

# Lancashire Service Uplifts

Technical Document – Operational Feasibility and Demand Assessment

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# 1 Executive summary

## Introduction and background

This study examines how rail connectivity could be improved across East Lancashire through service uplifts, with a focus on three existing routes which have experienced growth in demand over the last decade. Its overall objective is to inform medium term planning for the railway and to inform future service improvements, as well as to support the development of sustainable transport planning across East Lancashire. It will also inform potential further business case work as needed.

The routes and services considered are:

- **York – Blackpool North:** Aspiration for an increase in frequency between Preston and West Yorkshire, on the Blackpool North to York service.
- **Kirkby – Blackburn:** Aspiration for 2 trains per hour (tph) on the Blackburn to Manchester Victoria via Todmorden curve service.
- **Clitheroe – Rochdale:** Aspiration for 2tph between Clitheroe and Manchester, with the potential to extend the route and link to Hellifield and North Yorkshire.

The study examines:

- **The case for improved connectivity:** existing socio-economic context and rail demand. It also includes an assessment of future demand, including background housing/employment/education growth.
- **Options to meet the aspirations:** Broad feasibility assessments of the identified aspirations. It also sets out why alternative service options to uplift services on these routes were not considered.
- **Operational solutions:** setting out how uplifts in services could work and how they would be delivered. This includes considerations such as resource requirements, staff, units and stabling.
- **Financial and economic assessment of the options:** to allow for a comparison of the options based on the net financial position and the wider socio-economic case for change. Thus, providing a view on the potential value for money for each option.

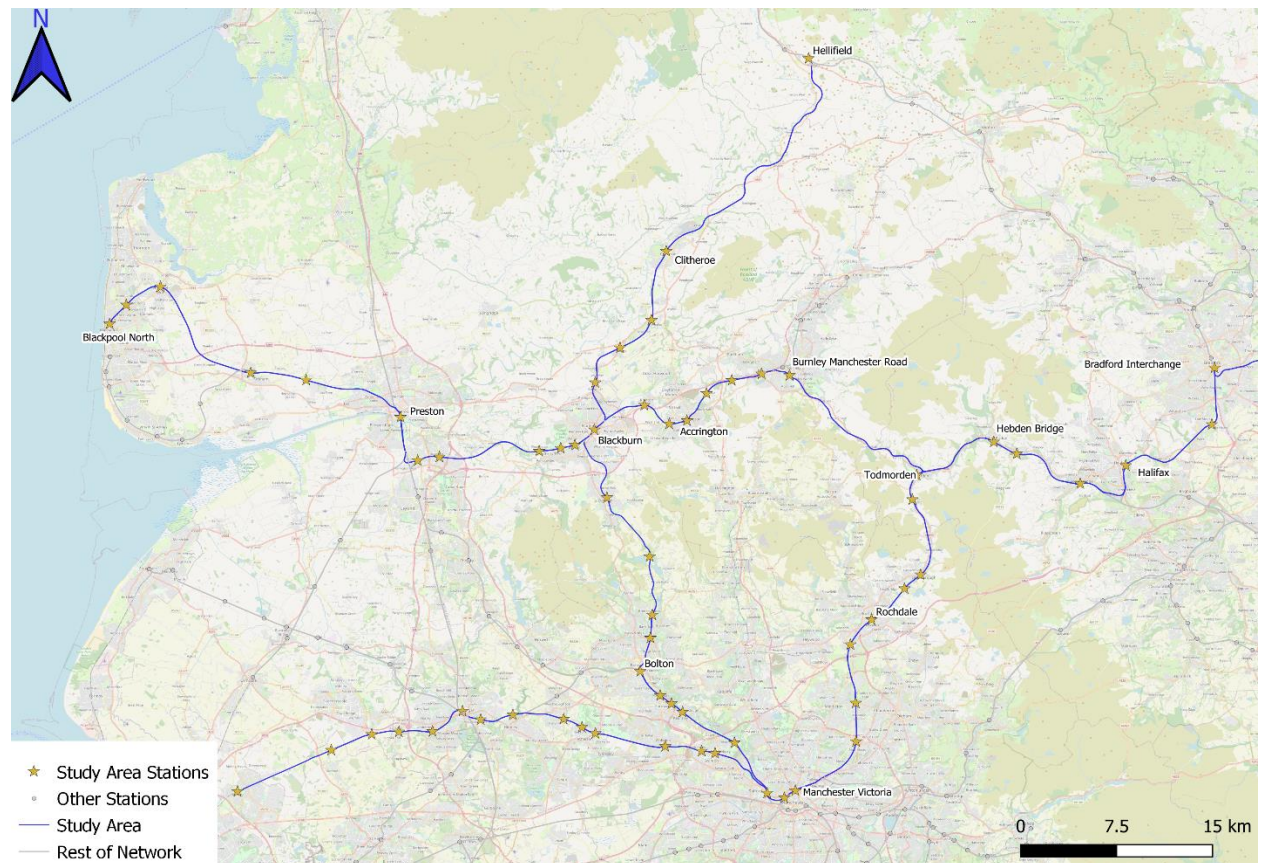
The study was commissioned and funded by:

- Blackburn with Darwen Borough Council
- Burnley Borough Council
- Community Rail Lancashire
- Lancashire County Council
- Ribble Valley Borough Council

This work has been undertaken by Northern Trains Limited (NTL) and seeks to increase the level of collaboration between the railway sector and its stakeholders. NTL's involvement

should not be seen as sponsorship of the scheme, but rather in support of greater collaboration and to inform future decision making.

Figure 1: Overall Study Area



## Key Findings

### **Socio-Economic context and existing rail demand**

*East Lancashire is growing, and rail demand is increasing*

- The study area overall (Lancashire County, Blackburn with Darwen and Blackpool) has c.1.5m people. East Lancashire (for the purposes of this study, defined as including Burnley, Hyndburn, Ribble Valley, Pendle & Rossendale) has over 400,000 residents, which increases to over 550,000 with the inclusion of Blackburn with Darwen. East Lancashire has seen a population increase of 30,000 people (4.5%) in the past decade.
- There are over 650,000 employee jobs in the study area overall, including more than 220,000 in East Lancashire and Blackburn with Darwen. This includes 6,000 jobs added in the past 5 years.

- Lancashire, together with Blackburn with Darwen and Blackpool districts, is served by 62 train stations, which provide connectivity to a large spectrum of settlements. 60 of these are served by regional rail services provided by NTL. At several stations, Intercity services across the North are provided by Transpennine Express, while direct connectivity to Scotland and London is provided by Avanti West Coast.
- The connectivity provided by the rail services in the county is vital for both connecting rural locations to regional hubs and connecting Lancashire with the rest of the UK economy. This is shown by over 16 million entries and exits recorded at Lancashire stations last year (2021/22). This represents 79% of the demand recorded in the year leading up to the first COVID lockdown and shows strong recovery compared to the national average.

### The case for change

*There are a number of challenges that improved rail connectivity could help to address*

- The evidence suggests there are a number of challenges in Lancashire that improved public transport connectivity – including through enhanced rail services – could help to address. In common with much of the north of England, the economic performance of Lancashire lags behind the UK overall and this gap has widened in the past 2 decades. East Lancashire is the poorest performing sub region in Lancashire in terms of GVA per capita.
- Across the county, the most recent census confirmed that over 20% of households do not own a car or van and so are dependent on other forms of transport – including public transport. This increases to 29% in Burnley, 27% in Blackburn with Darwen and 25% in Hyndburn. This suggests an ongoing latent demand – and opportunity – for enhanced rail provision.
- The two most recent censuses show that the proportion of Lancashire residents using rail to get to work is significantly below national levels. It suggests that there is potential to increase this proportion in future, particularly with large parts of East Lancashire being within 60-minute rail journey times to major employment areas.
- The lagging local economy set out above is reflected in the extent of neighbourhood deprivation<sup>1</sup> in certain parts of Lancashire, notably in Burnley, Blackburn with Darwen, Hyndburn and Pendle – as well as in Blackpool. As with the GVA per capita indicator set out above, the causes of this are multiple, but access to affordable public transport has been demonstrated to be a cause – and potential solution<sup>2</sup>.

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<sup>1</sup> As measured by the Index of Multiple Deprivation [English indices of deprivation 2019 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/collections/english-indices-of-deprivation-2019)

<sup>2</sup> See for example [Transport and inequality \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/90444/transport-and-inequality.pdf) and [appg-leftbehindneighbourhoods.org.uk](https://www.appg-leftbehindneighbourhoods.org.uk)

- Positively, both population and employment are forecast to increase in East Lancashire, while there is a significant pipeline of planned housing and commercial developments. There are also significant places and visitor attractions that drive demand for leisure travel.

### **The case for improved rail**

- Rail both generates and supports significant social, economic and environmental benefits. These include:
  - Creating an enhanced rail service will **improve transport opportunities** to the residents and businesses of Lancashire. Enhanced public transport connectivity within and beyond the region provides wider opportunities for local residents, **particularly for those without access to a car**.
  - Residents will have **access to increasing numbers of jobs** in the region, while businesses will be able to draw on a **wider regional labour pool**. It will provide a **further incentive for potential employers to relocate to the area**.
  - Service uplifts contribute to providing **more sustainable travel** in the region, including more active travel. Making rail travel more attractive will also help take vehicles off the regions' roads, **cutting carbon emissions, improving air quality, and reducing the impact on the wider environment**. For every mile a person travels, passenger trains produce a third of the emissions of the average petrol car.
- A recent study undertaken to measure the value of Northern Trains<sup>3</sup> demonstrated the value that the operator and its services brings to the north of England – including to Lancashire. The study showed that the ratio of benefits to passengers alone to the levels of subsidy is 2.5 times higher, while there are significant other benefits.

### **Assessment of the three routes**

#### **Methodology**

- There are various operational and technical considerations which dictate the suitability of rail as an option to improve connectivity along the corridors in question. Timetable planning software has been utilised to test a variety of options to achieve

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<sup>3</sup> <https://www.northernrailway.co.uk/value-research>

the service uplifts set out. This is then supported by further work to check the options against platform lengths, staffing considerations and freight usage.

- MOIRA software assesses the generalised journey time (GJT) changes from timetable changes and estimates a resulting change in journeys and revenues. It also helps to provide user benefits in the form of passenger journey time savings, which are monetised using DfT Transport Appraisal Guidance (TAG) values of time. Further societal benefits, in the form of Marginal External Costs derived from modal shift to rail from private vehicle, capture the impacts to decongestion, safety and the environment of taking car kilometers off the road network.
- Costs are estimated using actual existing costs and cost models which are used regularly to assess the costs of projects within the industry. The costs captured include:
  - Mileage driven costs such as fuel, track access and maintenance.
  - Staff costs such as drivers, conductors and managers.
  - Unit lease costs.

The key findings from this work are set out below:

#### **York – Blackpool North: Aspiration for an increase in frequency between Preston & West Yorkshire, on the Blackpool North to York service (Roses Line):**

- The Roses Line is one of the major rail routes within Lancashire, providing connectivity between four regional centers in Lancashire (Blackpool, Preston, Blackburn and Burnley) and further connectivity across the North to the Yorkshire towns and cities of Halifax, Bradford, Leeds and York. The services which run across the Roses Line call at stations in 11 different local authorities across the North, providing vital East-West connectivity for these communities.
- The assessment shows that:
  - There is sufficient capacity to operate a second path per hour between Blackpool North and West Yorkshire.
  - There are broadly 3 feasible options for destinations:
    - Blackpool North to Halifax
    - Blackpool North to Hull
    - Blackpool North to Huddersfield
  - The best performing option is the extension of Hull – Halifax services operating to Blackpool North.
  - But a large number of additional drivers and conductors are needed to operate the service.

- No immediate infrastructure requirements have been identified to enable the running of a 2nd train per hour between Blackpool and West Yorkshire.
- New demand is forecast at 348,000 passengers per annum, with an industry revenue uplift of £2.2m per annum.
- User and non-user benefits equate to £6.8m per annum, including vehicle miles taken off the road (4.5m car kilometres) and value of time benefits.
- The option has a projected annual operating cost of £12.4m per annum (using existing rolling stock).
- The solution provides better east – west linkages between Lancashire and West Yorkshire to meet development, employment and social objectives.

**Kirkby – Blackburn: Aspiration for 2tph on the Blackburn to Manchester Victoria via the Todmorden curve service:**

- NTL’s direct services between Blackburn to Manchester via the Todmorden Corridor entered into operation in May 2015 following the reopening of the Todmorden curve. This allowed direct services between Burnley and Manchester, something not possible by rail since the curve was closed in 1972. The current service runs beyond Manchester Victoria to Kirkby, however, for the purposes of this study, we are interested in the service between Blackburn and Manchester.
- The corridor is served to the North-West of Todmorden by the Roses line and hourly services between Preston & Colne. The stations in the corridor between Todmorden and Manchester are also served by Northern’s services between Leeds & Wigan, while Rochdale is also a call on Northern services between Leeds & Chester and Leeds & Manchester Victoria. Stations between Manchester & Rochdale are served by services between Blackburn & Rochdale and Blackburn & Clitheroe.
- The assessment shows that:
  - There is a solution to provide two trains per hour between East Lancashire and Manchester via the Todmorden Curve.
  - This is by extending the current Rochdale – Clitheroe path and extending this from Rochdale via the Todmorden Curve, to form a "figure of 6" service.
  - No immediate infrastructure requirements have been identified to enable the running of the 'Figure of 6' option to provide 2 trains per hour between Blackburn and Manchester via Todmorden. However, there are clear interdependencies with the Manchester Task Force Infrastructure project which will need to be understood more fully.
  - An additional 3-unit diagrams are required (2 x 2 car units), plus an uplift in additional staffing.
  - New demand is forecast at 106,000 passengers per annum, with an industry revenue uplift of £0.5m per annum.

- 1.9 million new passenger miles are estimated as a result of the service uplift, and 935,000 car kilometres are removed from the local road network.
- User and non-user benefits equate to £1.3m per annum, with a projected annual operating cost of £5.4m per annum.
- The solution builds on the original Todmorden Curve service introduced in 2015, provides alternative intra-Lancashire rail connectivity, and significantly improves access from East Lancashire into Central Manchester and the Regional Centre.

**Clitheroe – Rochdale: Aspiration for 2tph between Clitheroe and Manchester, with the potential to extend the route and link to Hellifield and North Yorkshire.**

- Currently, NTL run 1 train per hour to Ribble Valley stations north of Blackburn. These stations: Clitheroe, Whalley, Langho and Ramsgreave & Wilpshire, are connected directly to Blackburn but also to Bolton and Manchester as the route runs from Clitheroe to Rochdale. South of Blackburn the Clitheroe to Rochdale service provides a second train per hour for the Lancashire station of Darwen as well as the Greater Manchester stations of Bromley Cross and Hall I' th' Wood and is also the only service for Entwistle, as a request stop.
- The service then joins the busier section of railway running from Bolton into Manchester Victoria and through to Rochdale. The case for the second train per hour between Blackburn and Manchester was proven with the business case for c£14m of infrastructure enhancements which were delivered through the Local Growth Fund program, with the enhanced services introduced into operation in December 2017.
- The assessment shows that:
  - There is sufficient capacity to extend the Rochdale – Blackburn service to run to / from Clitheroe. This would call at all stations between Blackburn and Clitheroe to give a half hourly service.
  - There is sufficient capacity to extend Clitheroe services further to terminate at, and start back from, Hellifield.
  - An additional diagram is required, which equates to 2 x 2 car additional units, plus additional staffing for the additional half hourly service to Clitheroe, and an additional diagram equating to a 2-car additional unit, plus additional staffing for the further extension of services to Hellifield.
  - No immediate infrastructure requirements have been identified to enable the running of a 2nd train per hour between Blackburn and Clitheroe. However, the upgrade to signalling required to facilitate the extension to Hellifield will require careful planning and collaboration with Network Rail.
  - Extending services to Clitheroe and Hellifield sees a demand forecast of up to 133,000 passengers per annum, with an industry revenue uplift of £0.7m per annum



- 1.9m car kilometres are taken off the road as a result of the extensions to rail services.
- User and non-user benefits equate to £2.1m per annum, with a projected annual operating cost of £5.5m per annum (using existing rolling stock).
- The solution builds on the Clitheroe to Hellifield Restoring Your Railway work and provides future development opportunities for DalesRail services.
- The direct linking of Greater Manchester and Lancashire with the Yorkshire Dales will support future growth of both off-peak leisure markets and employment options to / from Central Manchester and North Yorkshire from a wider catchment area.

### **Next steps**

There are a number of next steps for all stakeholders. These include:

- NTL and Lancashire stakeholders to continue stakeholder engagement where needed and promotion of these aspirations.

Also, to ensure these findings feed into:

- RNP short- and medium-term business planning / timetabling processes in future years
- Financial constraints from central government easing, and decarbonisation requirements translating into expanded budgets
- Prioritisation of infrastructure and services with TFN's future Strategic Transport Plan updates and accompanying Strategic Rail Report
- Potential for the North West Regional Business Unit to prioritise service enhancements for the region.