

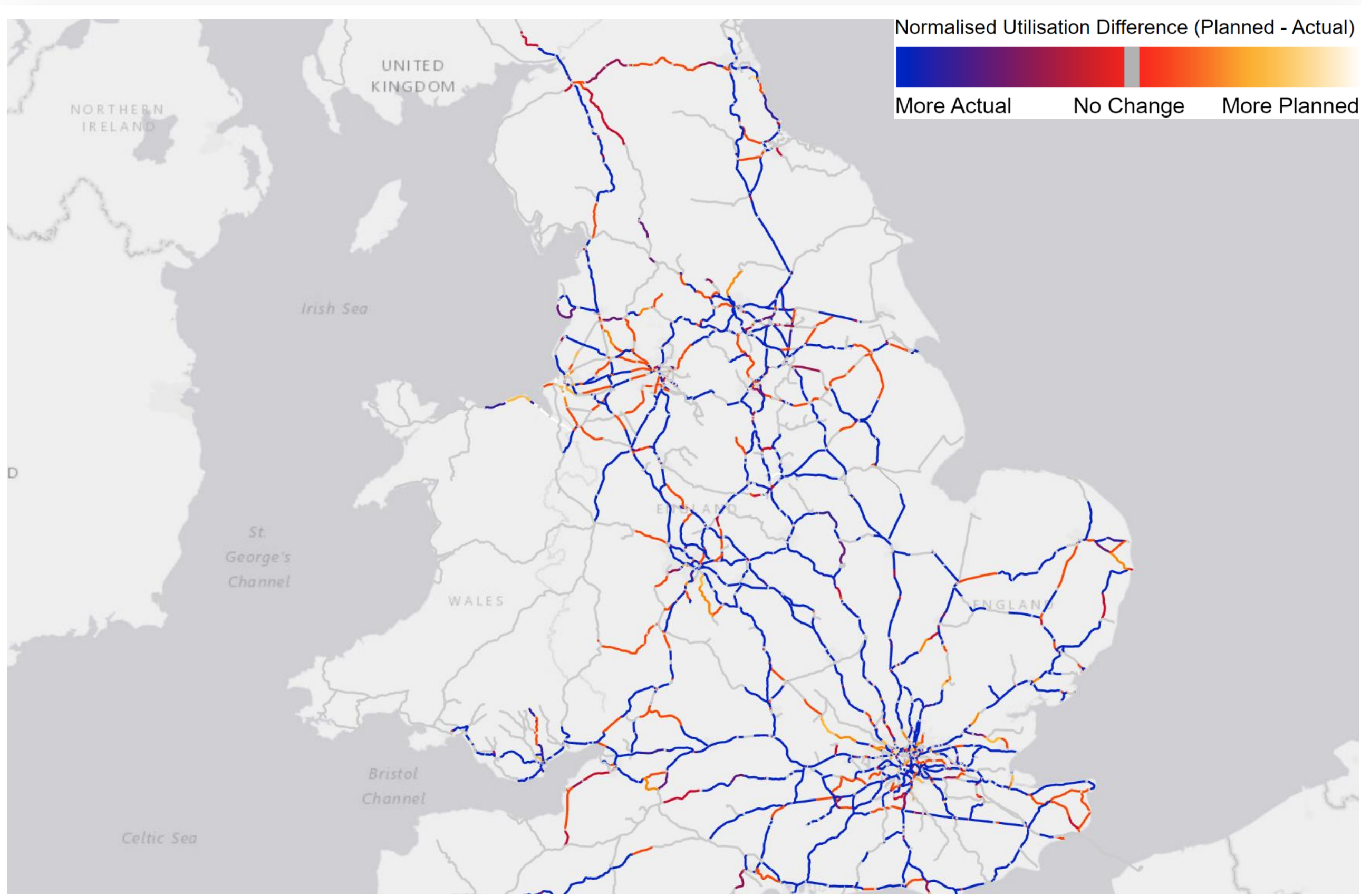
We can use Geospatial Technology to Calculate Railway Infrastructure Utilisation

Analyzing railway infrastructure utilisation: A geospatial approach

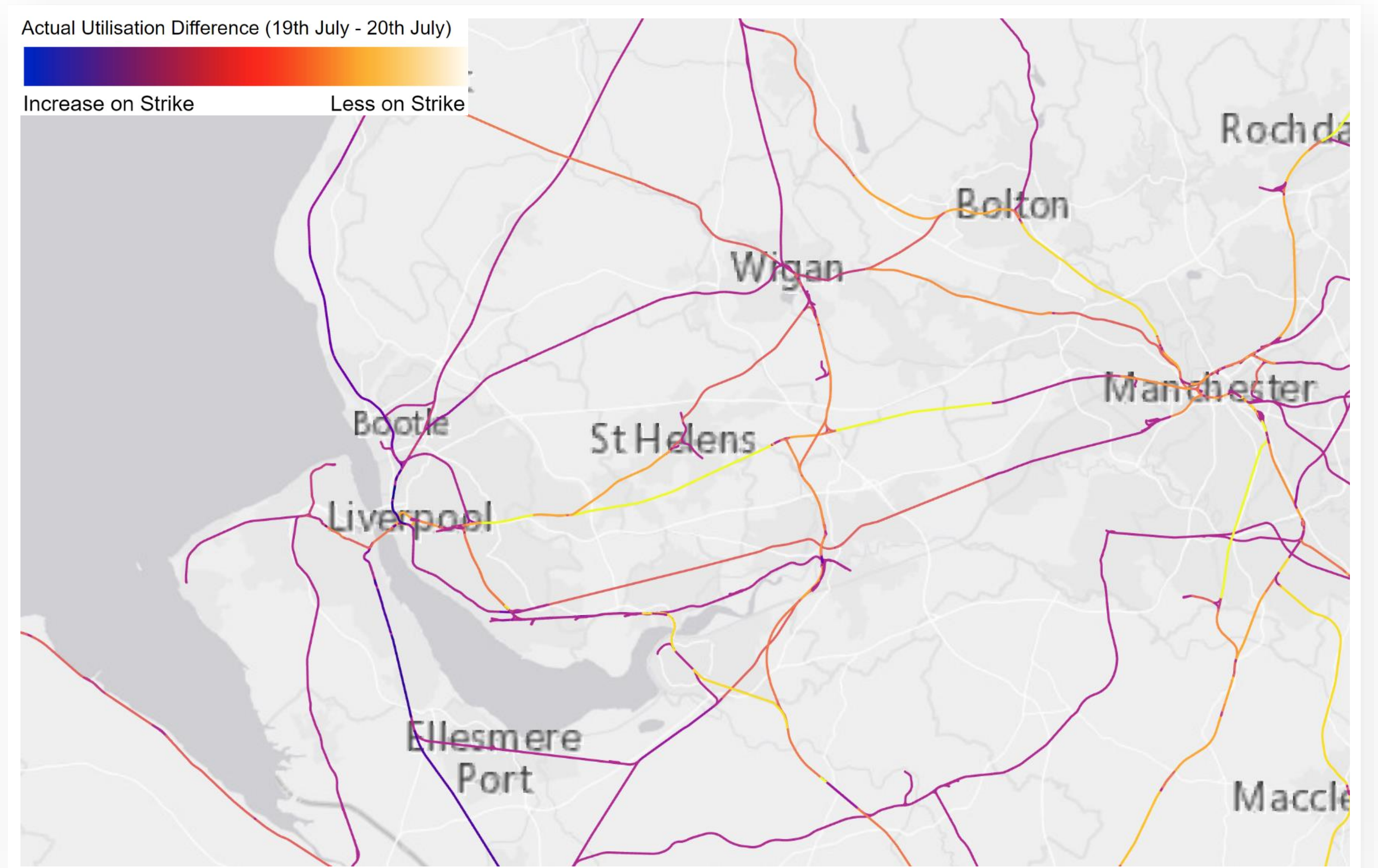
Stuart Gordon

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

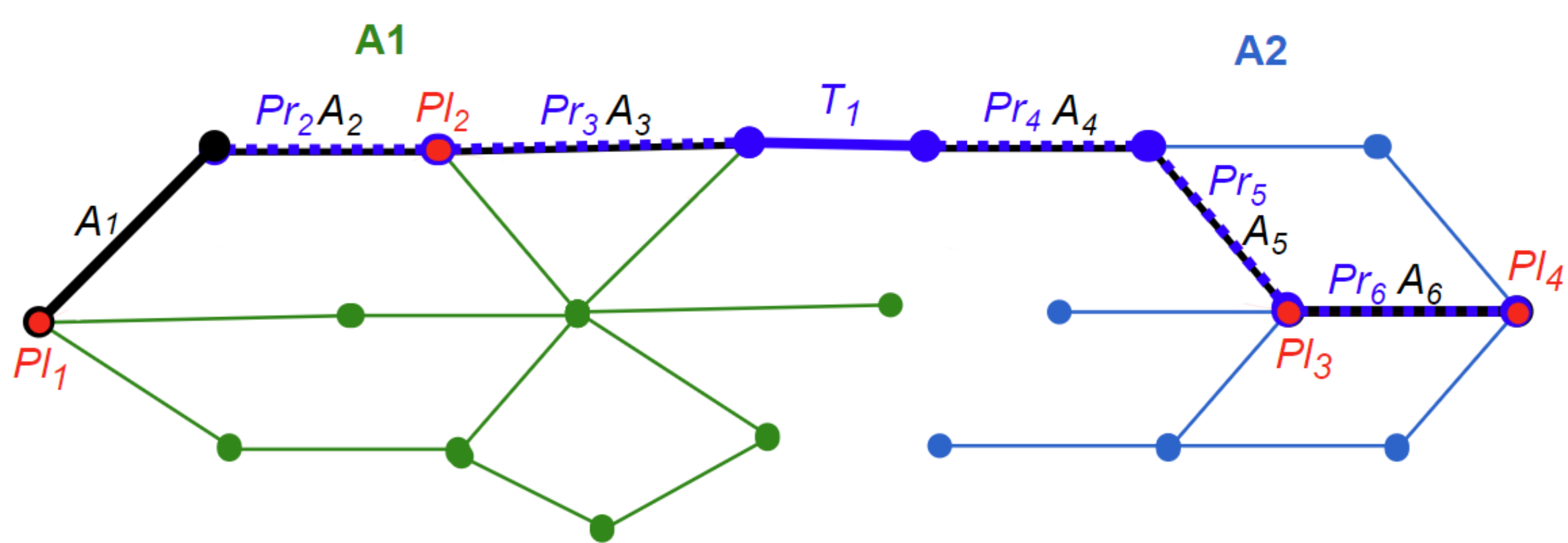


Strike Day Impact: Difference between Normal & Strike day service in North West England

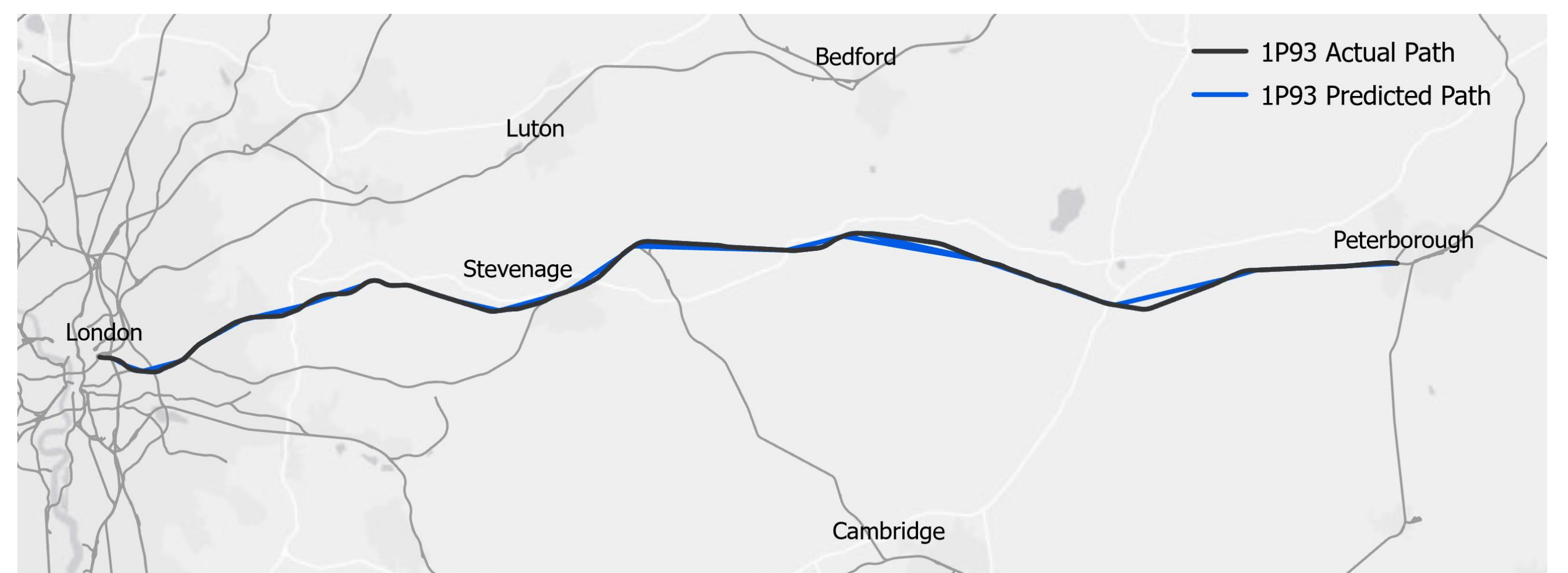


Methodology

- 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. Using 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