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Routeing of rail freight forecasts
A study for Network Rail by MDS Transmodal

August 2020

Ref: 219029r5

CONTENTS

1. PREFACE

This report, from MDS Transmodal for Network Rail, was issued in August 2020 at the same time as the following reports (also from MDST for NR):

- "Rail freight forecasts: scenarios for 2023/24" (issued In May 2018, revised August 2020)
- "Rail freight forecasts: scenarios for 2033/34 and 2043/44" (issued in July 2019, revised August 2020).

As part of the revisions in August 2020, all the maps were removed from these reports, but the main forecasts, in terms of annual tonnes, annual tonne kms, daily trains and hourly paths, were unchanged.

This report seeks to identify the routeing of the forecasts in the above reports.

The forecasts and the routeings do not take account of COVID-19 or the Government's policy of net zero carbon emissions by 2050 (introduced in 2019).

2. INTRODUCTION

This report seeks to identify the routeing of the rail freight forecasts for 2023/24, 2033/34 and 2043/44, which are presented in two reports from MDST for NR (see above). Growth in rail freight is expected to be predominantly in long distance and intermodal traffic, driven by intermodal port traffic, distribution park development and the increased role of rail connected super quarries in supplying crushed rock.

The particular objective of this exercise is to develop and apply active routeing decisions to the forecasts, including identifying diversionary routes and further opportunities to enhance the network where relevant. These decisions were based on a stakeholder meeting and subsequent consultation.

The report summarises the current position with respect to terminals, electrified routes, loading gauge, current passenger train demand and rail freight demand based on current routeing.

This report focusses on forecast growth under the central case scenario (E) for 2043/44, expressed as daily trains (sum of both directions). Growth in daily trains under this scenario was 74% in total across GB, reflecting 72% growth in tonnes and 90% growth in tonne kms.

The results for scenario E in 2043/44, post active re-routeing, are shown in the first map in Section 7. Results for all the main scenarios in 2023/24, 2034/34 and 2043/44, post active re-routeing, and for the base year, are shown in the maps in the appendix.

Freight flows are divided into 12 corridors where choices are potentially available and diversionary routes relevant. The corridor analysis is presented in Sections 8 to 20.

The associated text summarises arguments for route choice and summarises the conclusions of a stakeholder workshop.

The objective is to determine the forecast demand number of freight trains by rail section against which interventions can be appraised.

3. ROUTEING OF UNCONSTRAINED FORECAST OF RAIL FREIGHT: PRINCIPLES ADOPTED

Where realistic route choices are available, existing and forecast rail freight is expected to use those routes that are likely to be less congested providing rail freight operating costs/challenges are not raised significantly (e.g. journey time are not raised excessively).

Where realistic, routing for intermodal traffic involves using the most generous loading gauge available and for bulk traffic RA10 cleared routes (i.e. maximum axle weights).

- options where upgrade of other routes could be beneficial is noted

Routeing seeks to capitalise on electrified routes and 'in-fill' electrification is recommended where appropriate.

Routeing is not based on capacity constraints and may require further infrastructure intervention to address capacity limitations. These interventions are not systematically identified in this study, although some potential interventions are identified in the corridor analysis. It should also be noted that the forecast volumes used in this report do not reflect capacity constraints.

No assumptions were made on the hours each route would be open or available to freight.

Routeing does not depend on any new routes or chords and assumes extra capacity will be available on existing routes where required. However, the corridor analysis (see below) shows potential new routes on the maps and comments are provided on these routes and chords.

Projected growth in passenger services in urban areas has to be recognised so, where relevant, additional links and chords are proposed to ease conflicts with freight, particularly where freight otherwise passes through central areas. Additional passenger services on the GWR east of Reading (Elizabeth Line) are committed and the impact of HS2 and Northern Powerhouse Rail have been taken into consideration. Where new routes may become available their relevance to rail freight is commented upon.

Suitable diversionary routes are identified where available, which may include using routes and chords that are not currently available. Routeing decisions are applied to main (or core) routes not diversionary routes. Therefore, diversionary routes do not include any re-routed volumes. However, suitable diversionary routes are identified in the corridor maps and the corridor analysis includes comments on them.

Rail freight growth is heavily dependent on terminals at distribution parks, which need to be efficiently served.

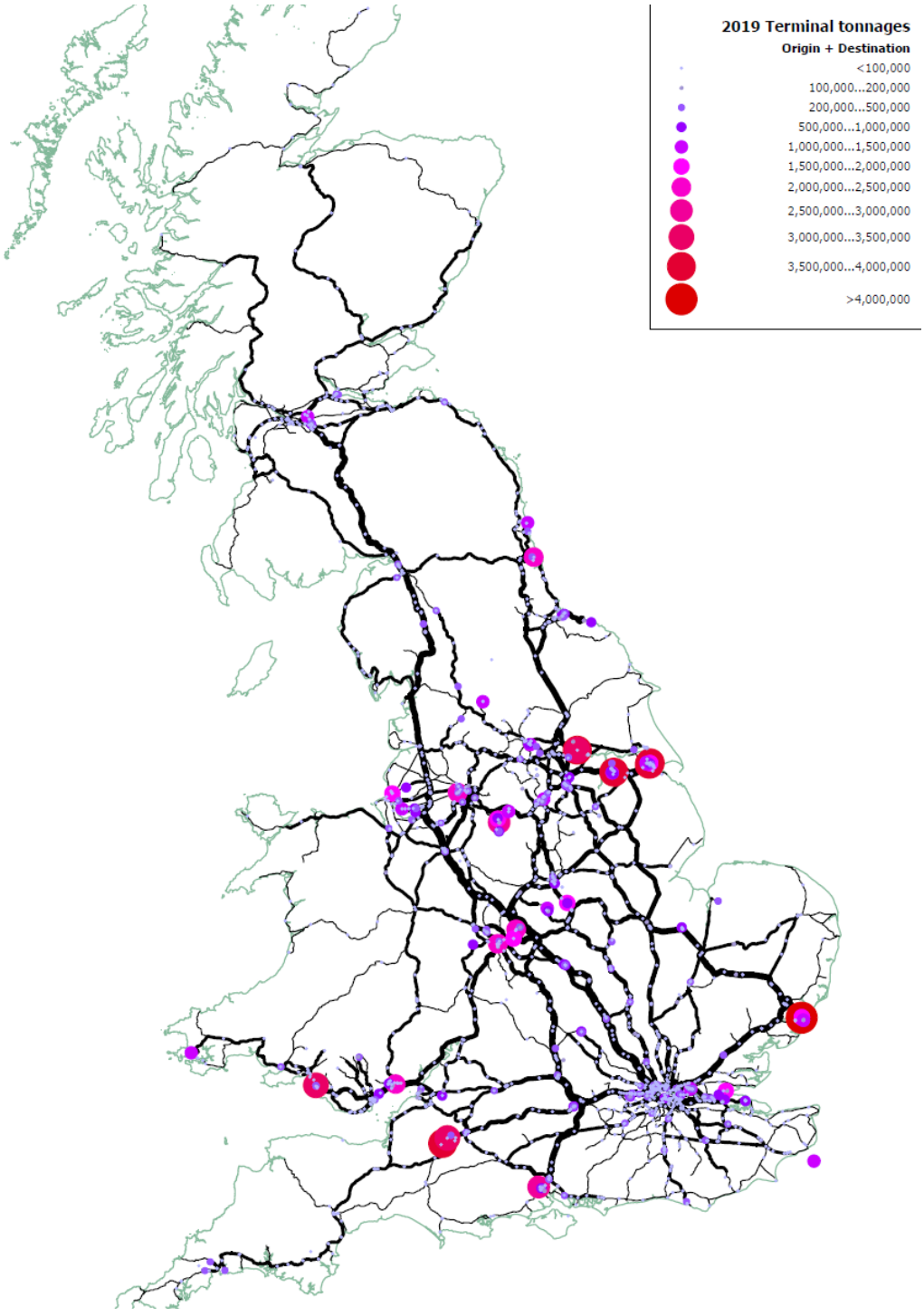
The forecast report showed rail freight routing based upon existing practice, which is shown in this report. We show in this report how the above principles have led to changes in routing.
The figures within the report show the number of trains forecast and not the number of paths required to accommodate them.

Active re-routeing was only applied to three of the twelve corridors identified following stakeholders consultation.

3. KEY TERMINALS DRIVING RAIL FREIGHT FORECASTS

This figure describes the key port, inland terminals and quarries that are currently served in the UK rail freight traffic and which drive demand

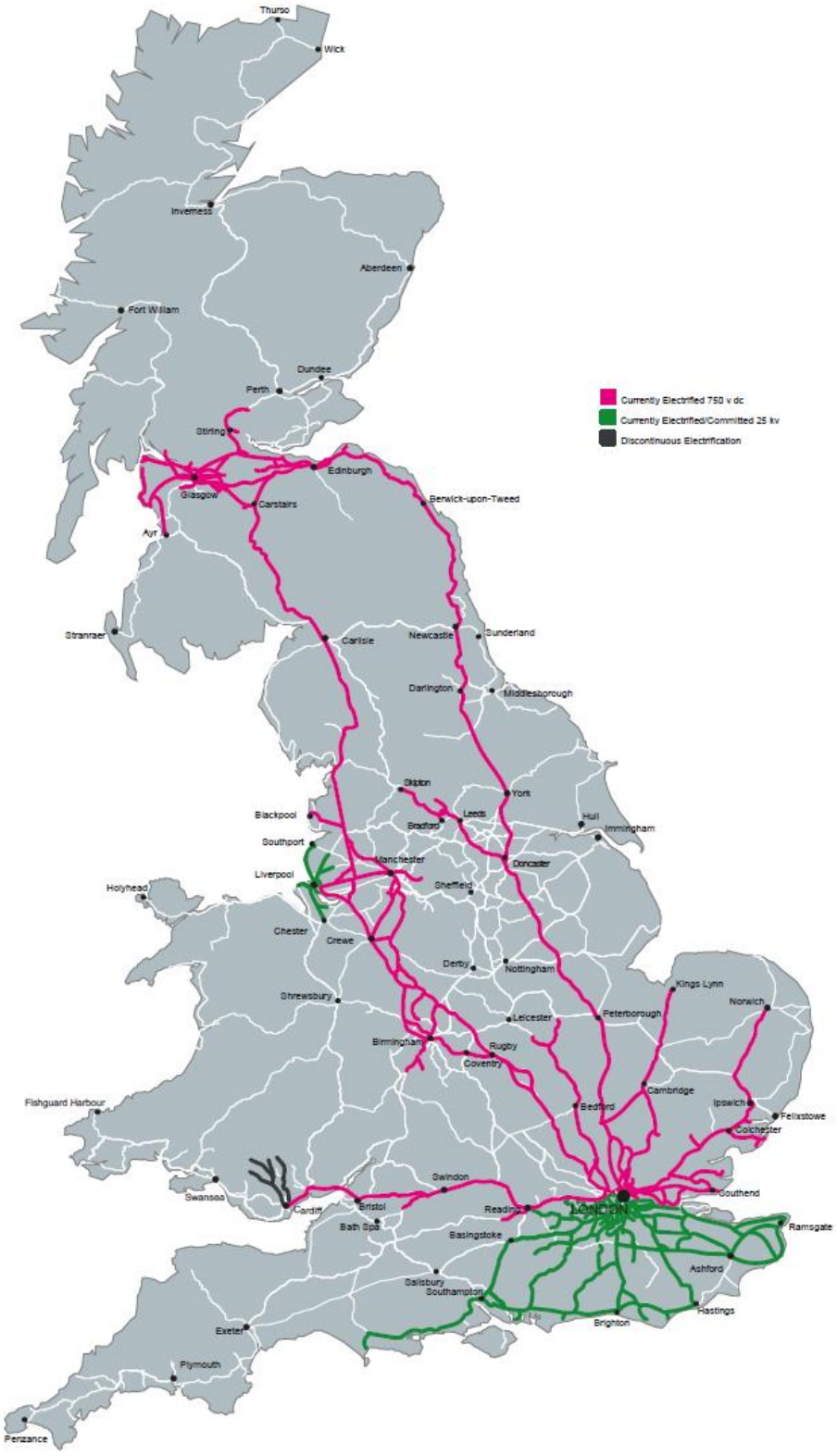
Key terminals driving rail freight forecasts



4. CURRENT ELECTRIFIED ROUTES

This figure describes the routes that are currently electrified or where electrification is committed.

Electrified routes



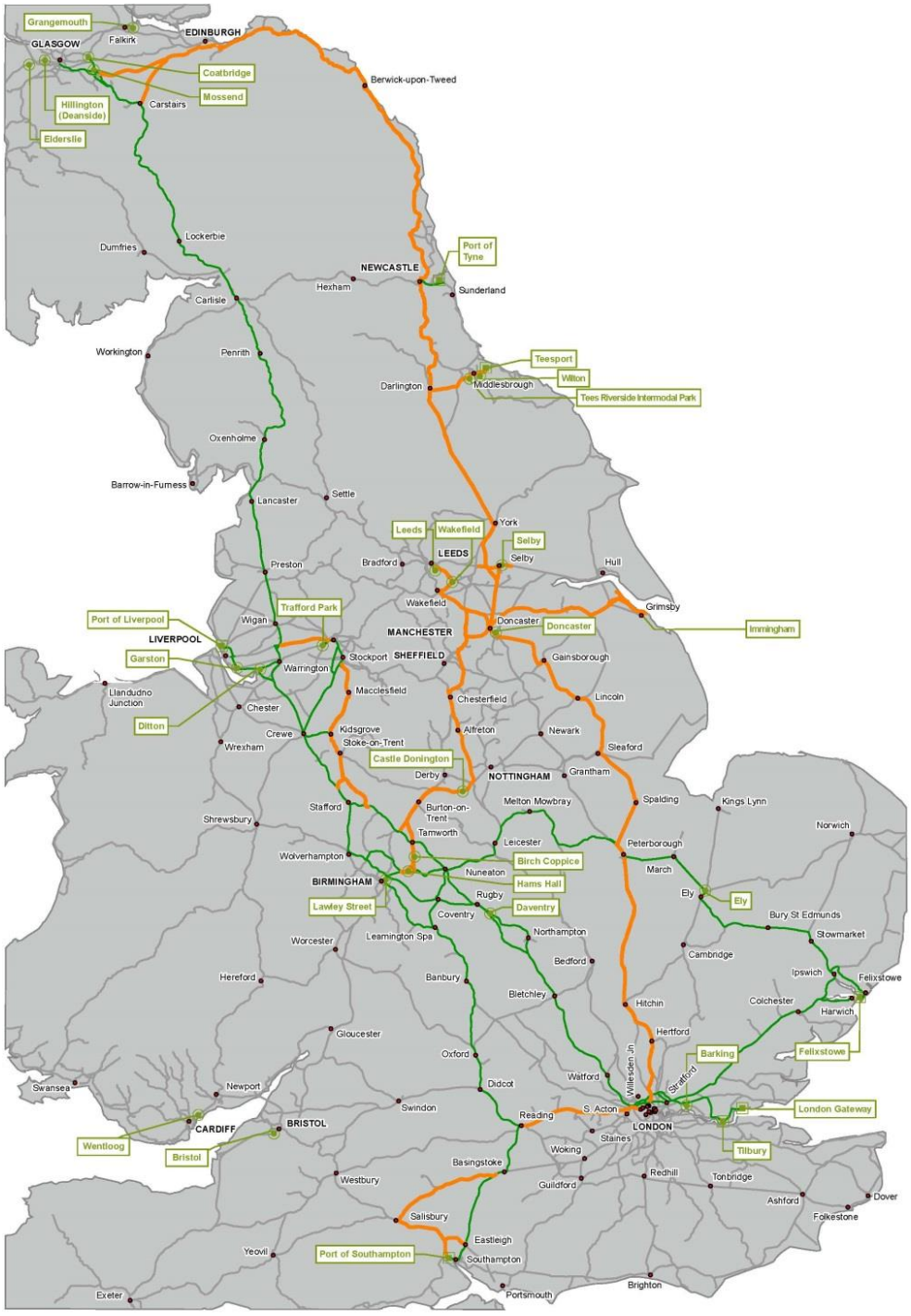
5. CURRENT W10 OR W12 LOADING GAUGES AVAILABLE

Except where well wagons are utilised (which do not use train length efficiently) intermodal services are limited to routes where the loading gauge is enhanced. W8 loading gauge permits the passage of 8'6" containers on metre high wagons or 9'6" containers on 'low-liner' wagons. Metre high wagons can carry 9'6", 2.5m wide containers on W10 routes, which can be up to 2.6m wide if W12 loading gauge is available. The map does not include proposed load gauge upgrades (e.g. west of Didcot)

W10 or W12 loading gauge availability

W10

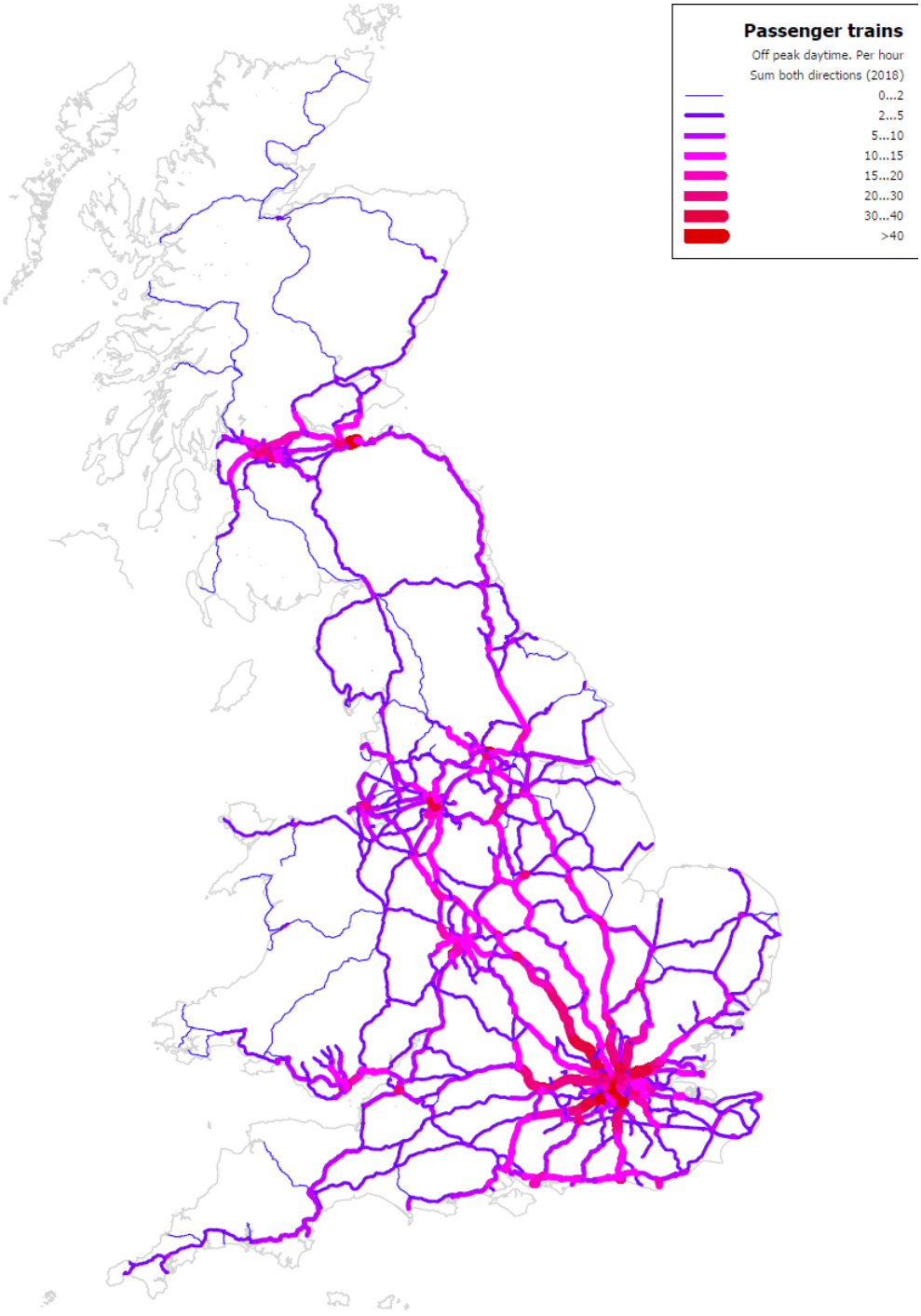
W12



6. CURRENT PASSENGER TRAIN VOLUMES

The figure opposite describes the current volume of passenger train movements along each leg of the network. Densities are highest in urban areas and along the principal routes to and from London.

Current off peak passenger train movements per hour



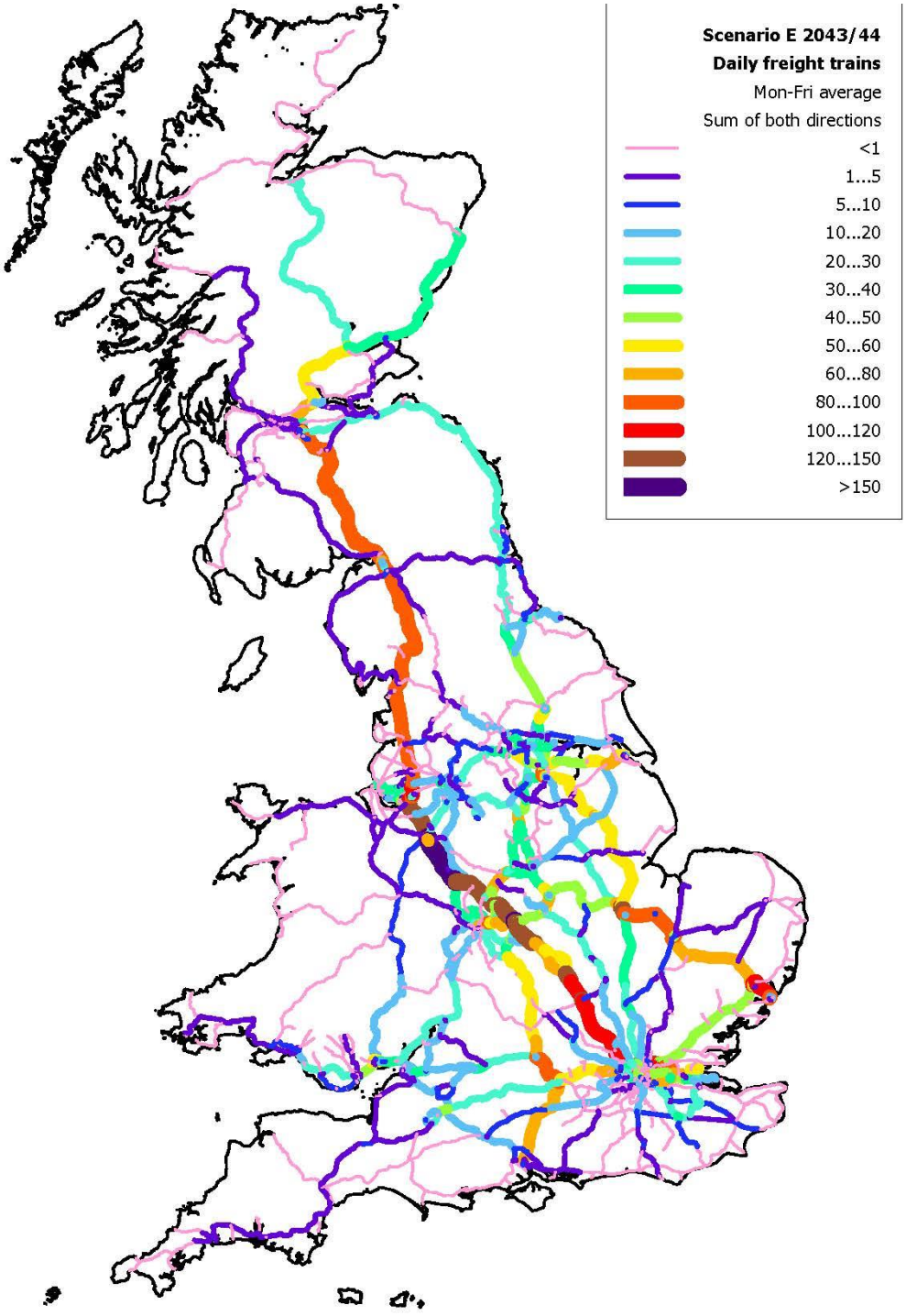
7. FORECAST FREIGHT TRAINS, POST ACTIVE RE-ROUTING & NET IMPACT OF THAT RE-ROUTEING

The following two figures show the total freight train assignment after re-routeing and the net impact of that re-routeing.

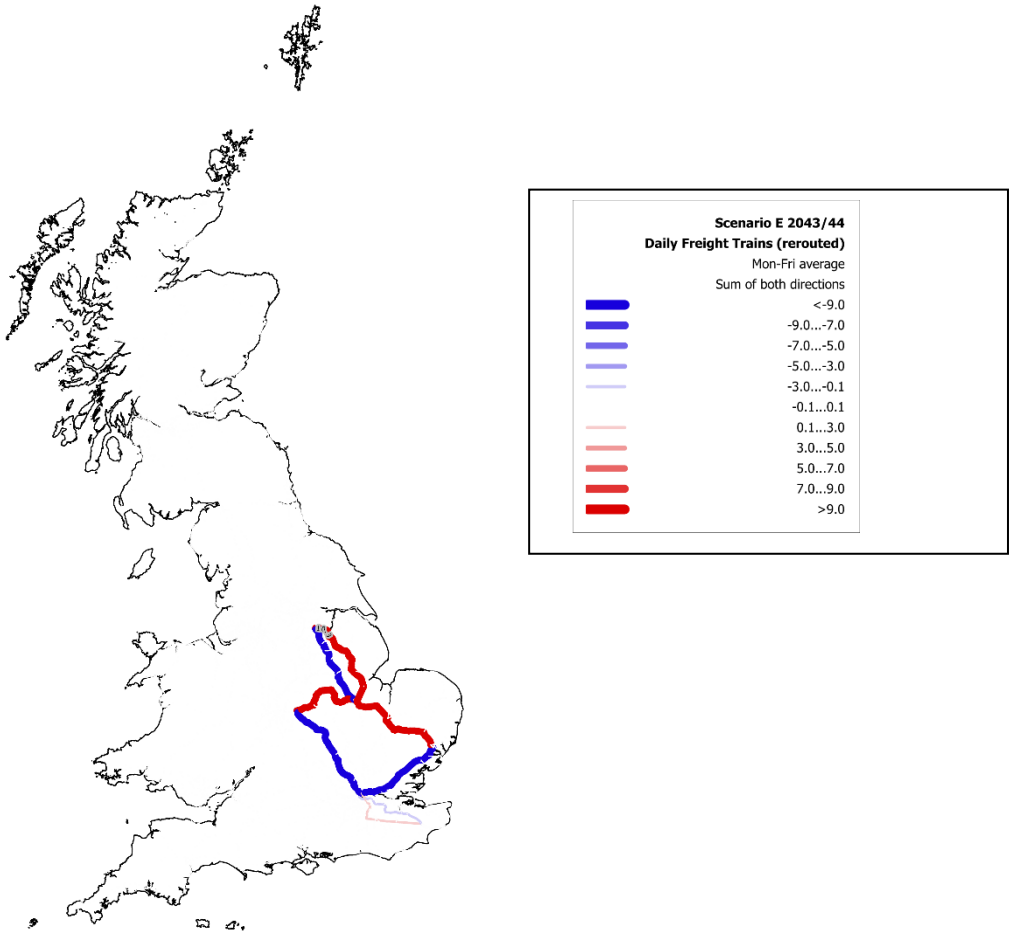
The first describes national rail freight assignment after active re-routeing. Routeings are based upon the principles set out in section 2 and are discussed further in the corridor analysis below.

The second shows the effect that re-routeing had in generating this assignment, which was principally of re-routing more freight trains onto the Ipswich – Peterborough - Nuneaton and Peterborough – Lincoln – Doncaster routes and less via Ipswich – London – Nuneaton and Peterborough – Newark – Doncaster routes respectively.

National rail freight assignment in forecast report post re-routeing: 2043/4 central scenario



Net impact of active re-routeing of forecast freight trains 2043/'44 relative to central scenario



8. INTRODUCTION TO CORRIDOR ANALYSIS

The figures in sections 9 to 20 describe the freight train assignment set out in the 2043/44 national freight forecasts (based on a pro-rata growth in trains based on existing routing) and the modifications made as a consequence of this exercise based on the principles set out above, the details of which are set out in the detailed corridor analyses that follow.

A total of 12 corridors are described:

1. Haven, Thames and Golden Triangle*
2. Midlands and North West
3. Anglo-Scottish
4. East Coast*
5. North East
6. Southampton – Midlands
7. West Midlands
8. Great Western
9. South Transpennine and MML
10. North Transpennine
11. Kent and Wembley*
12. South Yorkshire

*active re-routeing involved

For each corridor there is a map which shows:

- Main (or core) routes; these are colour coded (according to trains per day, two directions summed) and shown with black borders
- Proposed new routes; shown as grey and black hatched lines (e.g. East West Rail between Bedford and Cambridge)
- Diversionary routes; shown as grey lines
- Proposed new chords are shown as red arrows (in the relevant direction)

9. HAVEN, THAMES AND GOLDEN TRIANGLE

Growth of freight from North Thames ports may use up available southern-end WCML capacity so active re-routeing has been applied directing most (70%) Haven traffic to pass through Nuneaton to be diverted across East Anglia via Peterborough.

- thereby minimising freight on the Great Eastern to that for which no reasonable alternative exists while retaining it as an important diversionary route. This approach permits capacity on the routes from the north of London to be focussed on rail freight to or from North Thames terminals.

Growth between Felixstowe and Nuneaton along the Felixstowe to the Midlands and the North (F2M&N) route requires significant infrastructure work at Ely, Soham and Leicester and the route may not be quickly electrified. This will need to be addressed

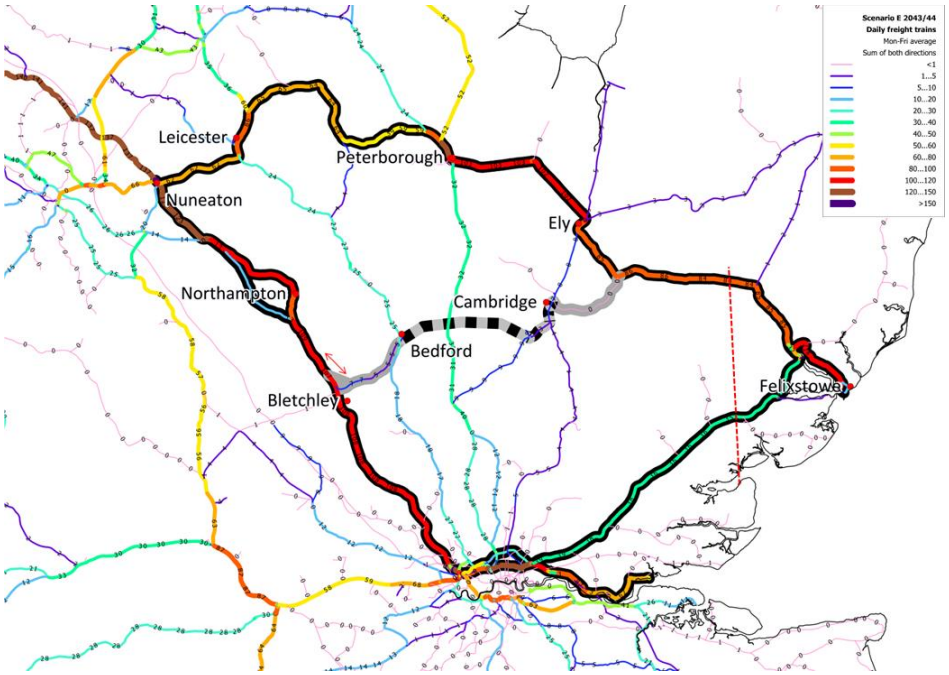
- slower passenger services that may otherwise have helped support the case for electrification may be suitable for battery power using intermittent access to overhead equipment

A valuable alternative route could be available via the proposed East – West Rail route from Cambridge to Bedford

- providing access to the Golden Triangle distribution park destinations from the Haven
- improving its investment case particularly if electrified
- requiring a new chord at Bletchley to access Daventry and Northampton, which appears feasible.
- capitalising on HS2 relieving WCML capacity, although suburban traffic would compete for capacity particularly between Bletchley and Milton Keynes

If electrified then the routing proposal is for most Haven traffic via Nuneaton to move via F2N (70%) with 30% remaining via the Great Eastern, the two routes providing diversionary capability for each other. If it becomes available, East West Rail would relieve both routes, but this has not been taken into account in these assignments. Note that all trains between Ipswich and Bristol/South Wales would remain on the Great Eastern and through London.

Haven, Thames and Golden Triangle



Train growth 66 to 119 (west of Ipswich).

EWR could divert c50/day to WCML n. of Bletchley

Multiple routes provide diversionary options

10. MIDLANDS AND NORTH WEST

The WCML is expected to be used intensively, particularly if Southampton – NW traffic is diverted via Coventry and Nuneaton to avoid congestion in the West Midlands conurbation

There is an option to divert Haven – Trafford Park traffic via F2N and Uttoxeter.

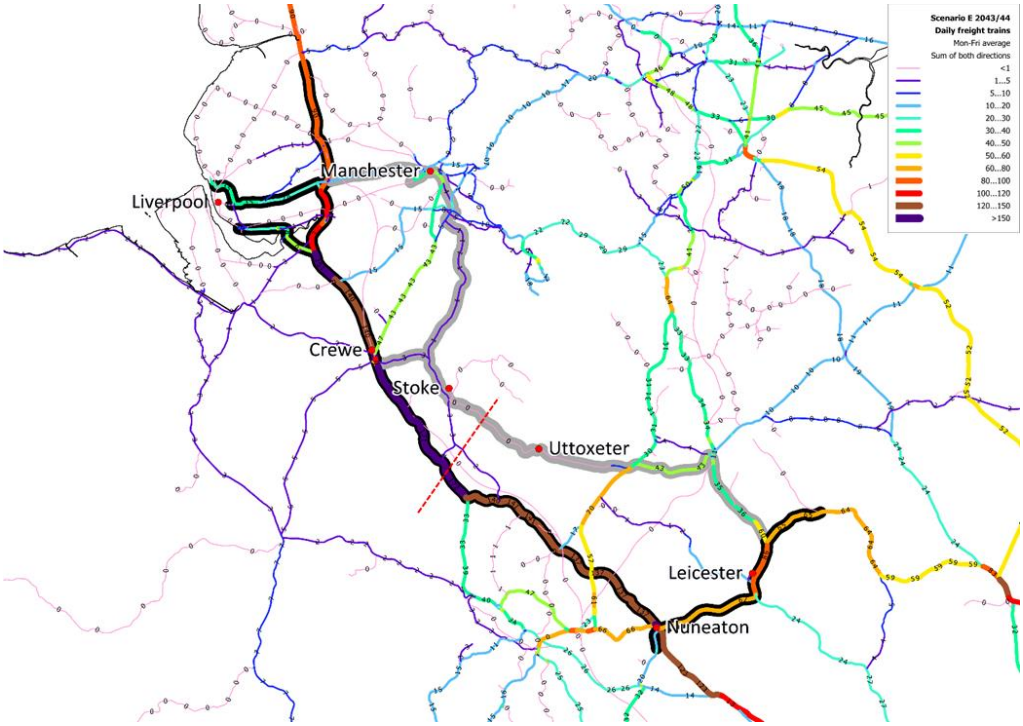
- however this route cannot easily access WCML at Crewe because of at-grade conflicts and the length of single track east of Crewe, so that this route is only available to access Trafford Park in Manchester if accessed via Macclesfield and Piccadilly station, except at nighttime. This can offer a diversionary route to terminals on the WCML including on Merseyside.

The route to the present terminal at Widnes and prospective terminals at Port Salford, Port Warrington and Parkside have all to pass via Crewe & Winsford for which there are no realistic alternatives.

The Crewe – Sandbach – Northwich route is only suitable as a diversionary route because of conflicting movements at Hartford Junction.

The opportunity to divert traffic therefore limited. Routeing is therefore to continue to use WCML

Midlands & North West



Train growth 80 to 167 (north of Stafford/Stoke)
Opportunity to switch traffic via Uttoxeter also relieving Leicester

Diversionary route shown in grey

Diversionary route via Stoke

11. NW ENGLAND - SCOTLAND

There is a high level of freight growth opportunity between the North West and Scotland but the need to accommodate fast Pendolinos (and subsequently HS2 trains) limits freight paths.

There is no realistic alternative route between Warrington and Farington Junction, where upgrade is probably required to accommodate passenger growth.

An alternative and diversionary route is available via Farington Junction, Blackburn and Hellifield to Carlisle.

- but only if the load gauge is enhanced and it will be much slower
- it is suitable as a diversionary route for non-intermodal traffic

The ideal approach to expanding capacity is to 4 track the WCML where possible to create dynamic loops, both south and north of Carlisle and route via WCML.

- this is consistent with plans put forward by the North of HS2 Working Group to develop dynamic loops between Bay Horse and Low Gill (64 kms), between Abington and Rutherglen (51 kms) and along a 12km length by-passing Carlisle.

North of Carlisle the route via Kilmarnock is circuitous and forces freight trains to pass through central Glasgow to reach principal terminals; the coal traffic for which it was upgraded ex Hunterston no longer exists. Nevertheless this is the only diversionary route available between Scotland and the North West.

The ECML also forms a diversionary route for certain flows which normally use the WCML, for example flows between Daventry and Scotland.

North West England - Scotland

Train growth 35 to 95 (north of Lancaster)
Opportunities to divert via Hellifield and Dumfries resp.

Diversionary routes via Hellifield and Kilmarnock

12. EAST COAST

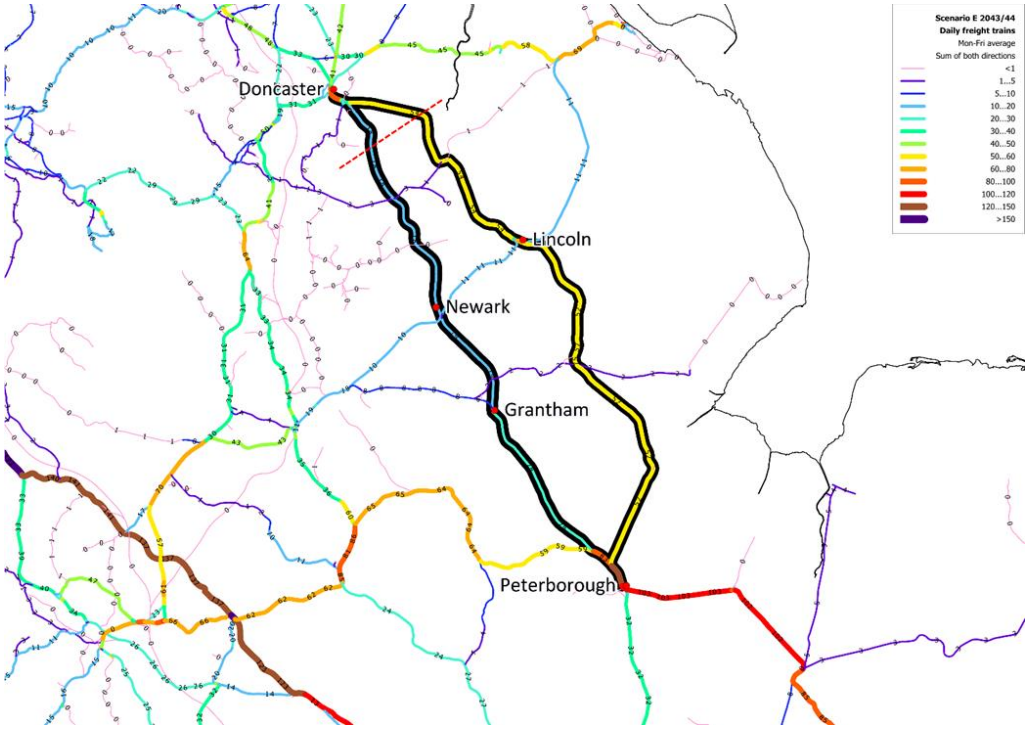
The construction of Werrington dive-under allows freight trains to use Lincoln route to reach Doncaster instead of via Grantham to maximise passenger benefits on the ECML.

The impact on freight transit times of this diversion is modest and capacity expansion eased.

Redirection via Lincoln therefore the optimum route if it is electrified, with ECML route via Grantham retained as a diversionary route.

It has therefore been assumed that 75% of freight trains would be diverted via Lincoln.

East Coast



Train growth 34 to 79 (south of Doncaster)
Option to divert through Lincoln
75% assumed via Lincoln
Multiple routes provide diversionary options

13. NORTH EAST

Network capacity is limited on the 2 track section north of Northallerton because the passenger services in this section have a high speed differential to freight.

Currently freight trains are accommodated by flighting approximately 6 fast passenger trains per hour to accommodate a slower freight path.

- this is not feasible if passenger service frequency rises to 9 as has been proposed.

A solution south of Ferryhill lies in using the diversionary route via Eaglescliff if electrified, gauge-cleared, line speed and signaling improved.

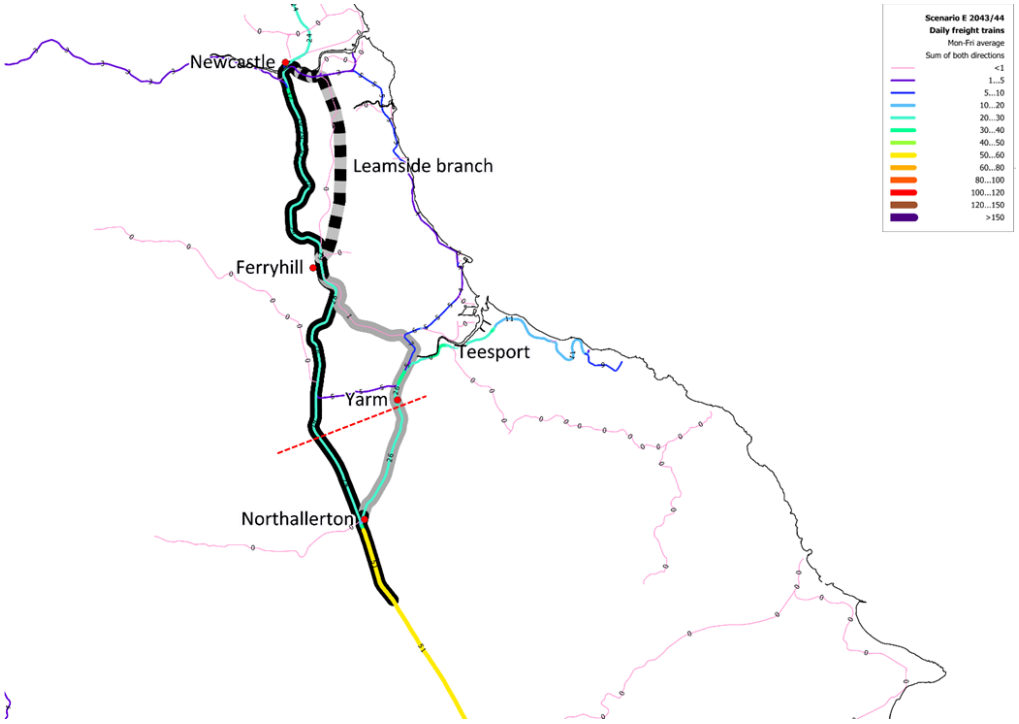
North of Ferryhill capacity could be relieved by re-opening the Leamside branch but this means that freight trains have then to pass through central Tyne area to return to the ECML (unless they are bound for Tyne Dock and Jarrow).

- a penalty and a cost is therefore imposed on the freight sector by any such rise in passenger service frequency
- it is therefore assumed that the route via Eaglescliff and Leamside should only be regarded as a diversionary route.

The Leamside branch is only needed if passenger service frequency is raised and there is no infrastructure improvement on ECML.

There is no diversionary route if the Leamside branch is not re-opened. The ECML route provides a diversionary route for the WCML to/from Scotland.

North East



Train growth 32 to 49 (north of Northallerton)
Option to pass via Ferryhill
and re-open Leamside branch
Diversionary routes via Yarm
and (if reopened) Leamside.
Additional passenger trains
will be slowed by existing freight trains

14. SOUTHAMPTON TO WEST MIDLANDS

The current alternative and diversionary routes ex Southampton are relatively circuitous

- only the Andover route is acceptable if operating costs to be competitive (via Redbridge for Western Docks and Chandlers Ford for Eastern Docks).

Under current conditions there is no realistic alternative route to that through Basingstoke, Reading and Oxford

- the re-modelling of Basingstoke by adding a ladder to its west and a loop to the north of the station platforms would add resilience

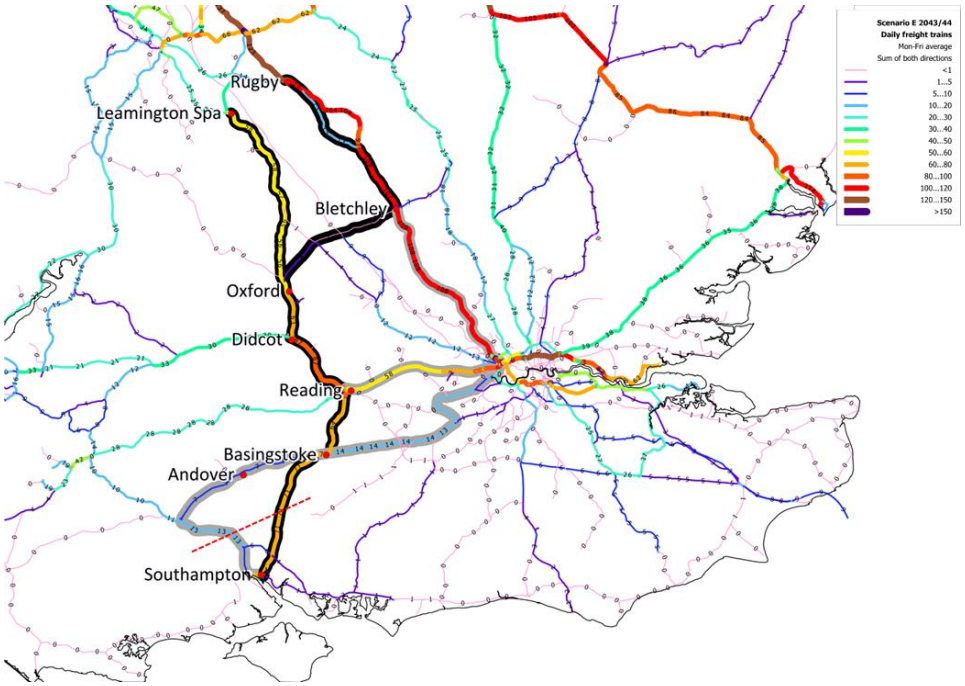
However, an option exists to create an alternative load gauge enhanced route to reach the West Midlands through Standish Junction, Kings Norton and Washwood Heath, reached from Southampton via either Bristol or Swindon.

The present principal diversionary route north of Basingstoke to those 'via Reading' is 'via Woking and Kew', through West London and via WCML.

A further alternative will be available via Oxford and the re-opened EWR to Bletchley for Southampton to Golden Triangle destinations (preferable to via Kew if available).

- also providing diversionary route to the West Midlands and the currently via Leamington Spa.

Southampton - West Midlands



Train growth 62 to 84 (north of Southampton)

Diversionary routes via Andover and Kew and potentially via Bristol

15. WEST MIDLANDS

The local network is congested and currently caters for:

- Southampton to North West and Yorkshire
- Access to local terminals (Hams Hall, Lawley St., Birch Coppice and, in the future, Cannock and Four Ashes).

The only alternatives to the routing through Leamington Spa to the North West are via either Coventry and Nuneaton or via Solihull, Sutton Park and Bushbury Junction. With new chords (see below) the route via Coventry and Nuneaton (for the north-east and Birch Coppice) and via Sutton Park and Cannock could act as diversionary route, minimising freight passing through the centre of the West Midlands.

The preference is to raise the capacity of Leamington Spa – Kenilworth – Coventry link (2 tracking, exploiting less fast trains through Coventry post HS2) and allocate all traffic to this route.

Traffic to Landor St. and Hams Hall could also pass via Coventry.

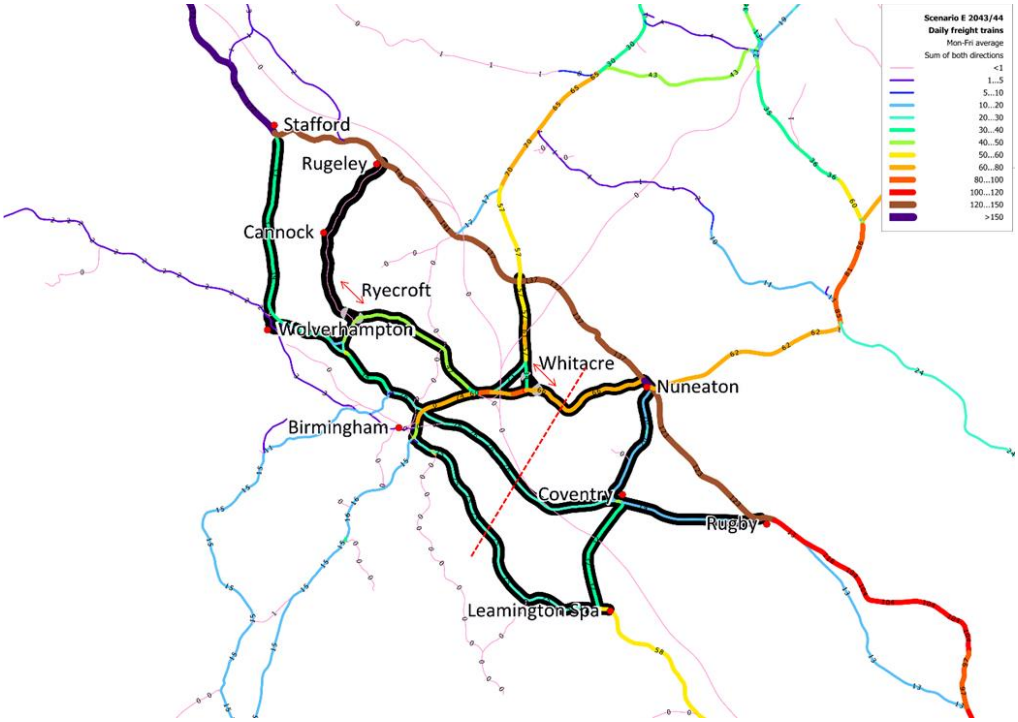
- providing adequate freight paths is available 'across' Coventry post HS2.

There is an option for access to Birch Coppice, East Midlands and Yorkshire to be by a new chord at Whitacre Jn., providing a direct route between the 'Golden Triangle' terminals in the southern East Midlands (e.g. Daventry) and the North-East

There is an option to re-route trains from Lawley St., Hams Hall and Birch Coppice to the North West via Cannock via new chord at Ryecroft Junction.

If built, the proposed dive-under at Nuneaton would provide for a shorter and more direct route between Southampton and Yorkshire (but not taken into account as not committed) and reduce but not eliminate the case for a chord at Whitacre Junction.

West Midlands



Train growth 72 to 113
Option to divert more via Kenilworth and Nuneaton
Options to create new chords at Whitacre and Ryecroft junctions to divert trains from central area
- but not taken into account for routing

16. GREAT WESTERN

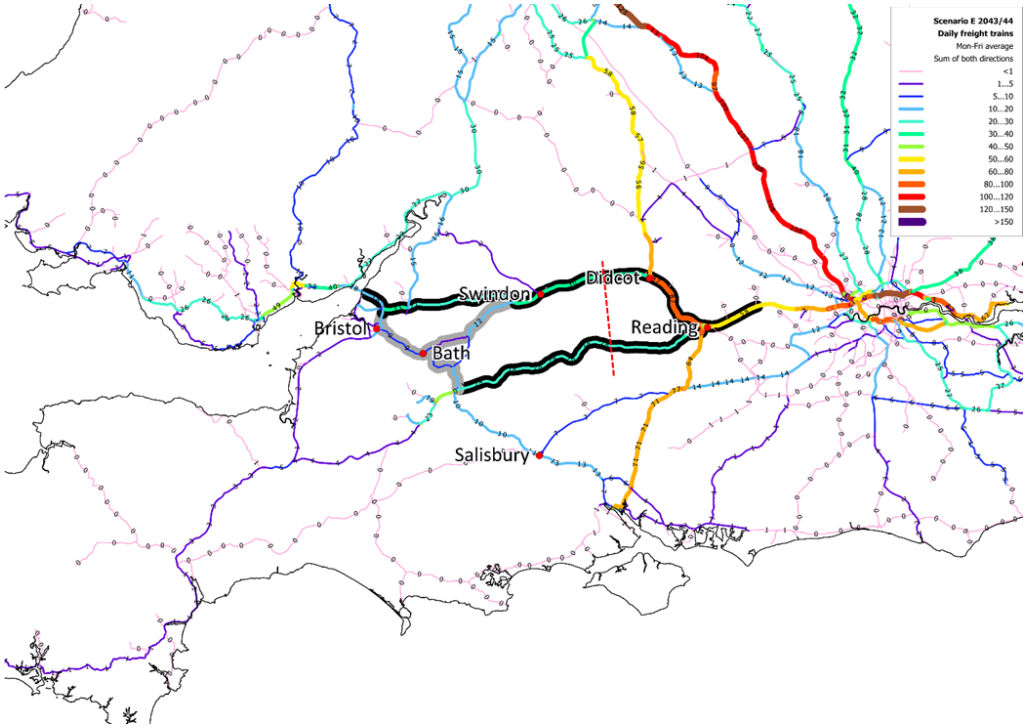
The principal route from South Wales and Avonmouth is via Bristol Parkway, for which the route via Bath acts as a diversionary route.

The diversionary route for stone trains between the Mendips and London is via Swindon

No other options are competitive.

Additional capacity on the principal route could be achieved by including a dynamic loop in the up direction between Shrivenham and Knighton Crossing and longer loops between Bristol Parkway and Swindon.

Great Western



Train growth 38 to 59
(east of Swindon/Hungerford)
Diversionary routes via Bath

17. SOUTH TRANSPENNINE & MML

The continuing growth in construction trains from the Peak District to the Midlands and South creates congestion at Dore Junction.

This congestion seriously exacerbated by passenger aspirations

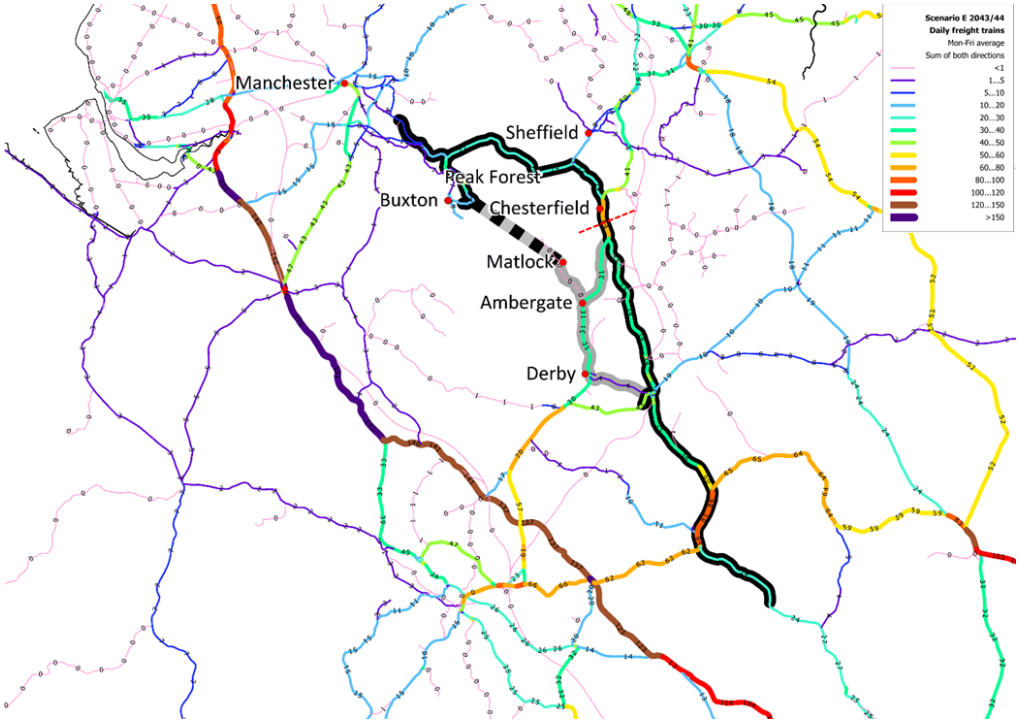
- Northern Powerhouse Rail objective to increase speed and frequency between Manchester and Sheffield via the Hope Valley
- HS2 eastern leg which will 'return' high speed trains to MML at Clay Cross and to use the MML via Chesterfield and Dore Junction to Sheffield.

No existing alternatives are available but the reopening of rail routes presently used for either the Monsal Trail (Peak Forest – Matlock) or Tissington Trail (Hindlow - Uttoxeter) could provide alternative and diversionary routes (the latter avoids Derby but is much less direct).

There would be benefits to cross-country passenger services which may otherwise be diverted from Sheffield via the 'old road' (via Barrow Hill).

Forecast traffic has been routed via its existing route with a diversionary route via Stoke and Uttoxeter and via Ambergate Junction.

South Transpennine & MML



Train growth 42 to 63 (north of Chesterfield)
Option to re-open Peak Forest – Matlock to divert construction trains (post HS2)
Diversionary route via Ambergate.

18. NORTH TRANSPENNINE

Current freight volumes are limited but opportunities are being developed ex Humber, Tees and Mersey ports when suitable load gauge available.

The operators' preferred route is via Diggle (W8a loading gauge available based on RT3973), with alternatives being via the Calder Valley and then either via Rochdale or Burnley

The development of Northern Powerhouse Rail Between Manchester and Leeds will add to available capacity for freight through released capacity

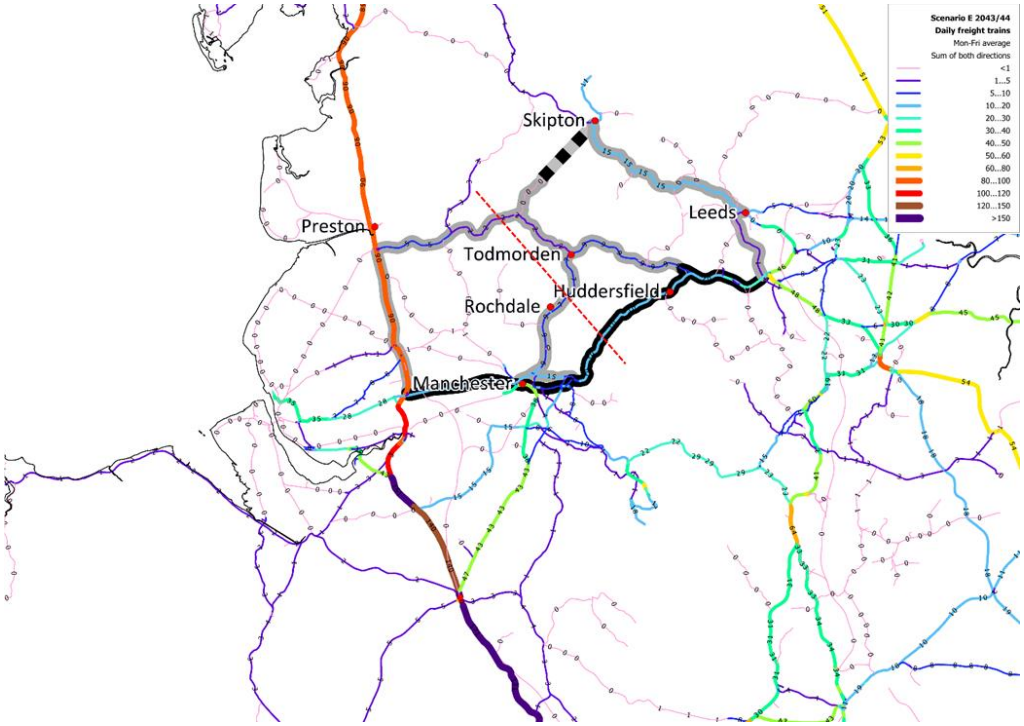
- but, as with Calder Valley/Rochdale route, this involves freight trains passing via congested Central Manchester.

Alternative routes are available via Midlands (involving a major addition to distance via Lichfield or Uttoxeter) or, more realistically, via Copy Pit (1800 tonne trailing weight permitted) but this will also add to operating costs.

The re-opening of Skipton – Colne would allow 2400 tonne trailing weight trains between the WCML (from Faringdon Jn.) to Humberside but further adds to operating costs by adding to transit times and forcing trains through the (highly congested) western approach to Leeds station. A new chord at Hellifield would allow trains to follow a similar approach but raise operating costs still further.

Diversionary routes are available (via Copy Pit, Rochdale or Diggle) but route selection will be affected by passenger aspirations.

North Transpennine



Train growth 16 to 35 (Huddersfield/ Todmorden)
Principle route via Huddersfield
Diversionary/alternative routes via Todmorden and Rochdale,
Skipton or Copy Pit route.

19. KENT & WEMBLEY

Trains from the Isle of Grain, North Kent and the Channel Tunnel all pass via Clapham Junction area to reach Wembley via Kensington Olympia

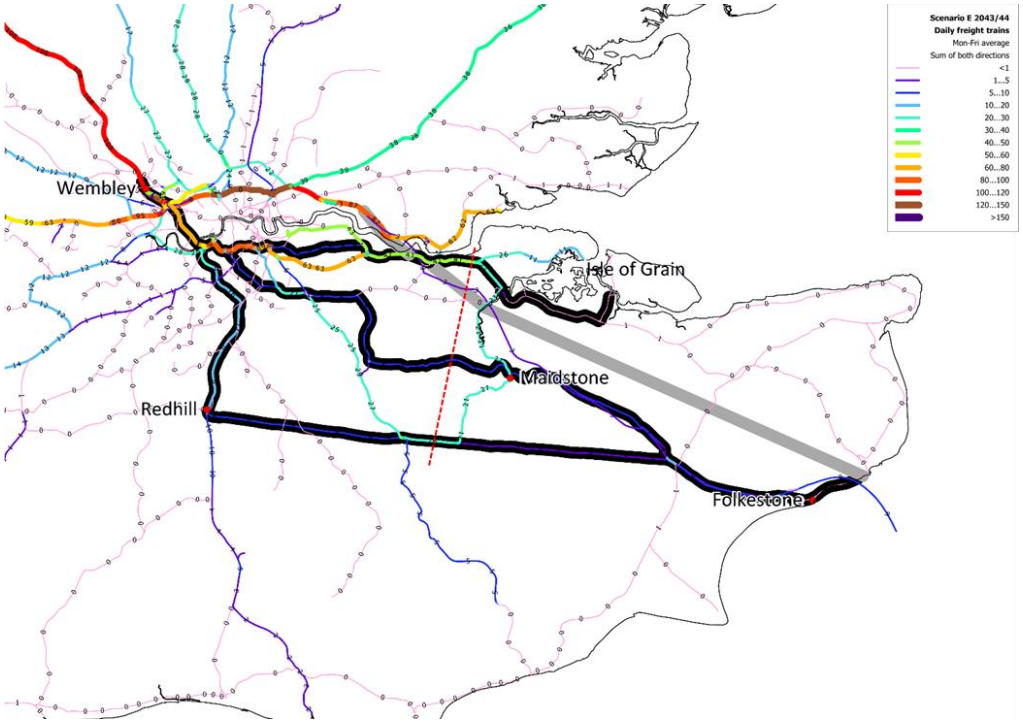
The principal alternative route is via HS1 (including from Isle of Grain) but access is very limited because of low trailing weight limits (steep gradients) and (currently) high passenger usage and penalty charges for delays to passenger trains.

Several routes are available across Kent of which the preferred one is via Maidstone (70% allocated), with 30% allocated via Tonbridge; the one acting as a diversionary route for the other.

Train distances covered can be reduced for construction trains from South Thames Wharfs (Angerstein) by a new chord, reducing rail freight train kilometres in an area with significant passenger service congestion.

A scheme to enable passenger train services to access much of the currently freight-only Grain Branch would see the institution of an easterly curve at the Hoo end of the line, providing an alternative routing for freight traffics via Higham, Strood and the Medway Valley line to Paddock Wood.

Kent & Wembley



Train growth 26 to 64
Alternative routes via Maidstone (70%) and Redhill (30%)
HS1 offers diversionary route and enhanced gauge.

20. SOUTH YORKSHIRE

The principal diversionary route is circuitous and via North Trans-Pennine, Manchester and Crewe.

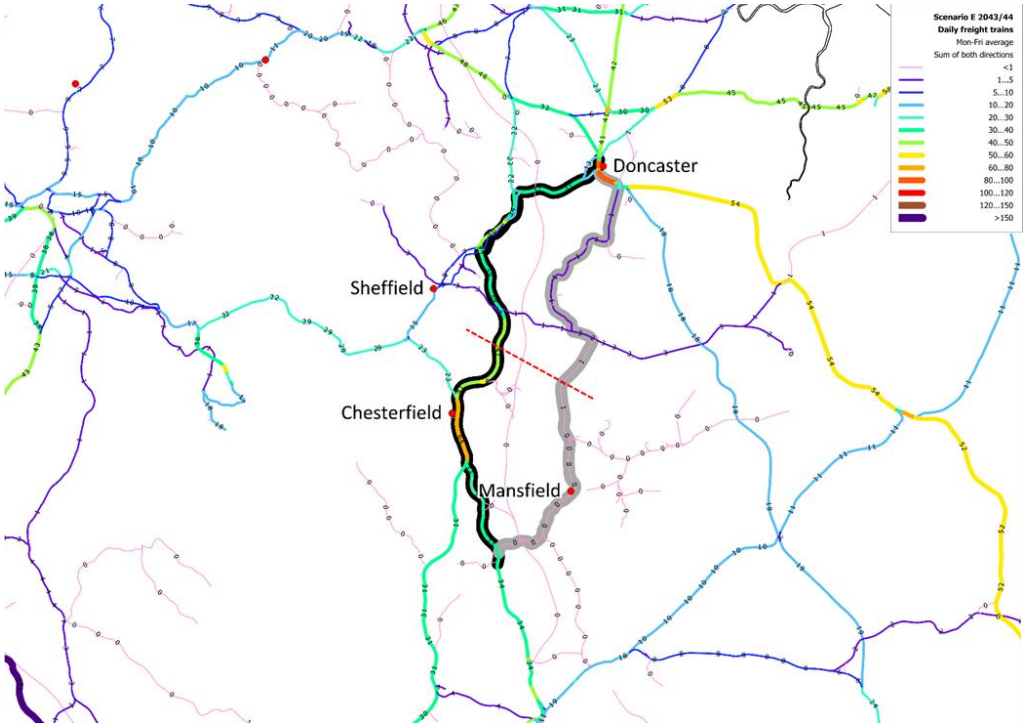
MML likely to become congested through HS2 development.

- limiting freight capacity between Doncaster area and West Midlands.

An alternative route that could be considered via Maltby, Shireoaks and Mansfield, by-passing Clay Cross area to reach MML at Ironville Jn.

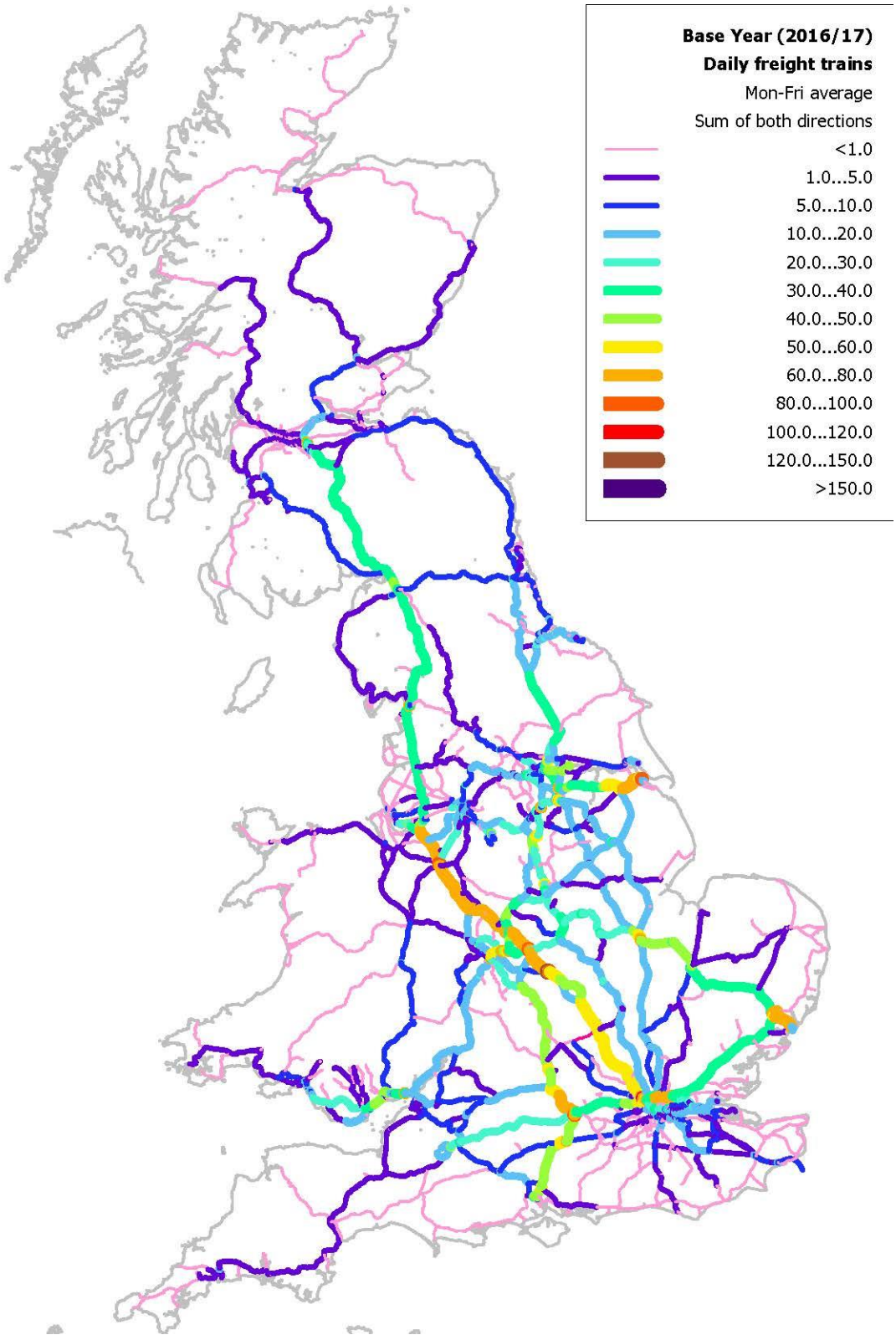
- would relieve 'old road' (via Barrow Hill) which is earmarked for cross-country passenger services (see South Trans-Pennines and MML above)
- would require trains to pass through Doncaster and not by-passing the station area
- relatively little used post end of coal traffics
- however, it would require load gauge, line speed and electrification so traffic has not assigned to this route.

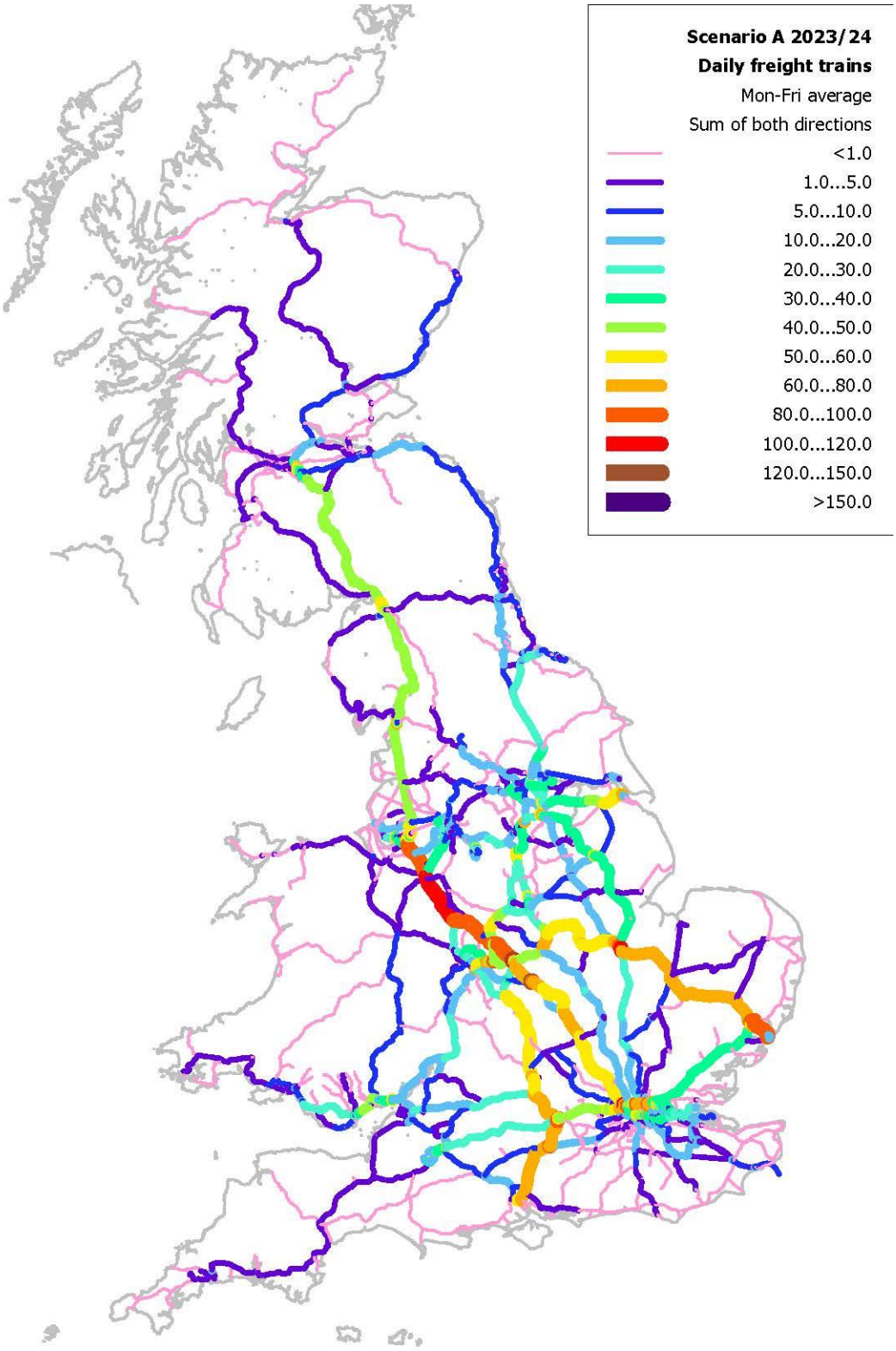
South Yorkshire

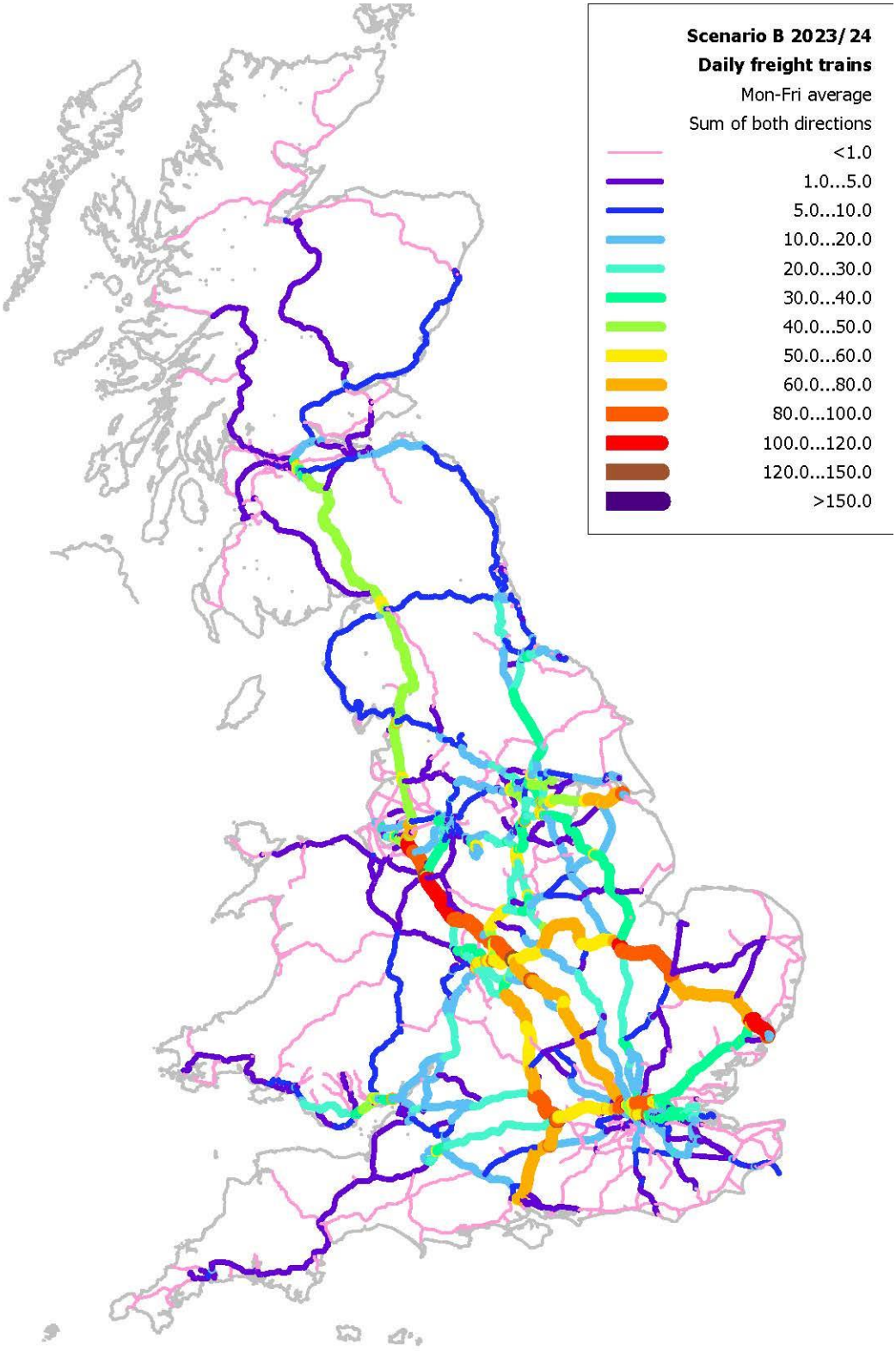


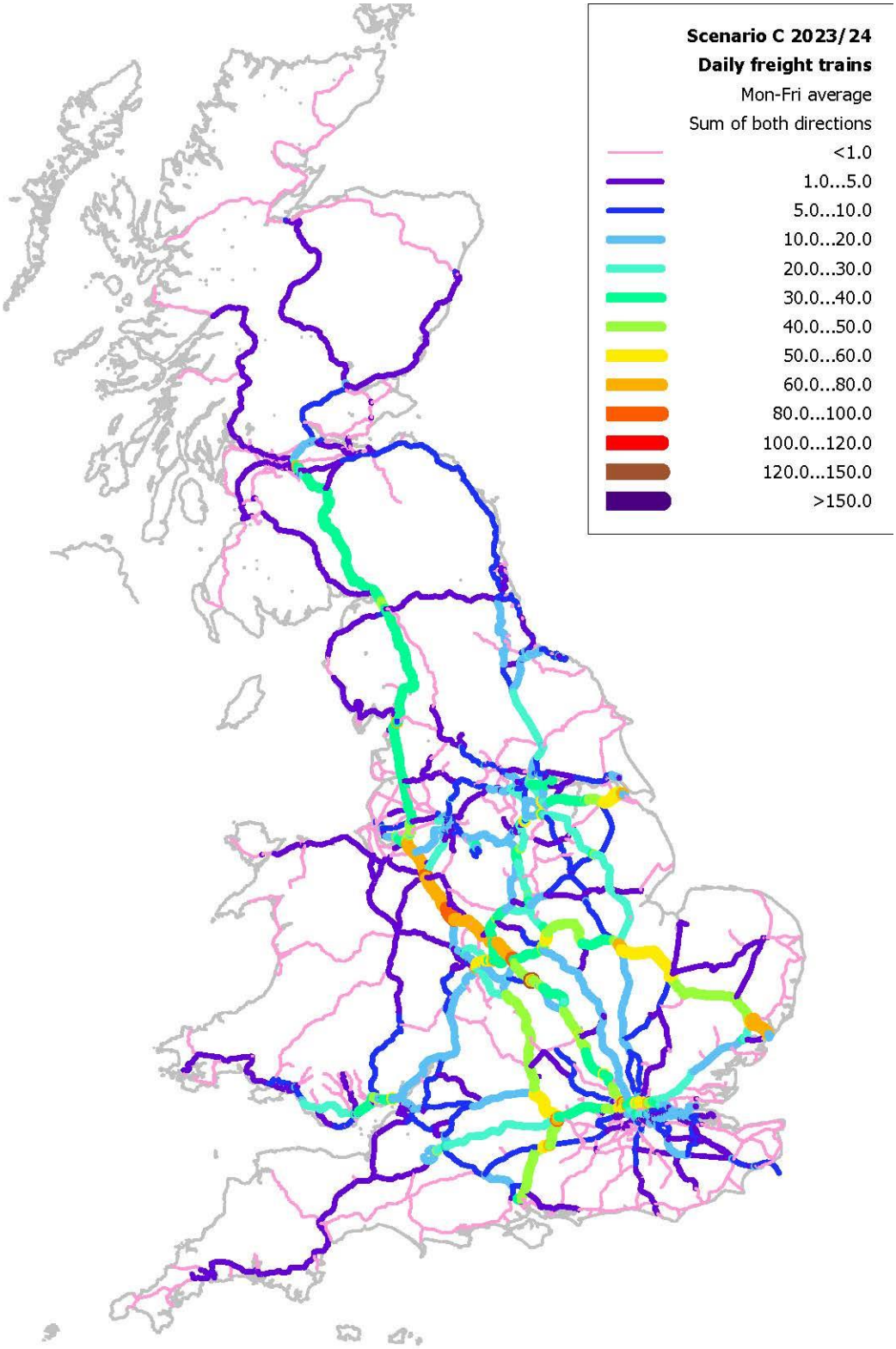
Train growth 26 to 41
Option to divert traffic away from highly congested Chesterfield area
Diversionary route via Mansfield would require loading gauge upgrade.

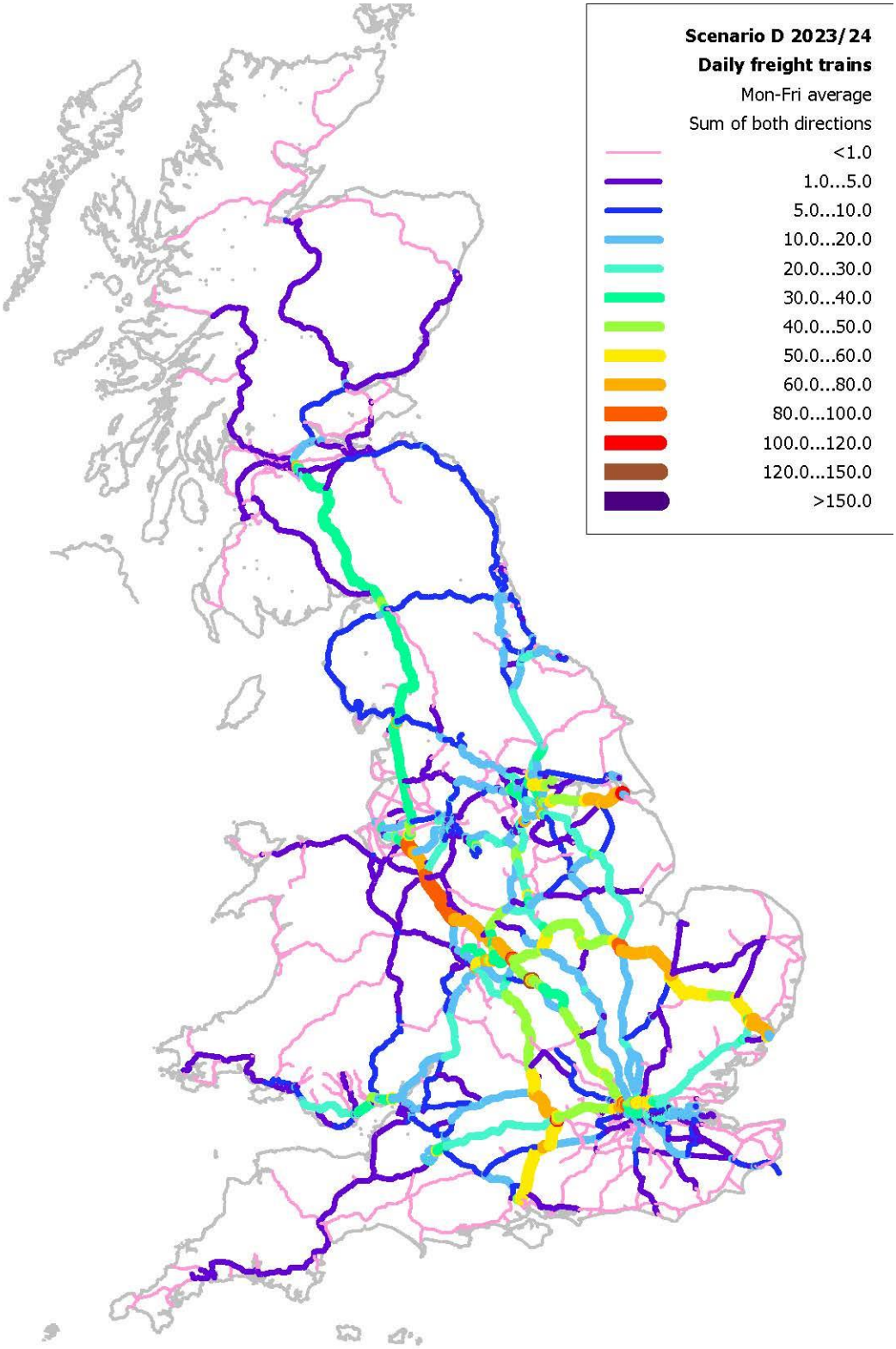
APPENDIX: DAILY TRAINS ASSIGNMENT AFTER RE-ROUTEING (ALL SCENARIOS)

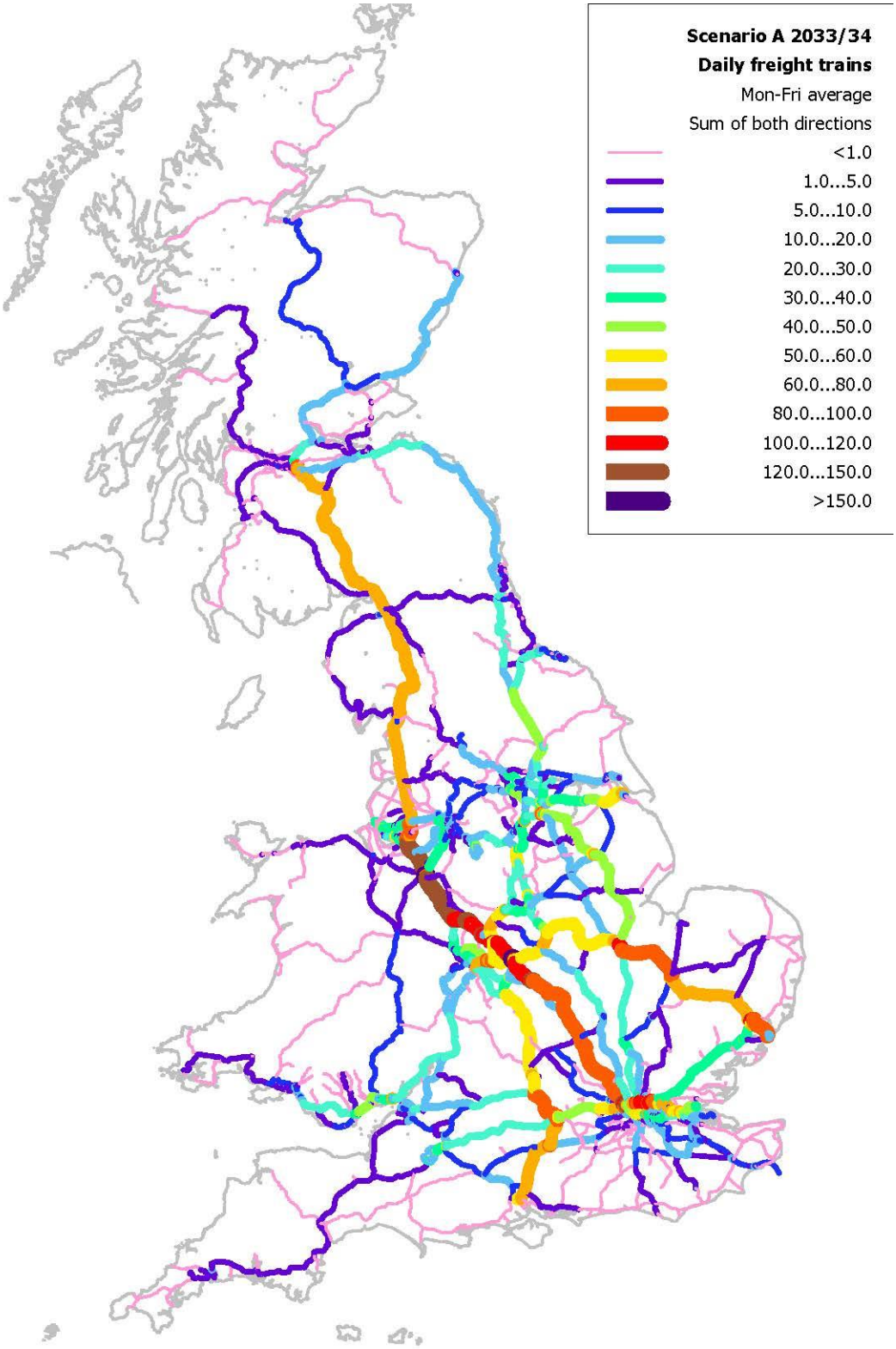


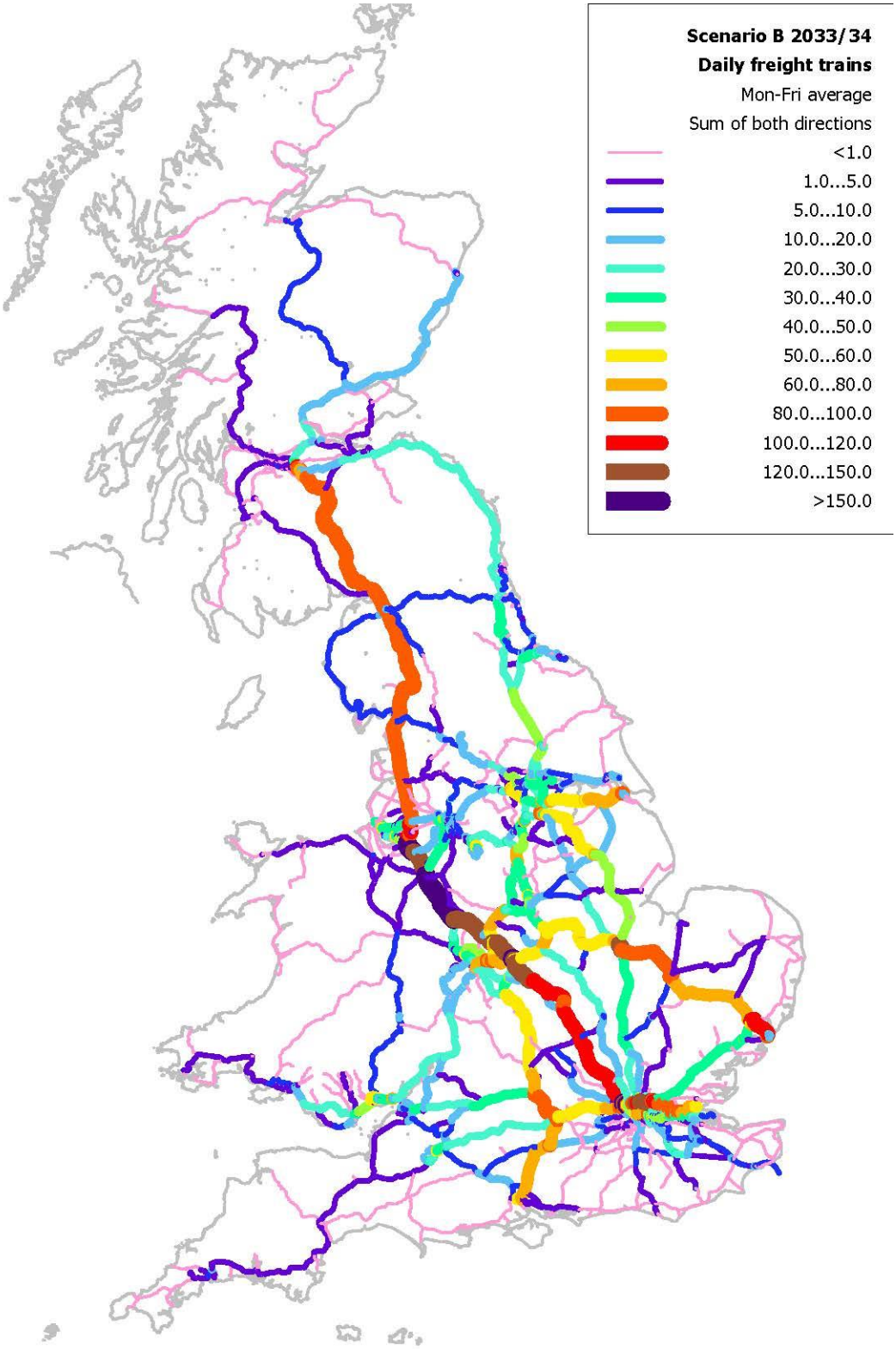

Scenario A 2023/24
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0

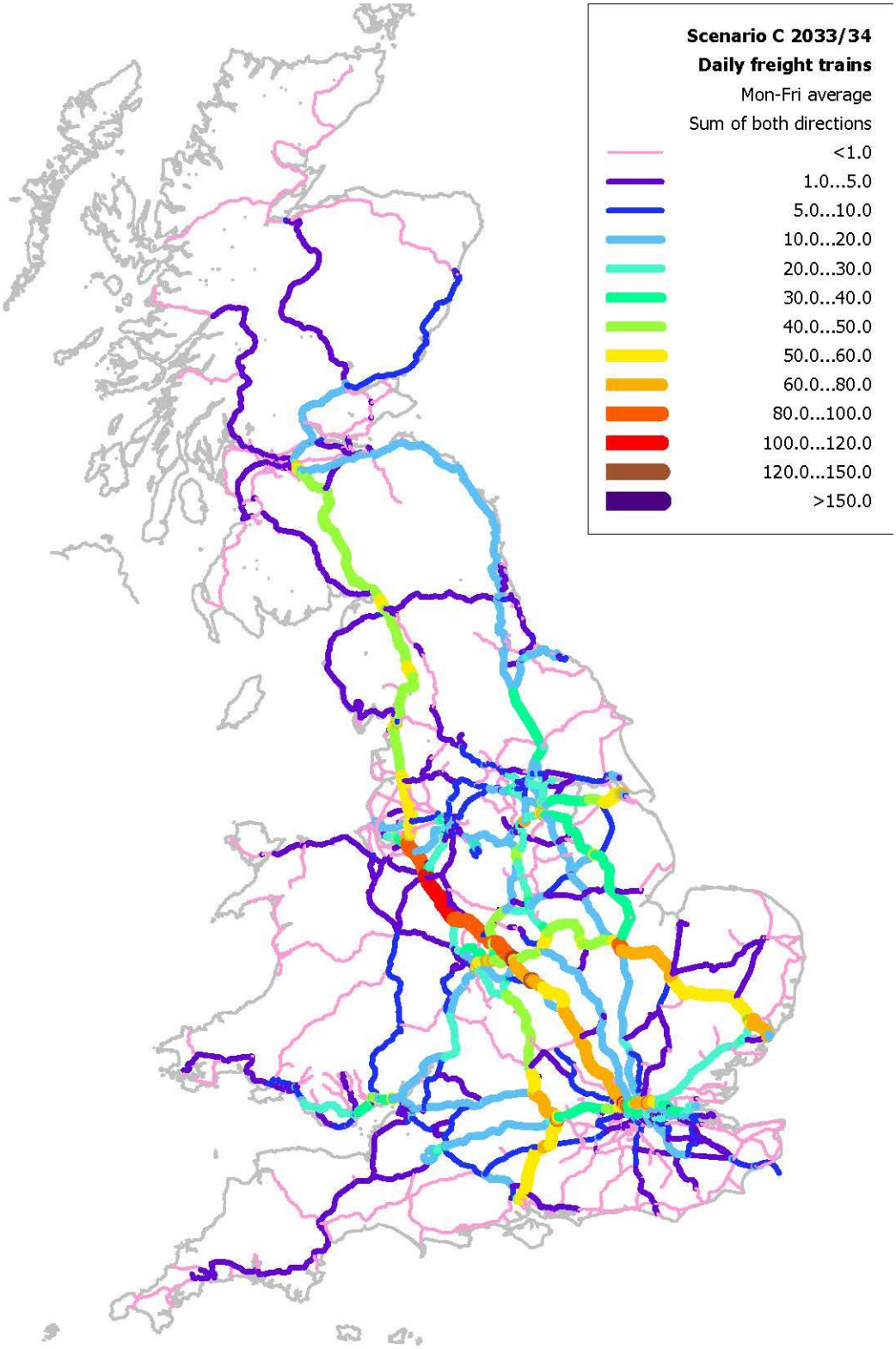

Scenario B 2023/24
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0

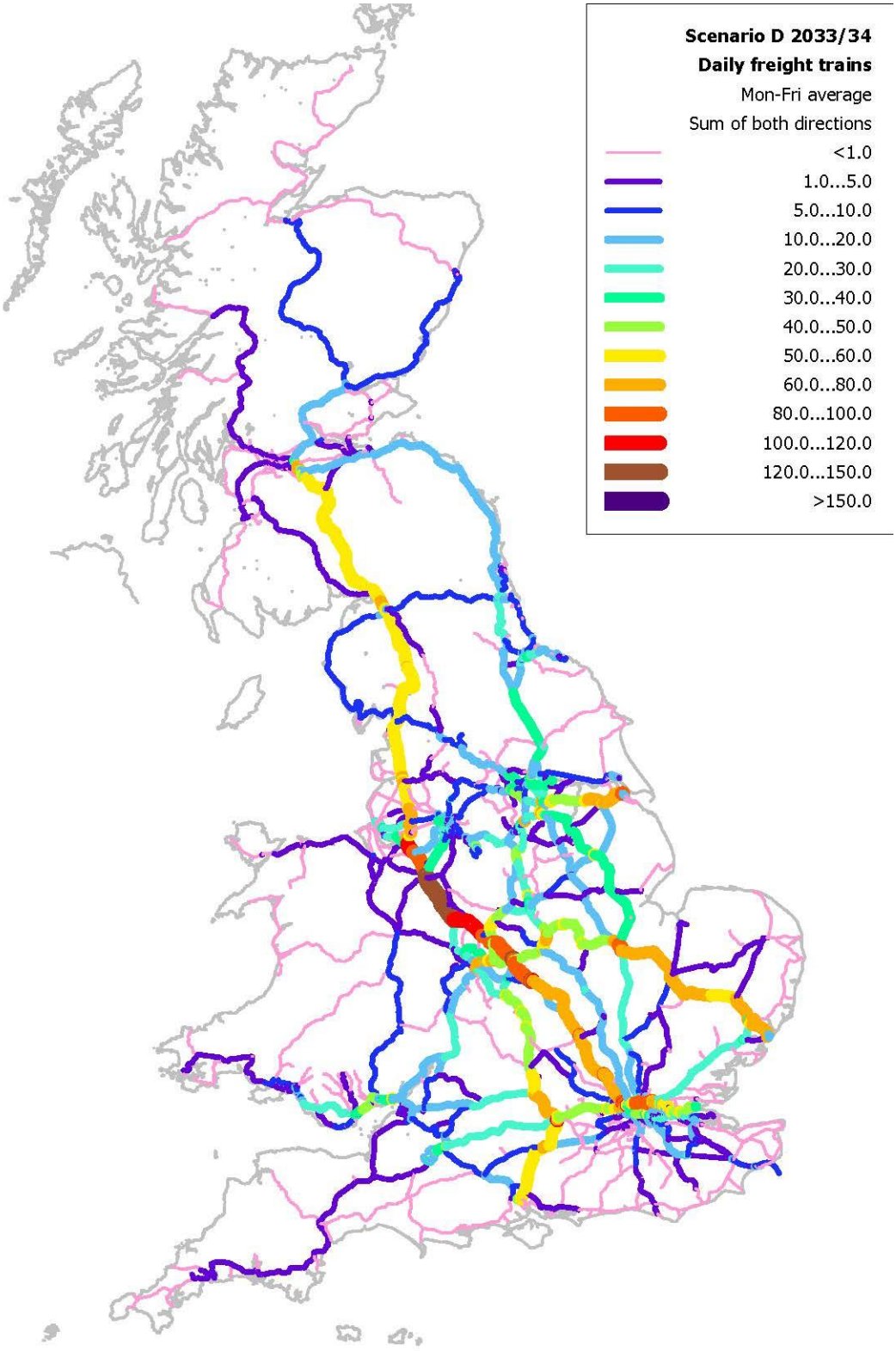

Scenario C 2023/24
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0

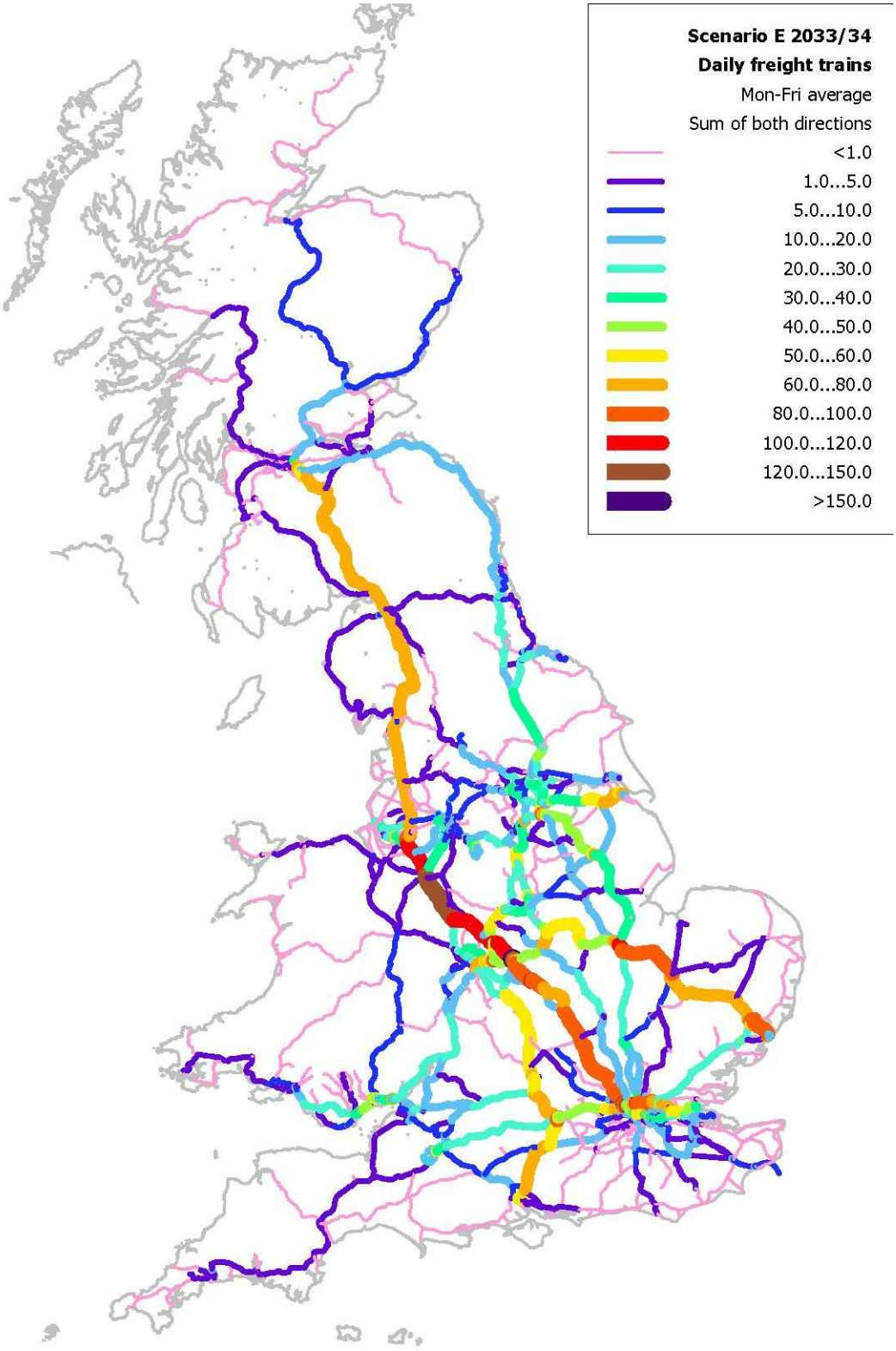

Scenario D 2023/24
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0

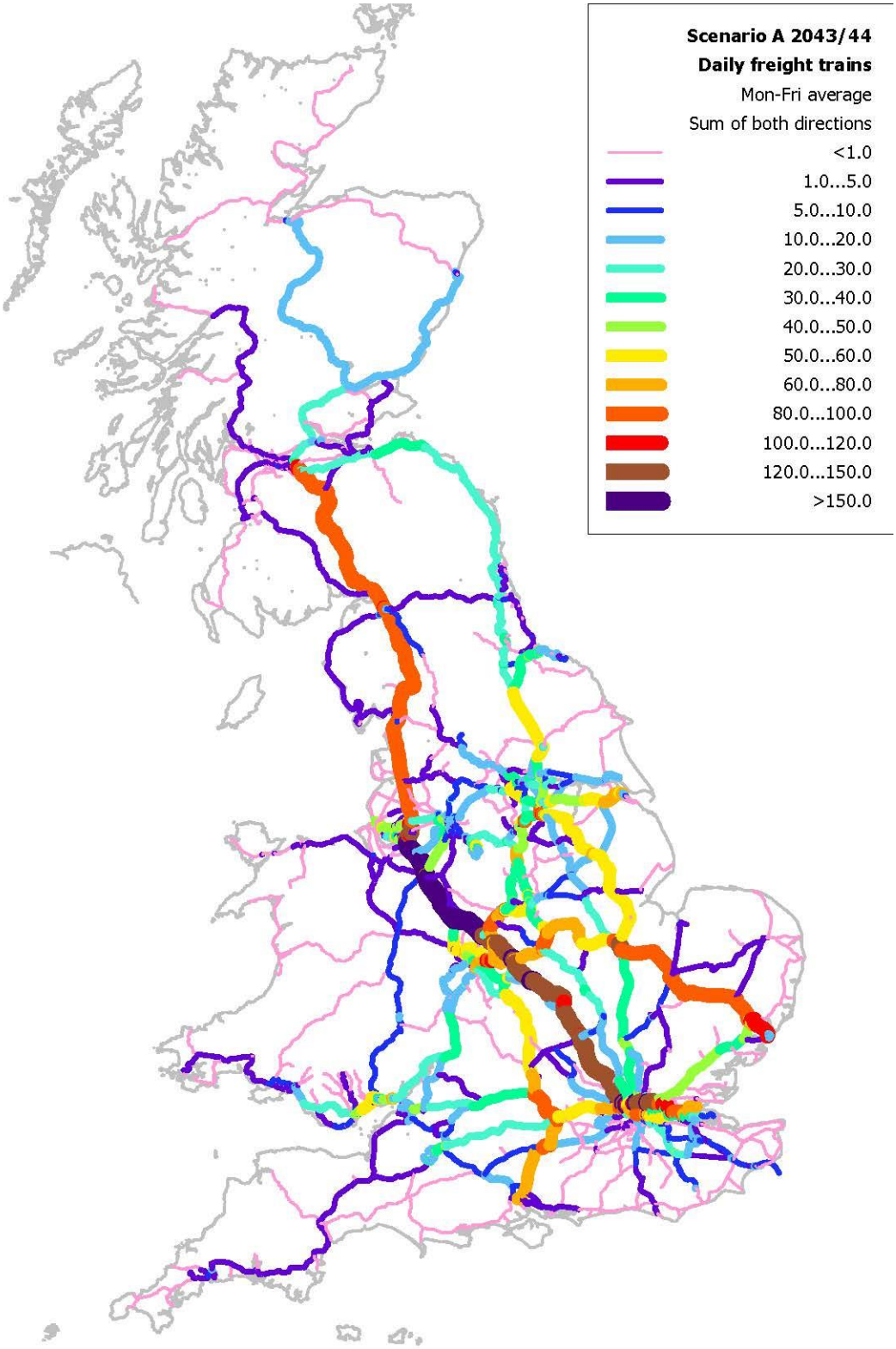

Scenario A 2033/34
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0

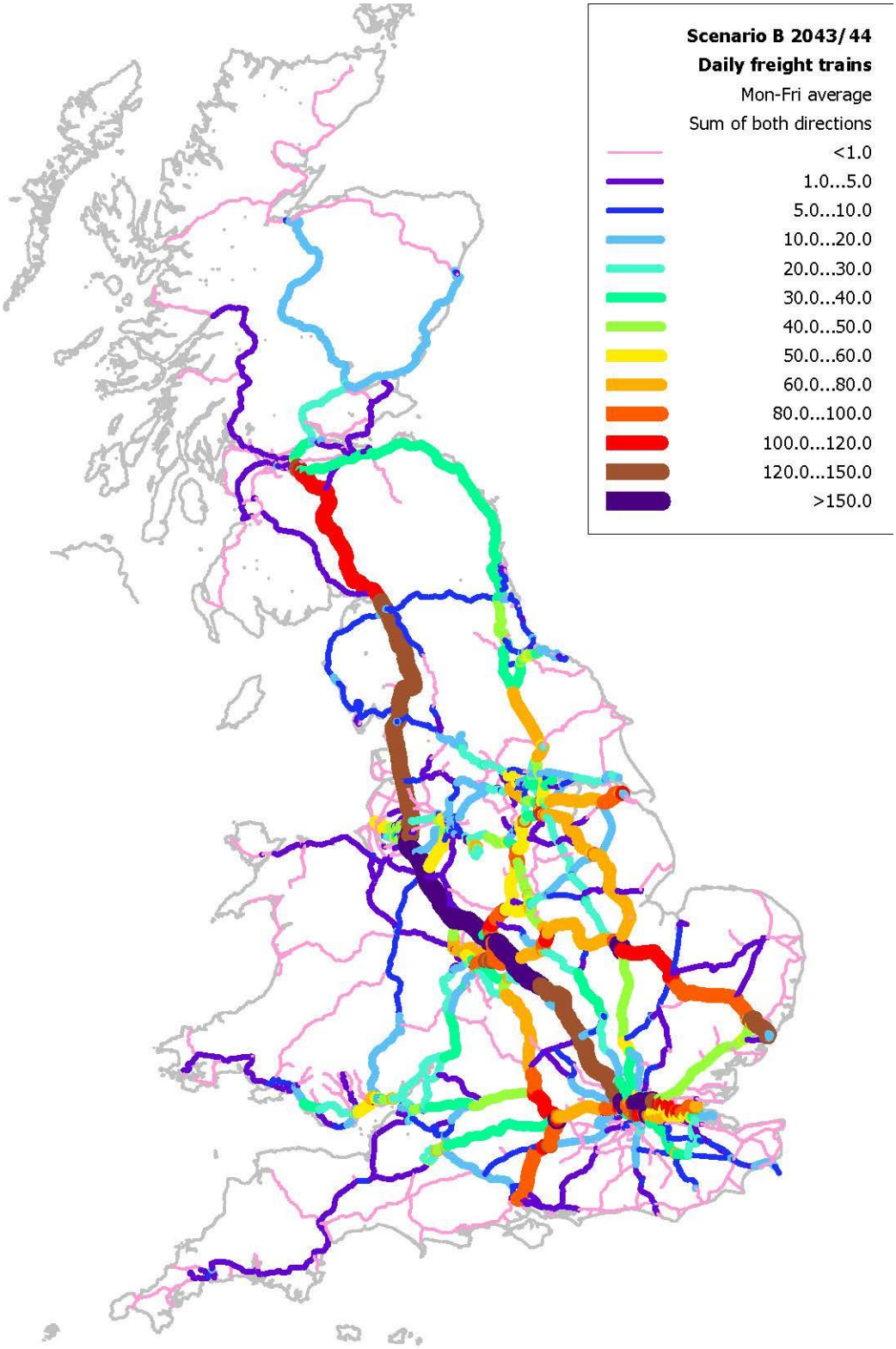

Scenario B 2033/34
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0

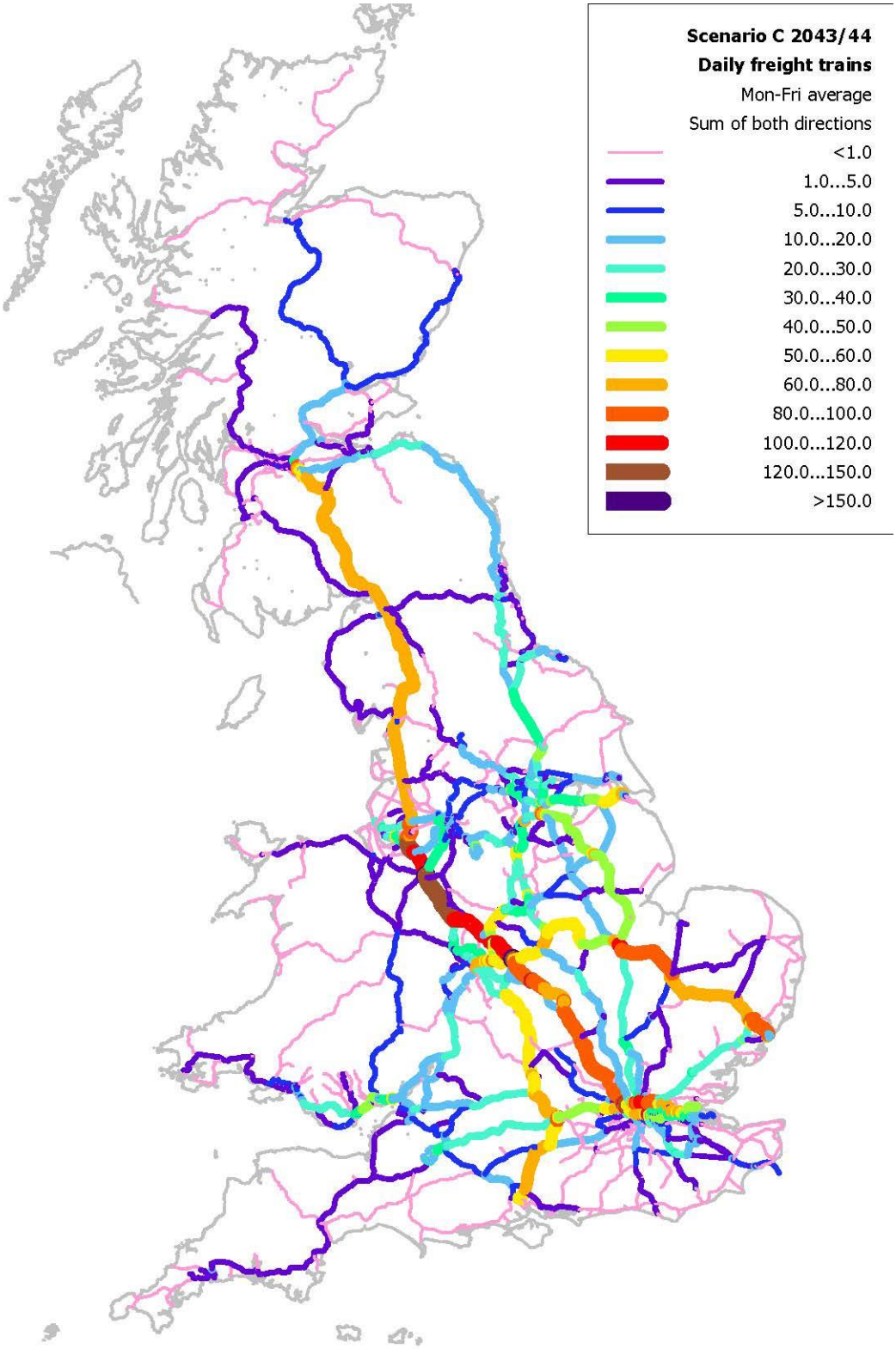

Scenario C 2033/34
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0

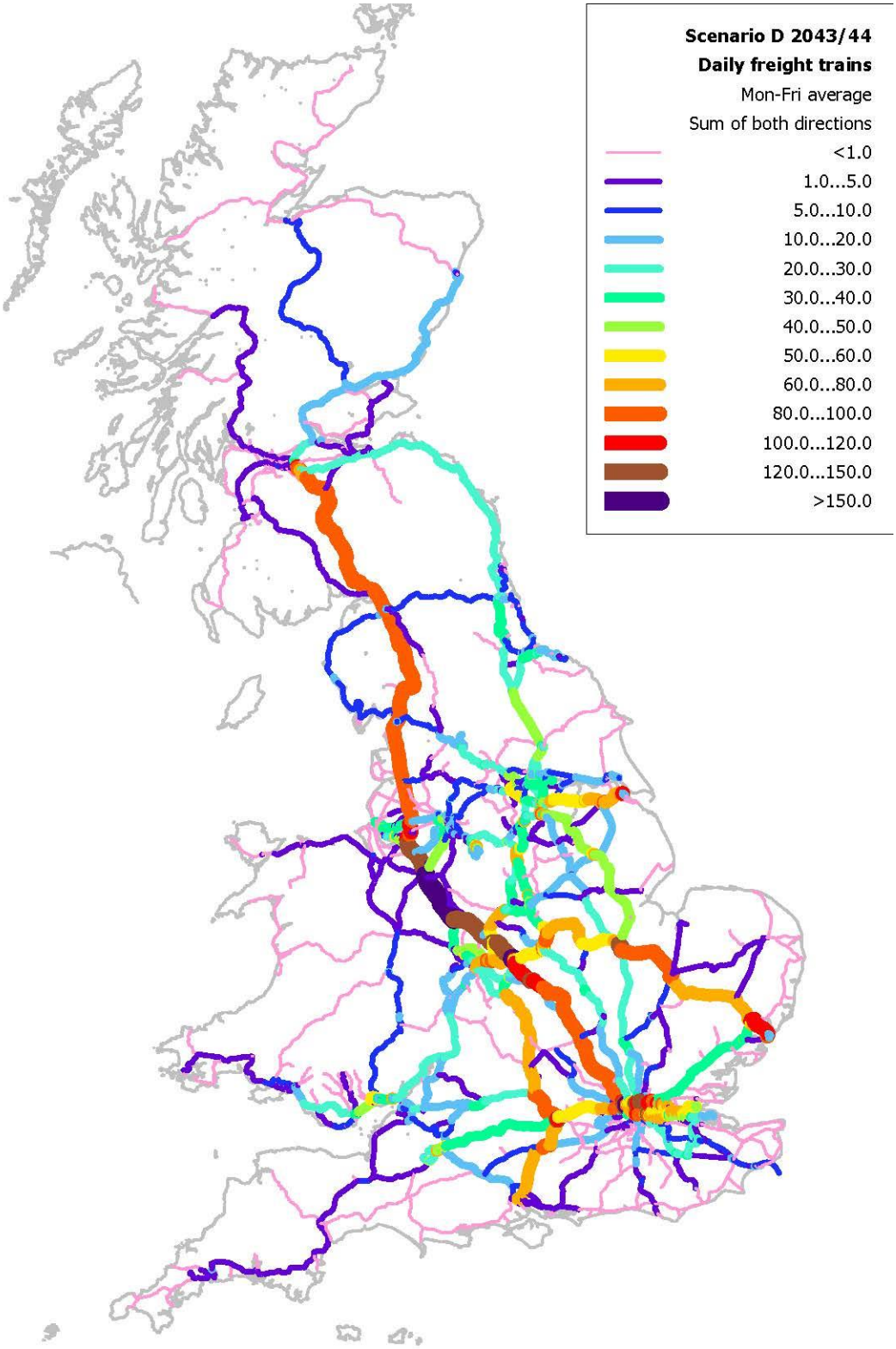

Scenario D 2033/34
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0

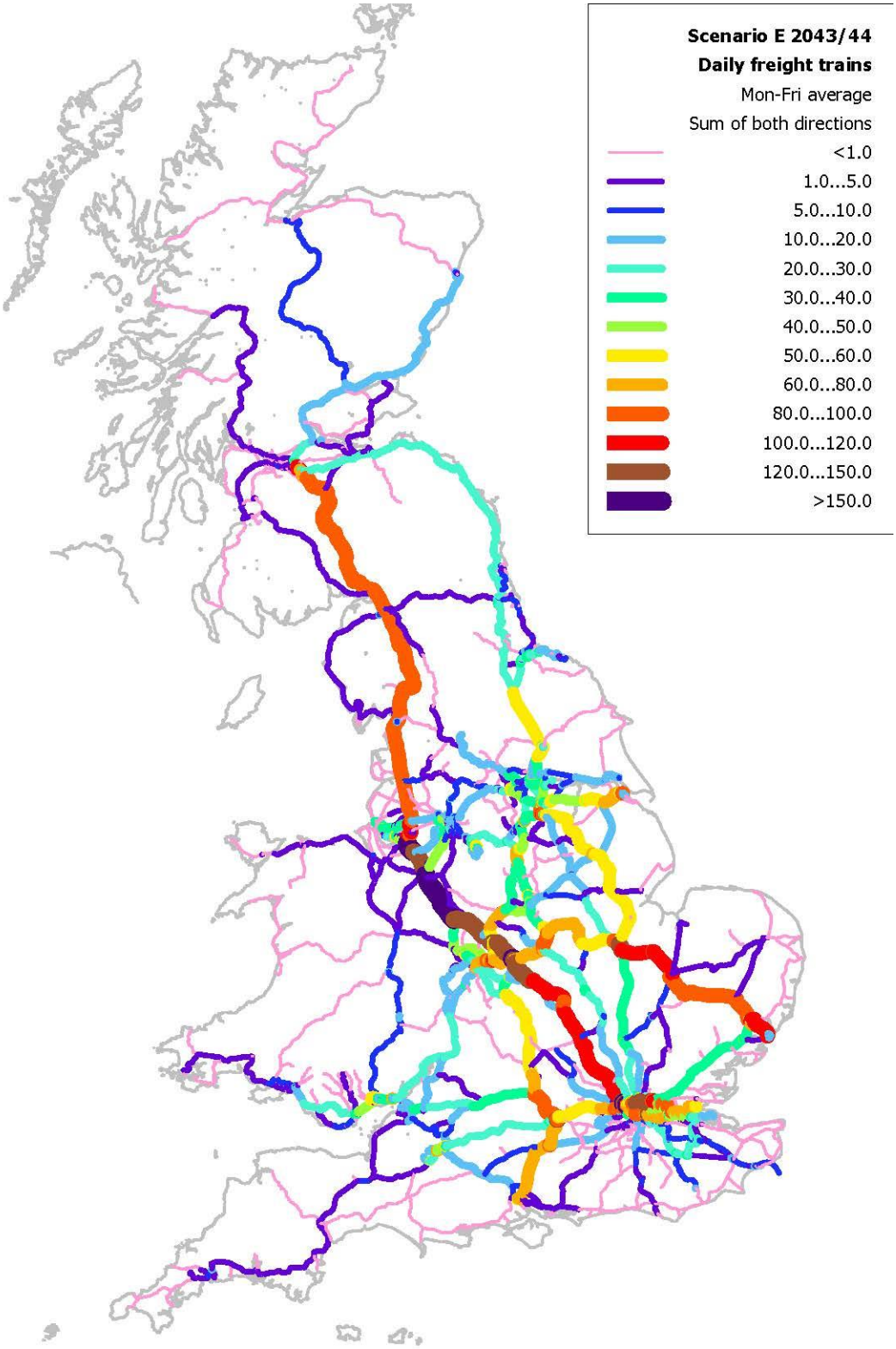

Scenario E 2033/34
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0


Scenario A 2043/44
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0


Scenario B 2043/44
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0


Scenario C 2043/44
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0


Scenario D 2043/44
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0


Scenario E 2043/44
Daily freight trains
Mon-Fri average
Sum of both directions
<1.0
1.0...5.0
5.0...10.0
10.0...20.0
20.0...30.0
30.0...40.0
40.0...50.0
50.0...60.0
60.0...80.0
80.0...100.0
100.0...120.0
120.0...150.0
>150.0