We can use Geospatial Technology to Calculate Railway Infrastructure Utilisation

Analyzing railway infrastructure utilisation: A geospatial approach

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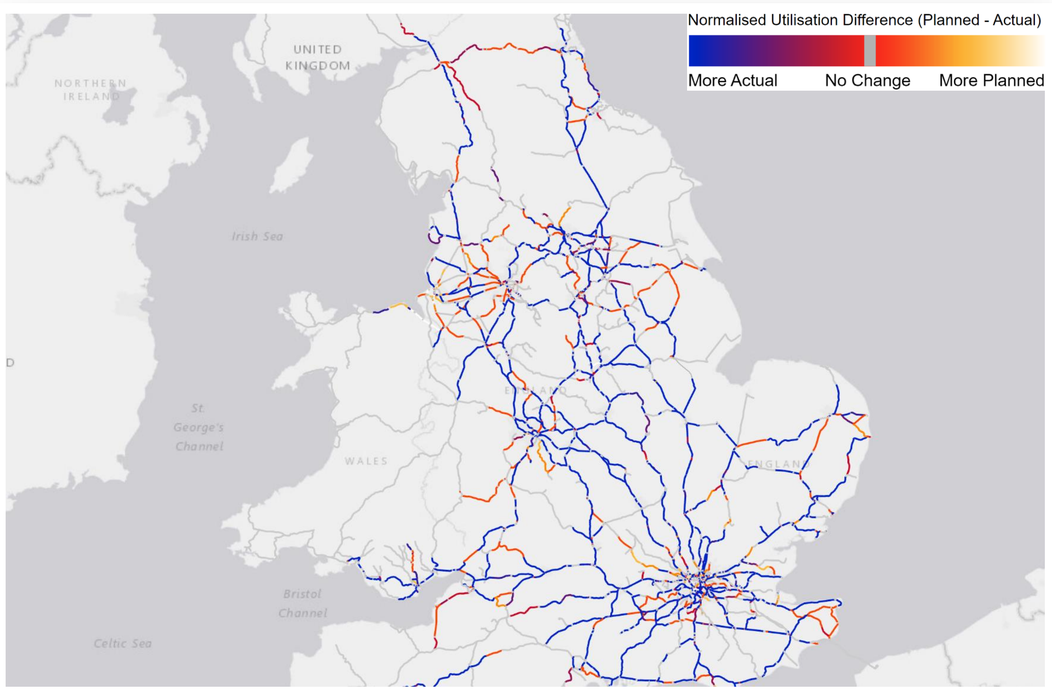
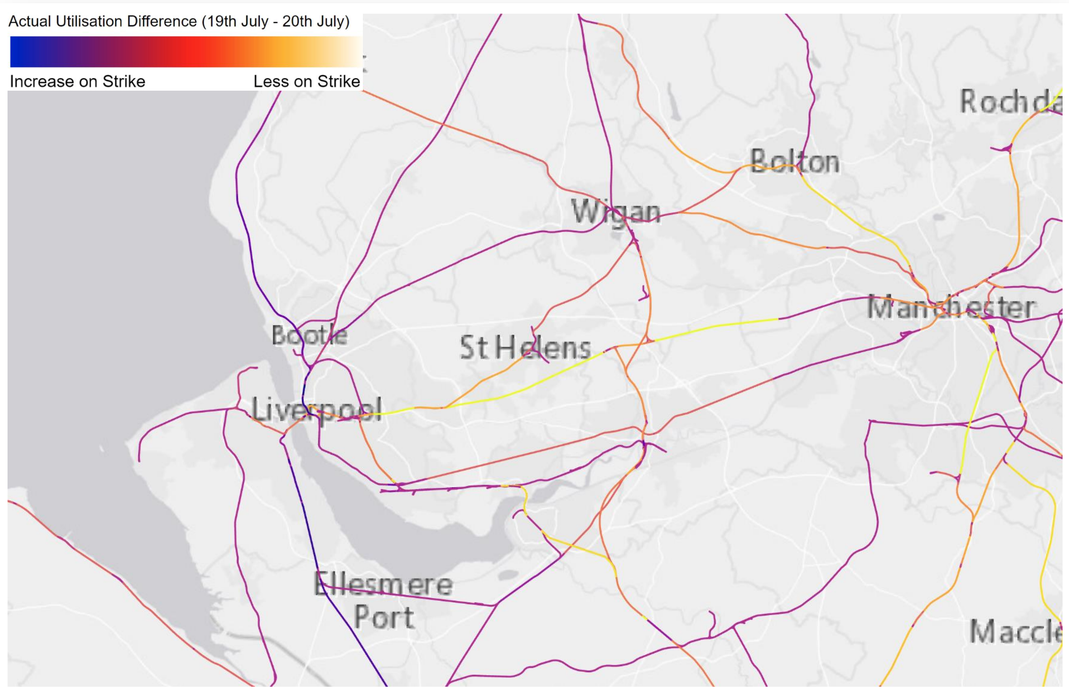
Background: Understanding railway infrastructure utilisation can identify areas for improvement in planning and realtime railway operations. Currently there is no metric tracking utilisation in the UK Railway.

Planned vs Actual Utilisation: The difference between planned & actual utilisation

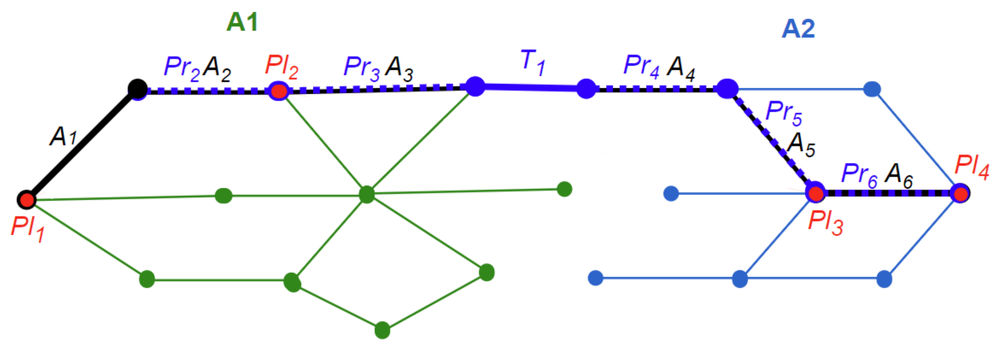


Strike Day Impact: Difference between Normal & Strike day service in North West England

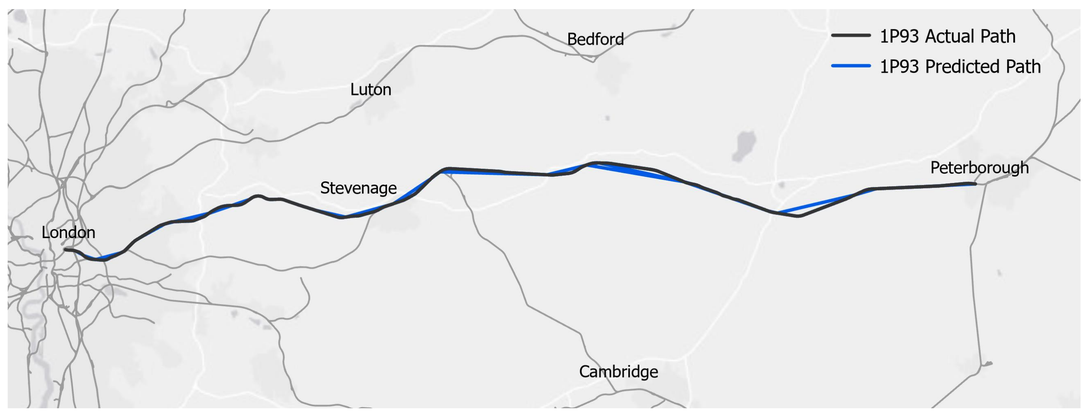


Methodology

1 Determine route through the infrastructure network of **planned (Pr_n)** and **actual(A_n)** edges



2 Determine geospatial path of each train and calculate infrastructure utilisation



Limitations: Data quality and availability effect the quality of the calculated geospatial path and utilisation outputs. Lack of infrastructure metadata effects the utilisation and capacity calculation method used.

Next Steps: Improve quality of input data & methods of validating outputs. Use additional infrastructure data to apply & compare other methods for determining utilisation. Investigate alternative uses of prediction models and utilisation outputs in realtime to detect issues and improve utilisation & performance

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