



Esri UK | Millennium House  
65 Walton Street | Aylesbury  
Buckinghamshire HP21 7QG  
T 01296 745500 | F 01296 745544  
E info@esriuk.com | www.esriuk.com

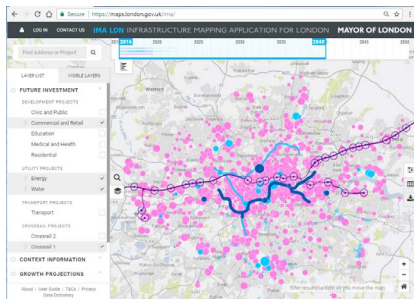
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Molly Strauss, Senior Policy and Programme Officer, Greater London Authority



The London Infrastructure Mapping Application, showing coming commercial and retail development along with planned investment in water and energy networks

## The Benefits

### ***Time and cost efficiencies from joined-up project delivery***

The GLA anticipates that the private and public sector organisations involved in delivering new infrastructure in London will make time and costs efficiencies, in the medium and long term, through more joined-up project planning. For instance, a water utility can see where and when a new rail tunnel is being dug – many years in advance – and potentially plan to upgrade a nearby water main in conjunction, generating cost savings. Similarly, gas and electricity providers can see if they are making infrastructure improvements in the same area, in a similar time period, and make plans to share labour and materials to reduce costs.

### ***Reduced road disruption and associated costs***

Using the GLA IMA, organisations can collaborate more closely to minimise road disruption for Londoners. For instance, two utility companies can better coordinate the timing of works so that they both operate on the same street at the same time, reducing the need for repeat road closures. This is not only good news for Londoners; it also leads to significant cost savings, as Strauss explains. “Were our ArcGIS-based app to reduce road congestion from planned works on the TfL network by just 1% over one year, the GLA has estimated that the cost savings due to avoiding delay would be in excess of £4 million.”

### ***The right investments, ahead of demand***

For the first time, utilities and transportation providers in London can easily see the locations of planned new housing, public sector and commercial developments and make the informed investment plans to ensure that the necessary services are ready before they are needed. For example, a water utility can see if large-scale growth is expected in an area where there is limited capacity in its water drainage network and plan appropriately to extend it. “We believe that use of our ArcGIS app can encourage utilities to invest ahead of demand and therefore support the delivery of the Mayor’s housing targets,” Strauss says.

### ***Better outcomes for Londoners***

Finally, the use of the GLA IMA contributes greatly to better long-term decision making in London. The public sector, utilities, transportation providers, developers and engineers are able to plan ahead based on improved knowledge of population growth, housing developments, new schools, existing infrastructure constraints and planned infrastructure investments. “The result of all of this is better outcomes for Londoners,” Strauss says. “With the development of our ArcGIS app, we are helping the public and private sector to work together more effectively to help create the necessary infrastructure for the new homes, jobs and services that Londoners need.”

Esri UK | Millennium House  
65 Walton Street | Aylesbury  
Buckinghamshire HP21 7QG  
T 01296 745500 | F 01296 745544  
E info@esriuk.com | www.esriuk.com

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