Case Study

Transport for the North (TfN)

Client:

Transport for the North (TfN) brings together representatives from regional authorities across the north of England to enable the region to speak with a single voice to Government. Local transport authorities, combined authorities and Local Enterprise Partnerships from the region are acting collectively as TfN to work with the Government, Highways England, HS2 Ltd, and Network Rail to develop a Northern Transport Strategy.

Industry:

Transport

Product:

Aerial Photography

"Our organisation is required to work with a detailed and accurate model of the road network. Using Bluesky aerial photography though the APGB service, we are able to ensure the model is maintained using up-to-date information. In addition, it enables us to implement automated processes like image recognition to speed up updates and free up staff time. Aerial photography and other remote-sensed resources from the APGB provide a rich source of information, allowing us to innovate, creating datasets that e.g. identify opportunities for domestic EV installations based on identifiable driveway parking."

Simon Coleman, Senior Analyst at Transport for the North

Summary:

TfN is leveraging Bluesky's high resolution aerial photography, accessed through the Aerial Photography for Great Britain (APGB) resource, to develop object detection models that will transform highway modelling and infrastructure planning. These models will automate the verification of road junction types and identify property features such as driveways, reducing reliance on manual checks and improving efficiency. This initiative not only supports current projects but also lays the foundation for future innovations across northern England.

Challenge:

TfN is exploring innovative ways to enhance efficiency in its highway modelling and infrastructure planning processes. Currently, highway modellers face the labour-intensive task of verifying road junction types by manually searching though areas using tools such as Google Maps and Apple Maps. This time-consuming approach also introduces operational inefficiencies, slowing down critical modelling work. Accurate junction verification is essential for reliable traffic modelling and planning, but this current method demands significant resources.

Additionally, infrastructure planning teams are preparing policies for the transition to electric vehicles (EVs) and require precise insights into property layouts, such as identifying homes with driveways or potential parking spaces, to inform strategic EV charging infrastructure placement. The challenge here lies in developing a scalable, automated solution that minimises manual effort while delivering accurate, up-to-date information across the region.

Solution:

To overcome these challenges, TfN is developing object detection models which will be trained to automatically identify road junction types and property features using Bluesky's high resolution aerial photography. Once operational, the models will be routinely updated with Bluesky's most recent aerial photography capture, ensuring teams always have access to accurate, real-world data for informed decision-making.

The APGB service eliminates the need for TfN to commission its own aerial surveys, something that could prove time-consuming with contract negotiations and budget approvals. The immediate access to Bluesky's national aerial imagery bank enables TfN to experiment with small-scale test areas for upcoming projects with a view to quickly scaling up, as coverage is already available across its entire operational area.

Results:

By implementing these object detection models, TfN anticipates significant time savings and improved accuracy in verification processes. Automating junction classification will remove the need for labour-intensive manual checks, freeing resources for other tasks.

For EV infrastructure planning, the ability to identify properties with driveways or parking availability at scale will deliver actionable insights directly from the desktop. TfN also have the ability share its EV charging data product with other APGB members, including Local Authorities and Local Transport Authorities, enabling them to make more informed decisions about where to locate EV charging infrastructure. This shared insight supports evidence based planning and can be used to strengthen applications for Local Electric Vehicle Infrastructure (LEVI) funding.

The currency of Bluesky's aerial photography is a key advantage ensuring the models, and the teams using them are working with the most accurate representation of ground conditions available at a high-resolution. This currency of data is critical for reliable traffic modelling and planning, reducing the risk of outdated information impacting decisions.

Beyond these initial applications, the models will create a foundation for future innovations, enabling teams to interpret on the ground conditions more effectively and support strategic decision-making across multiple projects.

	Imagery Specification	
Resolution	**5cm**	**12.5cm**
Coverage	Great Britain	Great Britain
Accuracy XY	± 10cm rmse	± 30cm rmse
Formats	Include: JPG, TIFF, ECW	Include: JPG, TIFF, ECW
Standard Projection	British National Grid	British National Grid
Tile Size	1km x 1km (20,000 x 20,000 pixels)	1km x 1km (8,000 x 8,000 pixels)
Metadata	Gemini 2.3	Gemini 2.3

Get in touch today at **support@apgb.co.uk**