

Delivering a £4 billion investment plan for London's Roads

Transport for London

The Challenge

- Plan and coordinate hundreds of road improvement projects over more than 10 years

The Benefits

- Better informed operational and planning decisions
- More efficient and collaborative working
- Less disruption for all users of London's roads
- A flexible platform for developing future GIS apps



An enterprise deployment of Esri's ArcGIS platform is helping Transport for London to transform the quality of London's roads for residents, commuters and visitors alike. Using GIS, the organisation's employees can make better operational and planning decisions.

The Challenge

In 2014, Transport for London (TfL) embarked on a £4 billion investment plan that encompasses hundreds of separate projects to improve the capital's roads, tunnels, bridges, pedestrian areas and cycle paths, over a period of at least ten years. This will completely transform the surface transportation network in London, making it fit for the increasing demands of a growing population and deliver healthier streets for all.

To make sure the success of this highly ambitious programme, the organisation recognised the need for one single, central source of information that would provide a clear, up-to-date picture of which schemes were taking place, where and when. It was vital for the success of the plan for multiple project teams to be able to collaborate to coordinate simultaneous projects, balance numerous priorities and minimise public inconvenience.

The Solution

Rather than just develop a stand-alone, web-based geographic information system (GIS) application to meet its immediate business requirement, TfL decided to first develop a corporate, server-based GIS platform and then build its web app on that foundation. This well considered, far-sighted and undoubtedly strategic decision multiplied the benefits from TfL's GIS investment exponentially.

TfL developed its enterprise GIS platform, known internally as GIS-as-a-service, using Esri's ArcGIS Server and Portal for ArcGIS solutions, with support and specialist advice from Esri UK. It then used Esri's web application templates to build an internal, intranet-based web application called the Surface Playbook that enables employees to view 400 plus layers of project and asset data on interactive street maps. Subsequently, TfL has released an external version of the Surface Playbook for London borough councils, which displays data layers that are directly pertinent to the road network improvements.

Internally, Surface Playbook is being used by over 2000 employees, from multiple different teams in the Surface Transport, as well as other sections of TfL. The external version of the Surface Playbook is now available to all TfL stakeholders including London Boroughs, GLA, Utilities and Highways England. Users of both solutions can select a location on the interactive map and use the time-slider tool to view all current and planned schemes or works. Then, they can simply click on the map to access asset and other project information, all from one place, for the first time.

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“ ArcGIS has enabled TfL to create a flexible, scalable and sustainable foundation for future data and collaboration. ”

Fiona Clowes, GIS Lead, Transport for London



Surface Playbook - intranet-based web app enabling employees to share maps and data. An invaluable tool to aid planning and decision making.

Benefits

Better informed decision making

Surface Playbook brings together information previously held in different systems and departments, in mixed formats, and makes it accessible to everyone. Consequently, teams can make better informed decisions about where and when to carry out works, to avoid duplicated effort and speed up the completion of planned schemes. “Surface Playbook provides a comprehensive picture of our road network, assets, current works and projects in one place, giving employees the best information from which to make important planning and operational decisions,” says Fiona Clowes, GIS Lead at TfL.

Improved operational efficiency

Employees save time as they no longer have to check multiple systems and manually collate information or send information requests to other departments. Likewise, they don't have to request specific maps from the GIS team and wait for them to be produced, as they can self-serve all the maps they need from Surface Playbook and use them to collaborate more easily with colleagues. Employees in boroughs can also use the external Surface Playbook to strategically plan road network improvements and coordinate and collaborate with TfL, further extending the benefits of the GIS to stakeholders.

Less disruption for road users

Ultimately, by helping to ensure that projects are well planned and coordinated, the Surface Playbook will help TfL to minimise the impact of improvement works on the travelling public.

A platform for future aspirations

The creation of the enterprise GIS platform has transformed the way that the whole organisation views spatial data, as Clowes explains. “GIS has gone from being a desktop application used by a single team to being a fully-embedded enterprise-wide IT system, available to the entire business.”

Most significantly, the GIS platform has paved the way for TfL to introduce many more applications that will add value for the business in the months and years ahead, in areas such as CCTV, road work permits and other line of business applications. “ArcGIS has enabled us to create a flexible, scalable and sustainable foundation for the future,” Clowes comments. “Our ArcGIS platform is already transforming our business and will continue to support the business to deliver high quality data to users to assist with their decision making and facilitate collaboration and coordination opportunities long term.”

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