

Connecting disconnected data for National Highways



Cohesive

The Background

National Highways is the government organisation charged with the design, build, operation, and maintenance of the strategic road network in England.

In Roads Investment Period 2 from 2020 to 2025 they have £27.4bn* of major capital projects to complete, to increase safety, improve customer experience and increase the sustainability of the strategic road network.

Information is critical to National Highways and their delivery partners in improving productivity and reducing the multiple risk factors of safety, cost, time, and quality on major projects.

*<https://assets.publishing.service.gov.uk/media/5ffb39808fa8f56405c5f5bf/road-investment-strategy-2-2020-2025.pdf>



The Challenges

The principal challenges were to:

- Define the data and information required and ensure it was delivered when needed and to the correct standard
- Unlock as-built asset data, which was stored in siloed systems to provide a secure single version of the truth presented graphically, geospatially, or as documents, to inform the design and construction phases
- Deliver a single set of trusted leading metrics, shared with supply chain partners, to gain deep insight into project performance and sustainability to enable faster and more informed data-driven decision-making

The aim was to establish the backbone of a digital twin for National Highways for more efficient and effective digital design and construction.



The Solution

Cohesive's Digital Advisory Services were selected based on extensive previous industry expertise and a history of delivering value for linear asset owner-operators.

Cohesive further understood the difficulties of bringing together disconnected and complex datasets and then visualising them in a way that added value to decision-makers.

Delivering a platform called the Business Information Framework (BIF) for National Highways provided them with a single-window into structured, unstructured, geometric, and geospatial data, to help provide them with information, and not data.

Bringing to bear our previous industry experience, we were also able to help answer common questions around carbon reporting and data governance through the lens of international BIM standards.

From a technical perspective, the approach used a core solution of Cohesive's proprietary DataConnect platform, Bentley iTwins and BCDE, which were all expertly configured by Cohesive to sit at the heart of the BIF, to provide an assured and intuitive interface into design, asset, and project control data.

BCDE was used as the connected data environment to hold the project information model, and iTwins to make federated 3D data accessible across the business with further access to Bentley ProjectWise for design data and Bentley AssetWise for asset data, including the Structures, Geotechnical and Drainage data assets.

Further Cohesive advisory services around organisational design, digital strategy and policy were used and additionally, digital services around platform delivery to conform with the client's digital strategy and architectural objectives.

Key capabilities and functionality of the delivered solution included:

- Project Controls reporting that provides a single view for client and supply chain to determine Programme Performance.
- Visualising as-built asset information from across 40+ datasets in one pane
- Information Delivery Planning assurance based on ISO19650 and client data standards
- Data Governance for information assets to improve data quality from the supply chain



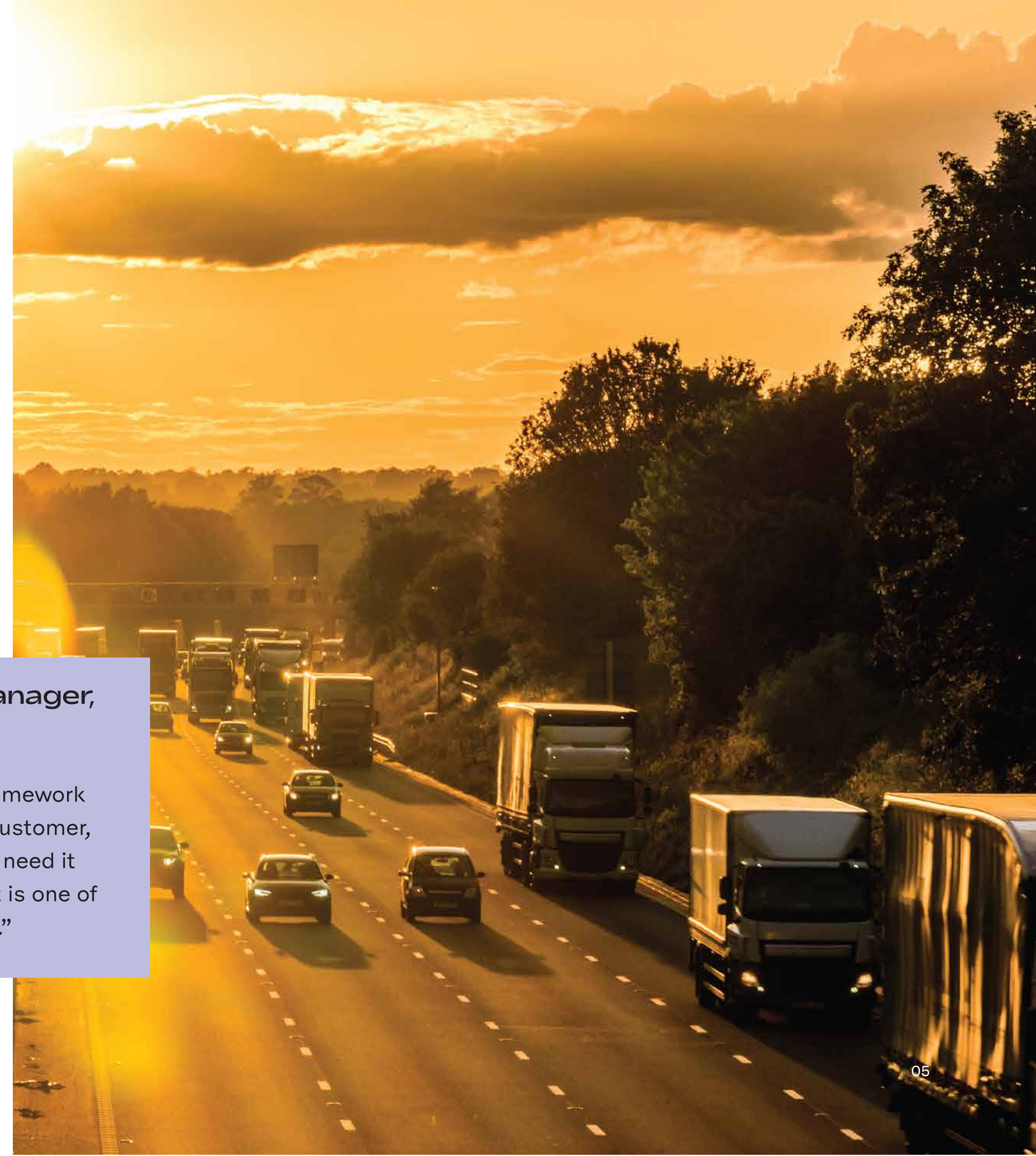
The Results

The BIF provides a reliable source of information for users, making it quick and easy to search and filter, identify what is most relevant, visualise it, analyse it and use it to inform key decisions.

This enables improvements in the way assets are delivered, operated and optimised. Information from design systems, project controls, health & safety and finance can all be standardised, integrated and shared in a single place, which underpins sustainability, cost savings and operational efficiency.

Russell Brooks, Principal Data and Information Governance Manager, National Highways, further added:

“By providing a single environment for trusted information the Business Information Framework helps us make better, more informed decisions that underpin our imperatives: safety, customer, and delivery. It puts verified data securely in the hands of those who need it, when they need it and, over time, can be used to help maximise benefits throughout the asset lifecycle. It is one of the key enablers for our SMP Alliance and is now being rolled out across Major Projects.”





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