

TECHNICAL NOTE

TRANSPORT AND THE ECONOMY

PRODUCT 2A – WIDER ECONOMIC IMPACTS MODELLING

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1. INTRODUCTION

- 1.1.1 In order to understand key priorities for improving rail connectivity to and from the East Midlands region, SYSTRA developed an evidence-based assessment of the importance of different rail corridors by modelling the agglomeration impacts of potential rail service improvements between station-to-station pairs.
- 1.1.2 This Technical Note sets out the context for undertaking this analysis, the methodology used in the assessment, and the results that have emerged.

2. CONTEXT

- 2.1.1 For all regions of the UK, the importance of demonstrating both the benefits and the priorities of city-to-city connectivity, as this analysis work seeks to do for the East Midlands, is clear. The evidence of the economic impact of improved connectivity between local economies is significant and as noted in the TfEM & Midlands Connect Shared Vision for the East Midlands:

“The East Midlands has a strong track record in delivering high levels of housing and employment growth in the national interest. But with better connectivity we could do so much more.”

- 2.1.2 Cities and regions interact through a web of economic relationships that extend far beyond their administrative boundaries. These inter-regional linkages take several forms — including shared labour markets, supply-chain and business-to-business connections, access to shared assets such as airports and universities, and the movement of people for leisure and consumption. Together, they underpin patterns of specialisation, collaboration and productivity across the national economy. Rail connectivity plays a distinctive role in sustaining and deepening these relationships by enabling frequent, reliable, and cost-effective travel between major centres of activity.
- 2.1.3 Agglomeration effects provide one of the most important economic linkages between cities and regions. Agglomeration captures the advantages that arise when firms and workers are brought effectively closer together. They can share access to a wider pool of suppliers, clients, and infrastructure; efficiently match workers to jobs and consumers with suppliers; and learn from each other within dense networks of connected businesses. East Midlands Gateway / SEGRO Logistics Park East Midlands Gateway, for example, is efficient because it can aggregate demand from across the East Midlands and beyond.
- 2.1.4 Rail links help cities behave like a single labour market when commuting times fall within “TTWA” catchments (the ONS concept built from actual home-to-work flows). In the Midlands, the Birmingham TTWA already spans much of the Black Country, while Derby, Nottingham and Leicester form adjacent TTWAs — indicating real but currently partial integration across these cities. Better rail links on short inter-urban pairs (e.g., Leicester–Coventry/Birmingham; Derby–Stafford/Wolverhampton/Birmingham) could deepen specialisation by widening feasible daily commutes into higher-productivity centres. Evidence points to the constraint today: Birmingham has relatively low city-centre commuter inflows

and limited 30-minute public-transport access¹ compared with peer cities, capping the scale of the effective labour market; strengthening rail connectivity is a direct lever to expand it. These effects are particularly relevant in sectors where scale and skill-matching drive productivity, such as professional and technical services, manufacturing, and advanced logistics.

- 2.1.5 Finally, consumer and leisure links contribute to the overall strength of connectivity between regions. Major retail, cultural and sporting destinations in Birmingham, Manchester, Leeds and London attract visitors from across the East Midlands, while the region's own attractions — including sport, heritage and tourism assets — draw demand from neighbouring regions. These flows sustain visitor economies and underpin the case for balanced investment in both directions.
- 2.1.6 The relative importance of these mechanisms varies by corridor — from intensive short-distance commuting and services trade with Birmingham, to longer distance trade with the North West, to industrial collaboration with Yorkshire, and national market access for Lincoln. Following sections of this report summarise how these relationships differ across the principal corridors of our analysis. Taken together, these mechanisms illustrate that improved rail connectivity between the East Midlands and surrounding regions supports not only faster journeys but deeper economic integration — enabling cities to function as part of a wider, more productive regional system.
- 2.1.7 However, recent changes in Government policy have necessitated a rethink and a renewed need to reassert the priorities of city-city connectivity for the East Midlands. The cancellation of HS2 in the region, initially to be delivered through a new station at Toton on a route through to Leeds, and then via direct High Speed services between London, Birmingham and Nottingham as part of the Integrated Rail Plan, has left a sizeable gap in committed major rail schemes for the East Midlands without a clear vehicle for future delivery. Meanwhile, the recent Comprehensive Spending Review (CSR) has paused the Midland Mainline electrification programme, whilst major schemes in other parts of the UK (such as Transpennine Route Upgrade and East West Rail) are forging ahead.
- 2.1.8 Furthermore, with the reorganisation of the rail industry on the horizon through Great British Railways, this is a critical point at which the region needs to strongly state and evidence its priorities and restart investment conversations in a shifting operational environment.
- 2.1.9 The Shared Vision states that Midlands, Yorkshire and North East (MYNE) rail connectivity is a key strategic investment priority. The MYNE programme, proposals being developed by the industry and government for an improved service specification, alongside the Midlands Rail Hub, with funding committed in the CSR, necessitates the development of an agreed and evidenced set of priorities that any future proposals coming forward can be tested against.

¹ Centre for Cities, The 30 minute City [<https://www.centreforcities.org/story/mapping-the-30-minute-city/> accessed 15/10/2025]

3. METHODOLOGY

3.1 Generalised cost and generalised journey time

- 3.1.1 Data was extracted from the Midlands Connect MiRANDA model, a model developed to forecast changes in demand as a result of changes to train services in the East and West Midlands. The model uses a very granular zoning structure in the Midlands Connect area with a coarser zone structure covering the rest of the UK. The model also contains a highway model, allowing multi modal generalised cost to be estimated which is important for estimating agglomeration impacts correctly.
- 3.1.2 The focus of the assessment was flows to and from four key stations within the region: Derby, Leicester, Lincoln, and Nottingham.
- 3.1.3 At the time of completing this work, the version of the MiRANDA model used had a base year corresponding to the 2018/19 rail year and two future year forecasts – 2031 and 2041 – which incorporate both exogenous and endogenous changes and reflect the completion of the planned phases of the HS2 scheme. These future year forecasts were developed prior to both the impact of the COVID-19 pandemic and the cancellation of the HS2 Eastern Leg. It was considered that data from the 2031 scenario would be suitable for this assessment given that within this modelled scenario HS2 did not impact on services in the East Midlands and also the absence of significant changes to services proposed in the East Midlands area between the base and scenario years, the only significant change from the current timetable being the reinstatement of an hourly Reading – Newcastle CrossCountry service.
- 3.1.4 For the four key stations, data was extracted from MiRANDA for all flows to/from where demand for business and commute purposes in the morning peak period was greater than zero. Using this data and inputs from the TAG² databook, generalised costs were calculated for each zone-to-zone movement, both for a rail journey and a highway journey. Generalised cost was the chosen metric as it includes elements beyond solely in-vehicle time and corrects for distance in a way that allows for city pairs to be compared and assessed based on the relative strength of their connectivity.
- 3.1.5 The MiRANDA model has a core modelled area, or ‘internal area’, defined as the Midlands Connect Area (excluding the High Peak area of Derbyshire), and the key stations outside of this area where there are key interchanges, major demand interactions and aspirations for improved connectivity. All stations within this core area are included within the model. The ‘external’ area then covers the rest of Great Britain including key strategic stations such as Manchester, Sheffield, Leeds, Bristol, Newport, Liverpool, and the London termini.
- 3.1.6 Within the internal area, the zoning structure is of much greater granularity than that within the external area and as such we have a more detailed understanding of the generalised cost of flows within this area. For example, all interchange components of the generalised cost are specified with greater precision in the internal area but less so in the external area. However, whilst the granularity of the zoning structure provides that specificity, it also constrains the station catchments where in practice, they may be more fluid. In contrast in the external area the aggregated zoning structure allows for that fluidity. It could be suggested that this greater

² Department for Transport’s Transport Analysis Guidance

granularity within the internal zones could bias the results of the model towards this area (primarily the West Midlands), however, for the purposes of GVA estimation we believe that the impact of the differing levels of granularity balances out, as whilst the internal zones better capture the detail of Generalised Cost they may also be overstating the impact of factors such as interchange in areas with complex and overlapping station catchment geographies which is captured more broadly in areas covered by external zones.

- 3.1.7 For rail flows, the generalised cost included monetised representations of the generalised journey time (GJT) (a representation of the total perceived station-to-station journey time accounting for in-vehicle time, interchange time, and a frequency penalty to reflect the inconvenience of waiting to travel), the rail fare, and the access/egress time between the true origin/destination of the journey and the rail stations. This access/egress time was double weighted to reflect the perceived inconvenience of access/egress journeys within a rail journey.
- 3.1.8 Fares for inclusion within the generalised costs were estimated based upon revenue per passenger kilometre data obtained from the Office of Road and Rail Table 1210. This created a standardised set of distance-based fares.
- 3.1.9 Similarly, for highway the generalised cost covered the in-vehicle time, the vehicle operating costs (both fuel and non-fuel related) and, where applicable, any toll cost. No account was made for parking cost meaning the modelled highway generalised costs may be underestimating the true generalised costs however to accurately capture the parking costs would be challenging given the large volume of zone-zone flows used within the modelling and the requirement to determine an average parking cost across all options within each zone. The effect of this would be to underestimate the benefits of improving rail services as the baseline ratio of rail to highway costs will understate highways.
- 3.1.10 Demand data extracted from MiRANDA was then used to create an overall generalised cost per mode for each zone-to-zone movement weighted by journey purpose. As per TAG Unit A2.4 (productivity impacts), the generalised cost calculations accounted for business and commuting data only, with leisure trips not included as it is assumed that they do not impact on productivity.
- 3.1.11 Finally, a generalised cost of walking within station zones was created based upon a 25-minute journey time as a proxy for movement by all modes.

3.2 Agglomeration impacts

- 3.2.1 The first step in understanding the agglomeration impacts associated with these GJT changes was to calculate the economic mass associated with each zone. The access to economic mass (ATEM) is a measure of the accessibility of an area to jobs in a specified destination and is calculated for each industry in turn, aggregated into five sector groups: manufacturing, construction, consumer services, producer services, and public sector.
- 3.2.2 Data from the 2023 Business Register and Employment Survey (BRES) was obtained per MSOA (and for Scotland per Intermediate Zone) at two-digit Standard Industrial Classification level and aggregated to the five industrial sectors using Table D1 in TAG Unit A2.4, providing the total number of jobs per sector per MSOA. This distribution was then used to scale the jobs

totals to those found in the DfT Wider Impacts Dataset. An exercise was then undertaken to map the MSOA geography onto the zonal system within MiRANDA.

- 3.2.3 TAG recommends undertaking wider economic impact modelling at local authority level, however, to understand the impact of rail schemes it is important to capture the effect of catchment areas for stations to avoid over stating the benefits of a proposal. We have therefore developed the model at a more granular level capturing the station catchment area geography defined within MiRANDA and in so doing specifying a bespoke economic geography for each station/zone helping make the result more specific and relevant.
- 3.2.4 For each zone-to-zone movement, a mode-specific ATEM was calculated by dividing the total employment of the destination zone by a distance-decayed value of the generalised cost for that specific flow, with the distance decay parameter representing the fact that the strength of agglomeration diminishes with distance and the rate of this decay varies between industrial sectors. These values were then summed by destination zone and mode to determine a total ATEM per origin area per sector.
- 3.2.5 The calculation of the productivity impact of a transport scheme (in this case the tested GJT changes) is done by comparing the ATEM before and after the intervention and applying an elasticity of productivity to this change. This is then multiplied by the average gross value added (GVA) per worker of each industry before then being multiplied by the total employment within that sector in the origin zone. Estimates of regional GVA from the Office for National Statistics were combined with geographically equivalent numbers of jobs from the BRES to calculate an average GVA per worker for use in this calculation.
- 3.2.6 Finally, the sectoral productivity impacts were aggregated per industry to a station-to-station level and then further grouped to consider the impacts at a corridor level.
- 3.2.7 The thirteen corridors are listed below and presented geographically in Figure 1.

○ Birmingham and the Black Country	○ East Anglia
○ Coventry and Solihull	○ South Midlands
○ Yorkshire	○ South West
○ North West	○ Wales
○ Far North West	○ London
○ North East	○ Thames Valley
○ Scotland	

- 3.2.8 As well as the thirteen external corridors, we have considered the impact upon internal movements within the East Midlands region between the four key cities (Derby, Leicester, Lincoln, and Nottingham), presented as 'EM Key Stations Internal' within the following results.

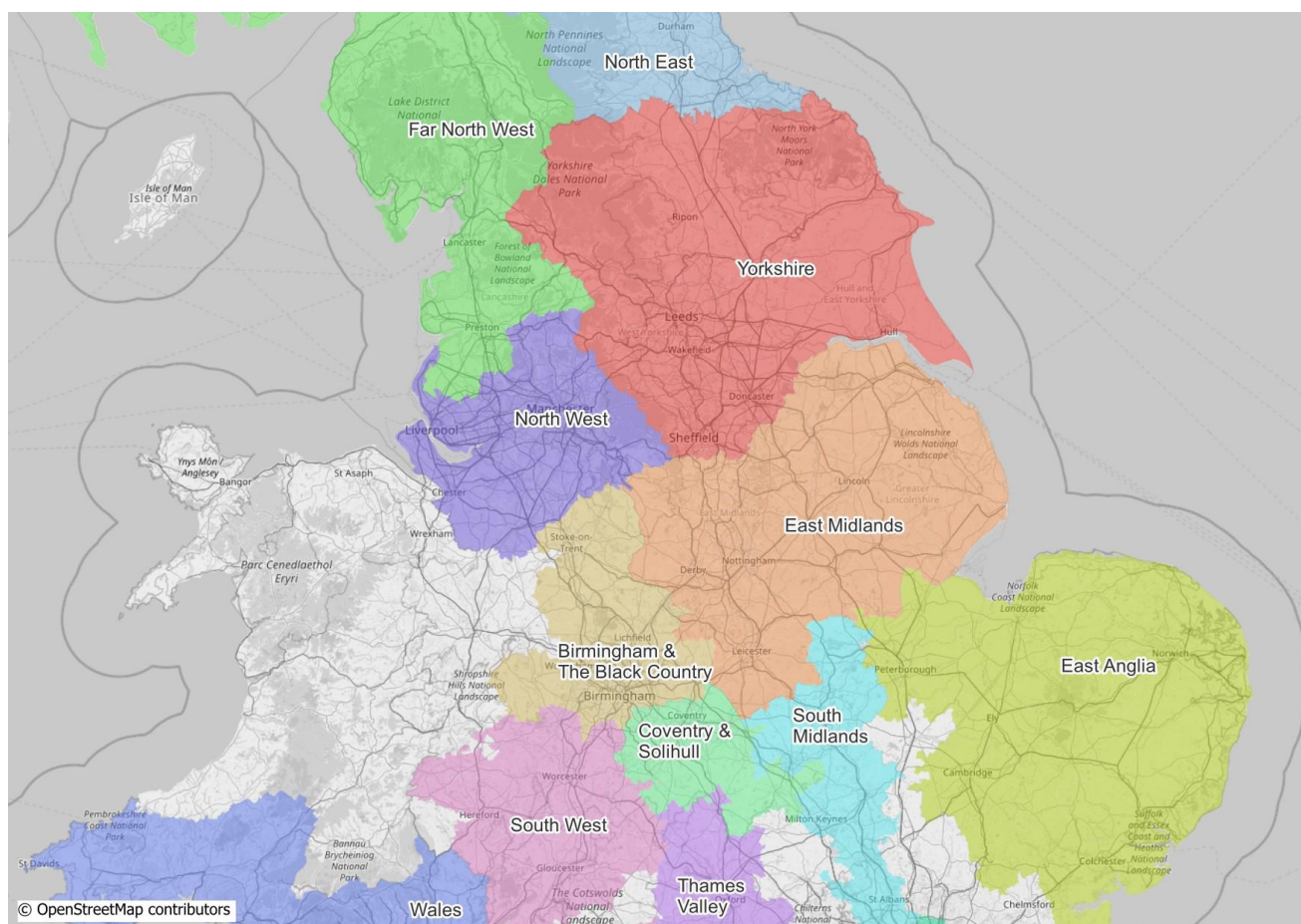


Figure 1. Corridor allocation

3.3 Model Tests

- 3.3.1 With a functioning model that could apply TAG guidance, a number of model tests were undertaken modelling both absolute and proportional changes in connectivity through changes to the GJT. These were:
- Do Something Test 1 = 5% GJT reduction
 - Do Something Test 2 = 10% GJT reduction
 - Do Something Test 3 = 15% GJT reduction
 - Do Something Test 4 = 20% GJT reduction
 - Do Something Test 5 = 25% GJT reduction
 - Do Something Test 6 = 30% GJT reduction
 - Do Something Test 7 = 5-minute GJT reduction
 - Do Something Test 8 = 10-minute GJT reduction
 - Do Something Test 9 = 20-minute GJT reduction
 - Do Something Test 10 = 30-minute GJT reduction
- 3.3.2 The rationale for applying these tests was to explore the range of results that might be obtained from different scales of services change in response to investment. The range of 5%



to 30% proportional GJT change was felt to be a plausible range for conventional rail interventions, though clearly different flows might be impacted in different ways for a specific package of measures. The absolute changes were also useful for exploring what the effect of specific intervention on one section of route might be on a wide range of flows. For example, a five-minute journey time reduction between Leicester and Birmingham would bring a consistent journey time reduction across a wide range of flows.



4. RESULTS

4.1.1 Within this chapter we present the results and provide analysis of our modelling work. In Section 4.2 we begin with a review of network level results, whilst in Section 4.3 onwards we move onto examine corridor level results and approaches to realising the agglomeration impacts estimated.

4.2 Headline network level results

4.2.1 Figure 2 presents all flows results for each of the four key cities and each of the ten tests, summing the data per corridor. This represents a hypothetical test to examine the upper limit of the GVA growth for each test.

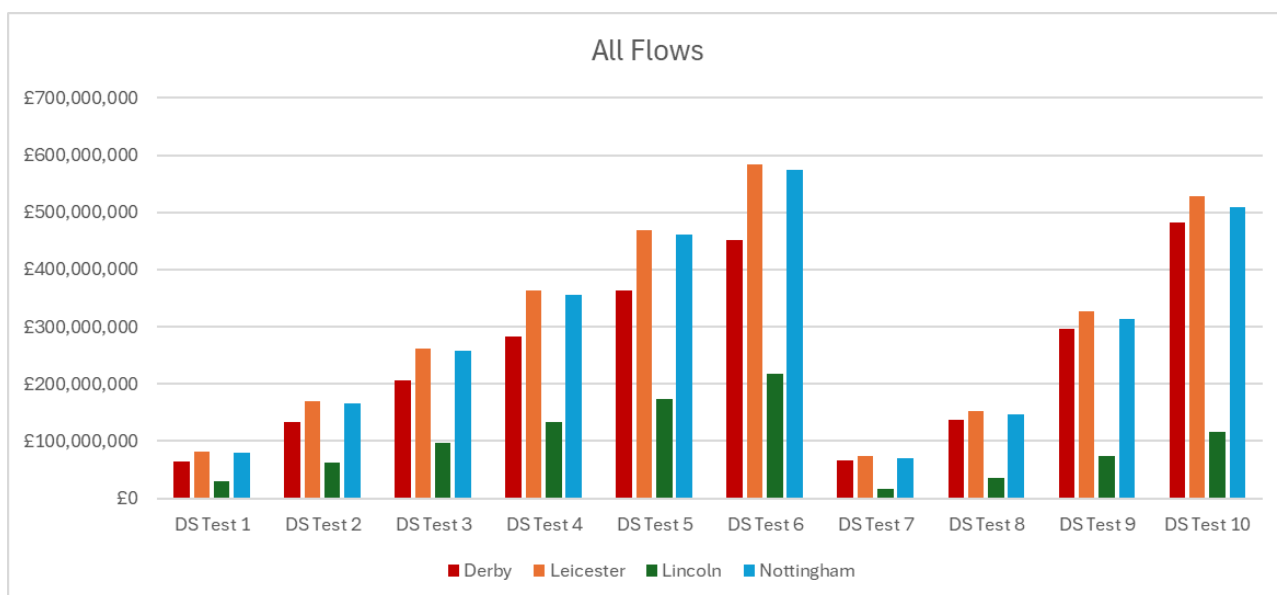


Figure 2. All flows results

4.2.2 The graph above provides a useful summary of the characteristics of the outputs of the modelling work. Key features include:

- That Nottingham and Leicester generate consistent results reflecting the comparable size of their economies.
- Lincoln has notably lower results reflecting both the smaller size of the economy but also the high generalised cost of accessing other stations from Lincoln. The nature of agglomeration modelling is that increases in agglomeration impacts are non-linear with changes pivoting from lower generalised costs typically generating larger agglomeration changes relative to an equivalent change for a larger generalised cost.
- That in all cases the potential agglomeration uplift is non-trivial, with the lowest results (DS1 5% GJT change and DS7 5-minute GJT change) both generating around £200m GVA per annum across the four cities rising to approaching £2bn per annum in the best performing test (DS6 30% GJT change) across the four cities, though it should be noted that in reality it would be very challenging to deliver a 30% GJT change across all flows modelled.

4.3 Corridor impacts – summary analysis

- 4.3.1 The following sections will focus specifically upon the results of Do Something Test 3, a 15% GJT reduction. This test has been chosen as 15% was felt to represent a plausible level of GJT reduction that could be achieved across multiple key flows.
- 4.3.2 Table 1 details the results of this test for each of the four key cities, outlining the GVA uplift per annum for each of the corridors. The top 10 links are highlighted in green, with the total value of these equalling **£400m** per annum.
- 4.3.3 The top 10 links are dominated by three corridors: Birmingham & The Black Country (covering a large part of the West Midlands), Yorkshire, and the North West (covering Greater Manchester and Merseyside), with the 10th place flow falling to Leicester-London.
- 4.3.4 Lincoln is showing a different pattern to that of the other three key cities, with London (rather than Birmingham), Yorkshire and the North West shown to be the most important corridors.

Table 1. GVA uplift per annum – 15% GJT reduction – corridor results (£m)

CORRIDOR	DERBY	LEICESTER	LINCOLN	NOTTINGHAM
EM Key Stations Internal	£10.84	£13.51	£6.02	£15.02
Birmingham & The Black Country	£65.68	£91.63	£4.02	£68.60
Coventry & Solihull	£7.39	£11.85	£0.25	£7.74
Yorkshire	£22.51	£23.43	£15.63	£28.49
North West	£25.25	£24.17	£16.69	£31.13
Far North West	£5.08	£5.70	£2.95	£6.90
North East	£6.01	£5.92	£4.48	£6.32
Scotland	£3.64	£3.37	£3.09	£3.59
East Anglia	£6.76	£11.85	£6.79	£11.70
South Midlands	£9.78	£17.49	£4.68	£15.01
South West	£9.33	£10.15	£4.34	£9.49
Wales	£3.81	£3.91	£1.47	£4.01
London	£14.44	£18.91	£16.45	£17.97
Thames Valley	£5.29	£5.65	£2.06	£5.10

- 4.3.5 The results are intuitive as they show the importance of improvement to links between the East Midlands and its adjacent regional economies. The scale of the benefits highlights the

limitations of current connectivity. The comparatively low placing of London in the rankings relative to the scale and proximity of the London economy highlights that Derby, Nottingham and Leicester all currently benefit from rapid and high frequency services to London. The exception to this is Lincoln where London is placed second (rather than third or fourth for the other cities) which highlights the contrast in service levels with a train every two hours in place and a higher journey time.

- 4.3.6 Lincoln is also unusual in that connectivity to Birmingham is less important than Yorkshire and the North West, though key parts of the Yorkshire economy such as Sheffield and Leeds are both closer and already served directly from Lincoln.
- 4.3.7 For the internal movements between the four key cities, this equals a total value of **£22.69m** per annum (when including each flow only once where the values mirror one another, as reflected in Table 2 below). Flows to and from Lincoln represent roughly a quarter of the total, with the remaining three quarters for the flows between Leicester, Nottingham and Derby. Additional value would be captured by extending the assessment to include a wider range of station pairs within the East Midlands.

Table 2. GVA uplift per annum – 15% GJT reduction – EM key cities internal movements (£m)

CITY	DERBY	LEICESTER	LINCOLN	NOTTINGHAM
Derby	-	£5.04	£0.67	£5.13
Leicester		-	£1.96	£6.50
Lincoln			-	£3.39
Nottingham				-

- 4.3.8 Whilst not possessing a place within the overall top 10 ranking across all corridors, the results still represent significant potential GVA uplifts. When calculated per individual city, the total value for internal movements ranks in 5th place for all but Leicester, where it ranks 6th. It should also be noted that relative to other external flows modelled, connectivity between Nottingham, Derby and Leicester by rail is comparatively good and also that the size of the economic mass being modelled (compared to the larger external corridors) is comparatively small.

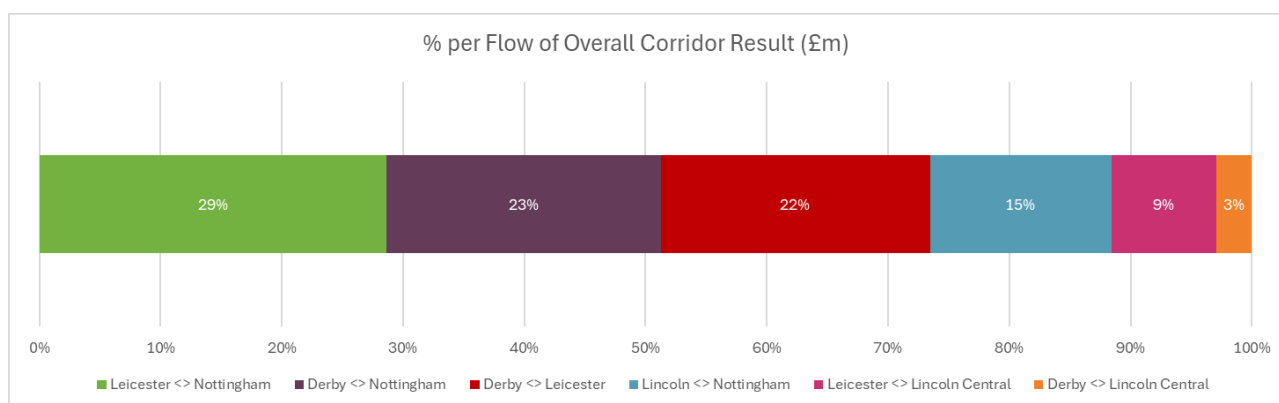


Figure 3. Proportion of EM Key Stations Internal result per flow

4.3.9 Table 3 presents the results for a selection of key cities within the corridors. These are targeted at key locations in the economy characterised by a high density of high value jobs which are well connected by rail and which would be likely to be the target of improvements in services as result of investment in the rail network.

Table 3. GVA uplift per annum – 15% GJT reduction – individual cities (£m)

CITY	DERBY	LEICESTER	LINCOLN	NOTTINGHAM
Leeds	£3.95	£3.60	£3.41	£4.69
Sheffield	£1.47	£1.75	£1.98	£2.31
Manchester	£8.19	£6.93	£8.85	£10.02
Central Birmingham	£9.63	£11.10	£1.66	£9.90

4.3.10 These results clearly show that cities within the Birmingham, Yorkshire, and the North West corridors have the potential to generate significant economic value from changes in rail connectivity.

4.4 Corridor impacts – ranking

4.4.1 Figure 4 and Table 4 display the top ten flows across the four key cities and all corridors, presenting their total GVA uplift per annum (in £m) as well as the percentage contribution to the total value of the top ten that each makes.

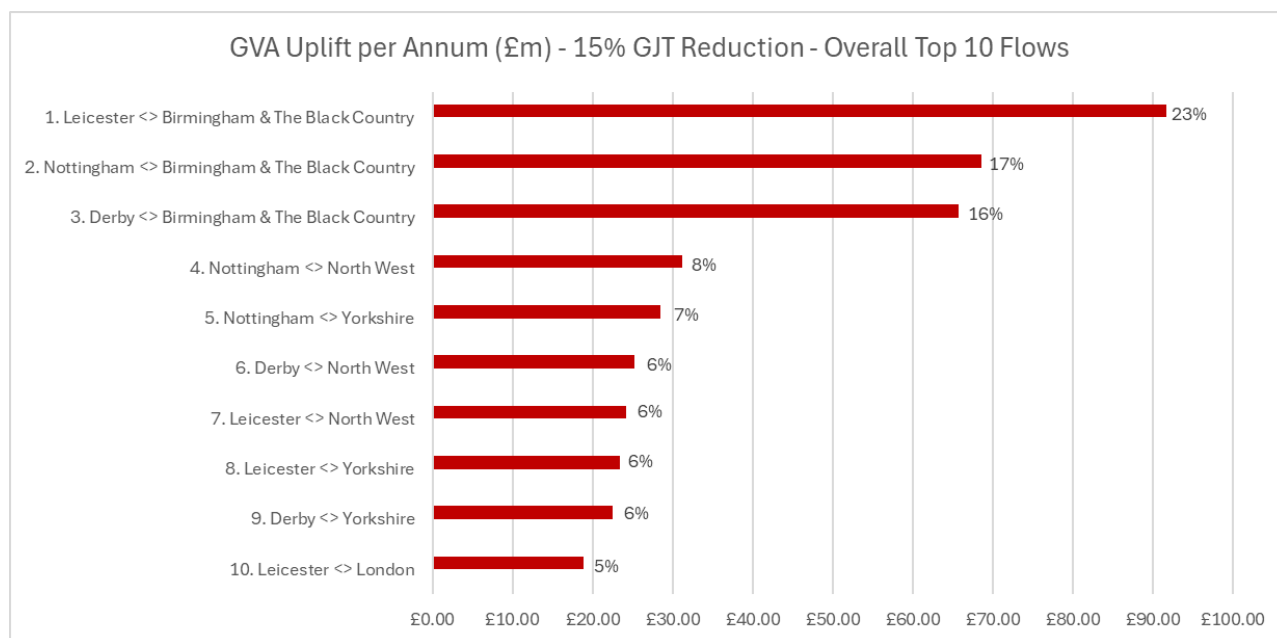


Figure 4. GVA uplift per annum – 15% GJT reduction – top 10 flows overall

Table 4. Corridor impacts - ranking

RANK	FLOW	GVA UPLIFT PER ANNUM (£M)	% OF TOP TEN SUM
1	Leicester <> Birmingham & The Black Country	£91.63	23%
2	Nottingham <> Birmingham & The Black Country	£68.60	17%
3	Derby <> Birmingham & The Black Country	£65.68	16%
4	Nottingham <> North West	£31.13	8%
5	Nottingham <> Yorkshire	£28.49	7%
6	Derby <> North West	£25.25	6%
7	Leicester <> North West	£24.17	6%
8	Leicester <> Yorkshire	£23.43	6%
9	Derby <> Yorkshire	£22.51	6%
10	Leicester <> London	£18.91	5%

- 4.4.2 The top ten flows sum to **£400m** per annum but of this almost 60% (£226m) can be assigned to the top three flows, and one corridor, alone – Leicester, Nottingham and Derby to/from Birmingham & the Black Country. This is a logical result given both the size and proximity of the West Midlands as a whole and Birmingham in particular to the East Midlands cities, and also the comparatively poor levels of connectivity that exist between the East and West Midlands.
- 4.4.3 To explore what level of change could realistically be delivered, an exercise has been undertaken to model the impact of more specific service changes, as opposed to the percentage reductions in GJT outlined previously.
- 4.4.4 Figure 5 outlines the specification of these service changes. These are largely based on the MYNE train service specification, developed as part of a response to the cancellation of HS2 to examine options for improved connectivity on the Birmingham – Leicester/Leeds corridor. The key outputs of MYNE include:
- Up to two additional fast trains per hour between Sheffield and Leeds
 - Increased frequency/capacity between Birmingham and Leicester, Derby, Nottingham and Leeds
 - Reduced journey times and improved reliability between Birmingham and Derby, Nottingham and Leeds, between Sheffield and Leeds and London, and Nottingham and London
 - Electrification to support reduced journey times and decarbonisation
- 4.4.5 As discussed in more detail below MYNE is one of two potential programmes designed to improve connectivity between Birmingham and the East Midlands, the other being Midlands Rail Hub East (MRH East). We have utilised the MYNE service specification as it provides enhanced services to the East Midlands relative to MRH, however in practice there is crossover between both proposals.
- 4.4.6 We have added to the core MYNE scope by extending a London – Sheffield service to Leeds and operating two additional services in the Hope Valley to improve links from Leicester and Derby to Manchester and from Nottingham to Manchester.

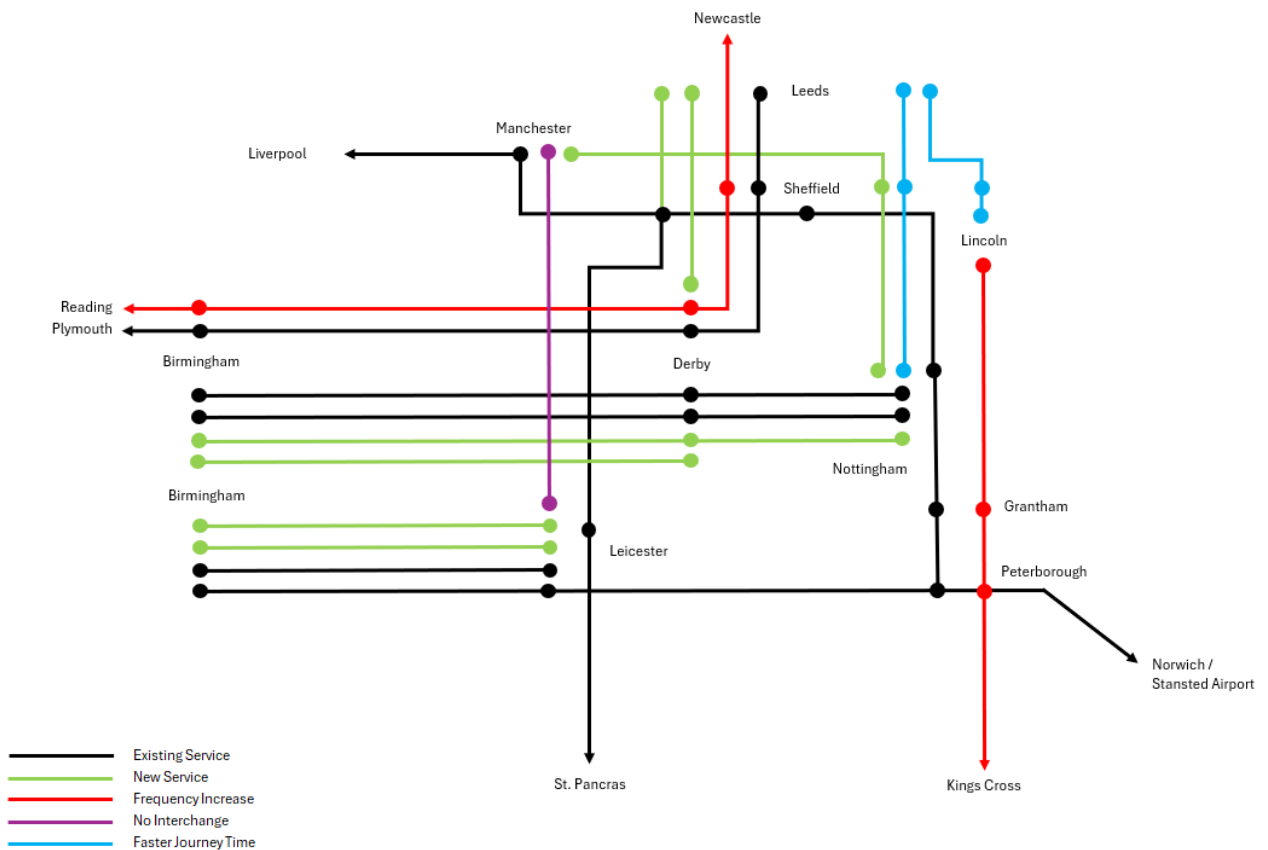


Figure 5. Assumed MYNE train service specification

- 4.4.7 MYNE and MRH have evolved in different ways, with MRH East being a long standing aspiration that as a result of the way in which HS2 evolved was paused, but following the cancellation of HS2 is now being re-examined, whilst MYNE was a direct response to the cancellation of the Eastern Leg of HS2 and the opportunity to consider utilising available capacity in Birmingham Curzon Street station.
- 4.4.8 Midlands Rail Hub is an ambitious rail improvement scheme to deliver up to 300 additional daily trains on the rail network into and out of Birmingham as well as more frequent or new rail links for several locations, including key stations in the East Midlands. This will be realised through the Eastern portion of the scheme, with the creation of a chord allowing access from Birmingham Moor Street (where in contrast MYNE is dependent on access to Curzon Street station) to the routes towards Derby and Leicester, allowing direct access for trains to Leicester, Derby and Nottingham.
- 4.4.9 The table below outlines for key links the proposals as part of both schemes.

Table 5. MRH East and MYNE Proposals

LINK	MRH EAST	MYNE
Birmingham – Derby	+2tph	+3tph
Birmingham – Leicester	+2tph	+2tph
Birmingham - Nottingham	+1tph	+1tph
Birmingham - Leeds	+1tph	+1tph

- 4.4.10 Both schemes have the potential to deliver on the emerging priorities of this analysis, improving connectivity between the East Midlands and Birmingham, and between the East Midlands and Yorkshire and as either scheme evolves there may be opportunity to amend their service specifications.
- 4.4.11 For each of the top ten flows outlined in Figure 4, the following sections will provide further detail, summarising the current train service to key stations within the corridor, the results from the 15% GJT reduction modelling and the results from the modelling of more specific service changes, giving consideration to how such GVA uplifts could be delivered in practice through the proposed MYNE infrastructure and train service changes.
- 4.4.12 A summary table of the results of the modelled MYNE specification can be found in Appendix A.
- 4.4.13 Whilst we are unable to attribute costs associated with these specific service changes and infrastructure interventions, the modelling results provide an indication of the scale of benefits that can be delivered from current rail industry and government work on the future development of these corridors.
- 4.4.14 In the sections below we provide more detailed commentary on the corridors.

Leicester <> Birmingham and the Black Country

Current Service Summary

Leicester to/from Birmingham New Street - 2 direct trains per hour provided by Cross Country, approximate journey times of 48-60 minutes.

- 4.4.15 In first place are flows between Leicester and Birmingham & the Black Country, generating £91.63m per annum GVA uplift and 23% of the sum value of the top ten flows.
- 4.4.16 As previously stated, the dominance of this corridor in the overall results shows the importance of improving links between the key East Midlands cities and Birmingham, with the scale of the potential benefits highlighting the current limitations in connectivity.
- 4.4.17 The current service between Leicester and Birmingham is limited to two direct trains per hour, with an almost even half hourly departure interval. However, journey times are poor at

around an hour, and the service provided also acts as a local stopping service between Leicester and Nuneaton. Services are frequently overcrowded with most services being operated by three car Class 170s. The service provided compares poorly with Leicester's high speed service to London and with the equivalent service offered between Derby and Birmingham.

- 4.4.18 Scope for realising the potential GVA uplifts could be found through a range of improvements, including electrification (to improve acceleration and top speed between stations), increased service frequency and alterations to stopping patterns to provide "fast" and "slow" services.
- 4.4.19 As part of the MYNE specification, an increase in frequency from two to four trains per hour between Leicester and Birmingham was modelled, equivalent to a 12% reduction in the GJT of the flow, with the results demonstrating a potential £27.76m per annum GVA uplift.
- 4.4.20 To deliver this service increase would require both infrastructure and service operation interventions, including additional tracking or platforms at Water Orton to facilitate an increase in train service quantum passing through, freight loops at Hinckley, reduction in platform occupation times at Leicester, and potential need for lower junction margins to the south of Leicester station.

Nottingham <> Birmingham and the Black Country

Current Service Summary

Nottingham to/from Birmingham New Street - 2 direct trains per hour provided by Cross Country, approximate journey times of 75 minutes. *(Further options available, though requiring an interchange at Derby or Leicester and associated additional journey time)*

- 4.4.21 In second place are flows between Nottingham and Birmingham & the Black Country, equalling £68.60m per annum GVA uplift and 17% of the sum value of the top ten flows. Whilst approximately £23m lower in value than Leicester's comparative value, this flow still represents a significant potential GVA uplift.
- 4.4.22 Currently, the core service between Nottingham and Birmingham is formed of two direct trains per hour, one operating purely between Nottingham and Birmingham New Street and a second that extends to Cardiff Central, with differing stopping patterns but comparative journey times. The current service has a number of constraints. Services are typically formed of only three coaches, meaning that overcrowding is commonplace, whilst the maximum speed of the trains of 100mph means that they cannot take advantage of the higher line speed on the section from Derby to Birmingham. In addition, the service is required to reverse at Derby adding journey time, an issue that could be resolved by operating services directly between Stenson Junction and Sheet Stores Junction. Service frequency is also poor when compared to equivalent city pairs such as Leeds – Manchester.
- 4.4.23 The MYNE proposals specify a frequency increase as well as a journey time reduction through the introduction of express services between Nottingham and Birmingham calling only at Derby and either Tamworth or Burton-on-Trent, to support existing services with intermediate station calls. The specification is focused on high frequencies and journey time

improvements through changes in stopping patterns on these routes which is appropriate for comparatively short inter-regional journeys.

- 4.4.24 The modelling showed this to be equivalent to a 10% GJT reduction on the flow producing a potential £21.17m GVA uplift per annum.
- 4.4.25 As with the Leicester to Birmingham corridor, this would be delivered through a range of interventions, including increase from 100mph to 125mph running, a reduction in headways to 3 minutes, interventions and upgrades at Kingsbury Junctions and Burton-on-Trent loops, as well as increased platform capacity at Derby.

Derby <> Birmingham and the Black Country

Current Service Summary

Derby to/from Birmingham New Street - 3 direct trains per hour provided by Cross Country, with a fourth service every other hour. Varying journey times in a range of 30 – 50 minutes.

- 4.4.26 In third place are flows between Derby and Birmingham & the Black Country, with a potential GVA uplift per annum of £65.68m, representing 16% of the value of the overall top ten.
- 4.4.27 This value is almost equal to that of Nottingham to/from Birmingham & the Black Country, with the smaller size of the Derby economy being offset by its closer proximity to Birmingham. In addition to the Birmingham – Nottingham and Nottingham – Cardiff services outlined previously, Derby is also served hourly by Cross Country's long distance Scotland – Plymouth service, a service that frequently suffers from delays and overcrowding making the Derby – Birmingham journey unattractive, though the average speed is high making the service appear attractive on paper.
- 4.4.28 MYNE proposes a significant increase in frequency between Derby and Birmingham, from three to six trains per hour covering services to both New Street and Curzon Street. Journey time reductions are also proposed through the electrification of Birmingham to Derby and 125mph capable electric rolling stock for all passenger services from Birmingham.
- 4.4.29 The modelling results demonstrated this to reflect a 22% reduction in GJT and a GVA uplift of £45.19m per annum, the highest single year impact of the service changes tested.
- 4.4.30 Combined with the results for Leicester and Nottingham to Birmingham demonstrates that whilst the overall GVA uplift is lower than that from the 15% GJT reduction test (£94m vs £226m), the Birmingham corridor presents a significant opportunity for investment.

Nottingham <> North West

Current Service Summary

Nottingham to/from Manchester Piccadilly – 1 direct train per hour taking approximately 1 hour and 50 minutes, the East Midlands Railway Norwich – Liverpool Lime Street service.

(One additional service option, indirect with a change at Stoke-on-Trent with a journey time in the region of two hours).

Nottingham to/from Liverpool Lime Street – As above, 1 direct train an hour on the EMR Norwich – Liverpool service, taking around 2hrs 45 minutes. *(Several additional indirect service options with varying journey times competitive to that of the direct service).*

Nottingham to/from Crewe – 1 direct train per hour offered by East Midlands Railway with a journey time of approximately 1hr 40 minutes.

Nottingham to/from Chester – One indirect service option per hour requiring an interchange at Crewe and taking approximately two and a half hours.

- 4.4.31 Whilst still equalling £31m per annum the fourth place flow in the overall top ten represents a marked decrease in potential GVA uplift relative to the top three, as well as a different corridor – Nottingham to/from the North West.
- 4.4.32 Whilst the sum of the GVA uplift from fourth to tenth place equals 43% of the overall top ten sum, the individual proportion per flow is now of much lower value, ranging from a maximum of 8% for this particular flow, down to 5% in tenth place. This highlights the need to prioritising interventions based upon groups of flows in order to maximise the potential benefits achieved.
- 4.4.33 Though when considered in combination with flows from Derby and Leicester, the potential GVA uplift associated with the North West corridor is approximately £80m per annum (20% of the overall top ten sum), highlighting its importance as an adjacent regional economy to the East Midlands.
- 4.4.34 The current service options to key stations within the corridor have been summarised above, with EMR's Norwich-Liverpool Lime Street service also offering calls at Stockport and Warrington Central, providing further points of connectivity between Nottingham and the North West.
- 4.4.35 Whilst not part of the core MYNE specification, as part of our modelling we have tested the impact of operating an additional service from Nottingham to Manchester via the Hope Valley, increasing the service provision from one to two trains per hour.
- 4.4.36 The results showed this to reflect a modest 6% reduction in GJT with a £3.41m GVA uplift per annum.
- 4.4.37 Unlocking capacity on the Hope Valley Line is complex, a third fast path is in principle available but using it is hampered by capacity issues in Sheffield and Manchester. Across our proposals a fourth fast path would be required which would be likely to trigger the need for further infrastructure and again would be hindered by capacity in the Manchester area.

Nottingham <> Yorkshire

Current Service Summary

Nottingham to/from Leeds – One direct train per hour operated by Northern, taking approximately two hours. *(Additional service options of comparative or lower journey times however requiring at least one interchange).*

Nottingham to/from Sheffield – Two direct trains per hour with journey times in the region of 55 minutes, one operated by Northern (Nottingham-Leeds service) and one by East Midlands Railway (Norwich – Liverpool Lime Street service).

Nottingham to/from York – Varying service options – either one or two services an hour with one or two interchanges, with journey times ranging from 1hr 50 minutes to 2hrs 15 minutes.

- 4.4.38 Nottingham's third and final appearance in the top ten is in fifth place for flows to/from Yorkshire, with the results of the 15% reduction in GJT demonstrating a potential £28.5m GVA uplift per annum (7% of the overall top ten sum).
- 4.4.39 Though as with the North West, if this individual result is considered in conjunction with all three appearances of this corridor in the top ten, the potential GVA uplift associated with Yorkshire is approximately £75m per annum (19% of the overall top ten sum), again cementing its importance as a key adjacent regional economy.
- 4.4.40 Current services on the route are constrained by the low capacity of the trains used, with Northern using two car trains, though EMR have recently extended services to five car operation, an increase from the previous four car operation. Service frequency between Nottingham and Sheffield in particular is low considering the proximity of the two cities, whilst average speeds (in the region of 46mph) are also poor.
- 4.4.41 Up to two additional fast trains per hour between Leeds and Sheffield are proposed as part of MYNE, with initial capacity analysis showing minimal infrastructure interventions would be required to deliver this. As such, we have assumed a journey time reduction between Nottingham and Leeds through the existing Leeds-Nottingham service operated by Northern assuming one of these new fast paths between Sheffield and Leeds.
- 4.4.42 A ten minute reduction in journey time translates to an 8% reduction in the GJT of the flow and a modest £2.38m uplift in GVA per annum. It is acknowledged that this is a modest change in both GJT and GVA.

Derby <> North West

Current Service Summary

Derby to/from Manchester Piccadilly – Core service of two trains per hour, with then a third service every other hour, however all indirect with interchanges at either Sheffield or Stoke-on-Trent, with overall journey times of approximately 1hr 35 minutes.

Derby to/from Liverpool Lime Street – Varying service options - typically two an hour with either one or two interchanges with journey times ranging from 1hr 40 minutes to 2hrs 20 minutes.

Derby to/from Crewe – 1 direct train per hour offered by East Midlands Railway with a journey time of approximately 1hr 10 minutes.

Derby to/from Chester – One indirect service option per hour requiring an interchange at Crewe and taking approximately two hours.

- 4.4.43 Sixth place in the ranking falls to flows between Derby and the North West, with a GVA uplift of £25m per annum (6% of the overall top ten sum).
- 4.4.44 As outlined above, current connectivity between Derby and key cities within the North West region is limited to service options requiring interchanges and with extended journey times. Manchester can be reached from Derby via either Stoke-on-Trent or Sheffield, with Sheffield offering the most frequent service options.
- 4.4.45 As with Nottingham, whilst not part of the core MYNE specification we have tested the impact of operating an additional service from Leicester to Manchester via the Hope Valley, which would call at Derby and would fill a long-standing missing link in East Midlands connectivity. By removing an interchange and reducing journey times the impact is substantial, resulting in a 28% reduction in GJT, the most significant of the specific service changes modelled, and a £20.51m GVA uplift per annum.

Leicester <> North West

Current Service Summary

Leicester to/from Manchester Piccadilly – Two indirect trains per hour with one interchange at either Sheffield or Nuneaton, with overall journey times of approximately two hours.

Leicester to/from Liverpool Lime Street – Varying service options - typically two an hour with either one or two interchanges with journey times ranging from 2hrs 30 minutes to 3 hours.

Leicester to/from Crewe – 1 indirect train per hour with an interchange at Nuneaton and a journey time of approximately 1hr 40 minutes.

Leicester to/from Chester – One indirect service option per hour requiring two interchanges at Nuneaton and Crewe and taking approximately two and a half hours.

- 4.4.46 Seventh place in the ranking also falls to the North West, this time flows to/from Leicester, with a GVA uplift of £24m per annum (6% of the overall top ten sum).
- 4.4.47 The current service offering from Leicester to key cities in the North West is similar to that outlined above for Derby. The most attractive route to Manchester is to interchange at Sheffield with a journey time of approximately two hours.

- 4.4.48 As outlined above, an additional service from Leicester to Manchester via the Hope Valley has been modelled, which from Leicester itself would result in a 27% reduction in GJT and a £14.32m GVA uplift per annum.
- 4.4.49 However, as previously mentioned delivering this and the proposed Nottingham – Manchester service would be complex as the Hope Valley Line as currently configured can only reasonably accommodate one additional passenger service each hour without further interventions.

Leicester <> Yorkshire

Current Service Summary

Leicester to/from Leeds – One service per hour, indirect with an interchange at Derby with an approximate journey time of two hours.

Leicester to/from Sheffield – Two direct services per hour, taking between 55 and 65 minutes.

Leicester to/from York – One indirect service per hour requiring an interchange at Derby, with journey times ranging from 2 hours to 2 hours 20 minutes.

- 4.4.50 Eighth place in the top ten sees the second occurrence of the Yorkshire corridor, this time for flows to/from Leicester, with a GVA uplift of £23.5m per annum (6% of overall top ten sum).
- 4.4.51 Leicester has a good service to South Yorkshire with two trains per hour to Sheffield, but a poorer service to Leeds, with a need to change trains at Sheffield.
- 4.4.52 As with flows from Nottingham-Yorkshire, the additional fast paths between Leeds and Sheffield proposed as part of MYNE have been used to model a reduction in journey time and removal of the requirement to interchange when travelling from Leicester to Leeds, through the linkage of a new Leeds to Sheffield fast service with the existing Sheffield to St. Pancras service.
- 4.4.53 This would produce a GJT reduction of 21% and a modest GVA uplift of £5.93m per annum.

Derby <> Yorkshire

Current Service Summary

Derby to/from Leeds – One direct service per hour offered by Cross Country taking approximately 75 minutes. Has a second service option every other hour (taking approximately 1hr 45 minutes), interchanging at Sheffield onto the Cross Country Newcastle-Reading service that operates at a two-hourly frequency.

Derby to/from Sheffield – Core service of three direct trains an hour operated by either East Midlands Railway or Cross Country, with a fourth service every other hour. Journey times in the range of 28-35 minutes.

Derby to/from York – One direct service per hour, with a second service every other hour, both operated by Cross Country with journey times of approximately 1hr 45 minutes.

- 4.4.54 Ninth place in the ranking falls to the third appearance of the Yorkshire corridor, this time flows to/from Derby, with a GVA uplift of £22.5m per annum (6% of overall top ten sum).
- 4.4.55 Services between Derby and Sheffield are good with three and sometimes four services per hour, albeit not spaced at even intervals. North of Sheffield two services per hour operated for many years with Cross Country operating one service via Leeds and York and another via Doncaster and York both heading to Newcastle with one heading to Scotland. However since COVID the Reading – Newcastle via Doncaster has dropped in frequency to a handful of services each day, though Cross Country are restoring a number of services from December 2025.
- 4.4.56 By assuming the same service intervention as outlined above for Leicester – Leeds (the combination of a new fast path between Leeds and Sheffield (as per MYNE) with an existing Sheffield to St. Pancras service), this would increase the frequency of services from Derby to Leeds from one to two trains per hour, translating into an 8% reduction in GJT and a £1.87m per annum GVA uplift.

Leicester <> London

Current Service Summary

Leicester to/from London – Four direct trains per hour operated by East Midlands Railway, with journey times in the range of 64-75 minutes.

- 4.4.57 The final position in the top ten ranking falls to flows between Leicester and London, with a potential GVA uplift of approximately £19m per annum, representing only 5% of the top ten sum.
- 4.4.58 As outlined previously, the comparatively low placing of London in the rankings (relative to the scale of the economy) and only one appearance in the top ten highlights that Derby, Nottingham and Leicester all currently benefit from rapid and high frequency services to London.
- 4.4.59 Whilst not modelled specifically as part of the MYNE specification testing due to the good service provision currently offered, it is assumed that Leicester to London flows will benefit from other interventions. Despite the postponement of Midland Mainline electrification, the services will experience journey time benefits through the operation of electric rolling stock south of Leicester and 125mph running south of Bedford.

4.5 Corridor impacts – prioritisation

- 4.5.1 As mentioned previously, in order to maximise the potential GVA uplift that could be achieved, it is necessary to group flows / corridors as a means of prioritising interventions.
- 4.5.2 As such, we have grouped the overall top ten flows into the following three priorities, including a consideration of the deliverability of the uplifts in practice.

Priority 1

Flows: Leicester, Derby and Nottingham to/from Birmingham & the Black Country

Summed GVA uplift per annum:

15% GJT reduction - £226m

MYNE specification - £94m

- 4.5.3 The analysis shows that the three most important economic opportunities to drive agglomeration benefits come from links to Birmingham & The Black Country from Leicester, Nottingham and Derby respectively. Leicester, Nottingham and Derby are approximately 55km, 73km and 57km away from Birmingham city centre as the crow flies, bringing them within a one-hour travel horizon for potential day-trip business travel and commuting. These distances are short enough to support a wide range of economic linkages.
- 4.5.4 The economy of Birmingham & The Black Country combines a high manufacturing intensity—notably in automotive and advanced engineering—with a large and growing business, professional and financial services sector centred on Birmingham’s core. Around 13.6% of GVA in Birmingham & the Black Country comes from manufacturing (vs 10.0% nationally) and it is home to the UK’s densest automotive supply chain anchored by Jaguar Land Rover and a cluster of metal, component and low-carbon vehicle firms. The East Midlands shares a strong manufacturing base but with distinctive specialisms in aerospace, food, textiles and logistics. Table 5 below summarises the comparative industrial mix, aggregated into the five sector groups (a full table disaggregated by sector can be found in Appendix B).

Table 6. GVA by sector comparison, 2018, 2018 prices

	DERBY	LEICESTER	LINCOLN	NOTTINGHAM	REST OF EAST MIDLANDS	EAST MIDLANDS TOTAL	BIRMINGHAM	REST OF BLACK COUNTRY	BIRMINGHAM & BLACK COUNTRY TOTAL	GREAT BRITAIN
Manufacturing	22.4%	12.0%	12.1%	4.0%	17.7%	15.7%	14.0%	13.5%	13.6%	10.0%
Construction	4.6%	3.4%	6.3%	4.0%	7.9%	6.7%	5.5%	7.3%	6.8%	6.1%
Consumer Services	17.8%	20.9%	21.4%	26.8%	24.7%	23.9%	21.4%	26.2%	24.7%	24.7%
Producer Services	26.8%	27.6%	17.3%	28.8%	22.9%	24.3%	29.4%	24.1%	25.7%	33.7%
Public Sector	22.7%	28.7%	32.3%	27.5%	16.9%	20.3%	24.5%	22.3%	23.0%	18.2%
Other	5.6%	7.2%	10.7%	8.9%	9.8%	9.1%	5.3%	6.5%	6.1%	7.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

- 4.5.5 These differences translate into complementary export and supply-chain profiles. The West Midlands exported goods worth approximately £34 billion in the year ending Q3 2023, driven by automotive, machinery and engineering equipment, while the East Midlands exported around £27 billion, led by aerospace, food, and manufactured components. Both regions therefore rely heavily on goods trade, contrasting with the more service-oriented English average.

- 4.5.6 These patterns imply comparative advantage in related but distinct sectors, suggesting the regions gain from two-way trade in intermediates (e.g. precision components, design, testing, and control systems) and from specialisation within supply chains. Faster, more reliable rail connections increase market potential for firms on both sides, stimulating intra-industry competition via greater variety and downward pressure on prices for consumers. The same forces drive the productivity uplifts captured in the wider-economic-impact modelling.
- 4.5.7 Closer integration should enhance two-way intermediate trade in manufacturing (auto/aero supply chains, engineering and testing) and reinforce existing intra-company connections—which are often hidden in standard trade data. Many national and international firms already maintain offices or production sites in both regions and rely on the transport network for collaboration. Deloitte, for example, operates major offices at Four Brindleyplace in Birmingham city centre and Castle Boulevard in central Nottingham—each within a short walk of the main railway station. Alstom provides an engineering parallel, with corporate offices on Broad Street, Birmingham and its manufacturing works at Litchurch Lane, Derby. These examples show how improved inter-city rail strengthens collaboration in both professional and engineering/manufacturing sectors.
- 4.5.8 While most commuters into Birmingham currently travel from within the WMCA area, shorter inter-urban journey times would extend feasible commuting from Leicester and Derby, supporting wider labour-market integration.
- 4.5.9 Overall both the quantitative and qualitative evidence highlights why improving links to the West Midlands has performed best across the modelled corridors. There is a large and diverse economy in the West Midlands, whose connectivity with the East Midlands, especially Leicester, is very poor, despite being physically adjacent and in close proximity. This is a missed opportunity for both the regional and national economy, not just in terms of business to business agglomeration interaction but also commuting links and leisure markets. Our work has demonstrated that this needs to be the top priority for further investment.

Priority 2

Flows: Leicester, Derby and Nottingham to/from North West

Summed GVA uplift per annum:

15% GJT reduction - £80.5m

MYNE specification - £38m

- 4.5.10 The analysis identifies that rail connectivity between the East Midlands cities and the North West, particularly Greater Manchester, represents one of the most significant opportunities for wider economic benefits. At around 110-130 km from Derby and Nottingham, Manchester sits just beyond daily-commuting range, although there are corridor connections that provide important commuting links such as from Buxton and Chapel-en-le-Frith to Manchester. Manchester is within easy reach for same-day business travel. The North West's large, diverse economy – spanning advanced manufacturing, digital, and professional services – complements East Midlands strengths in aerospace, logistics and food.
- 4.5.11 The economic output of the North West is skewed towards manufacturing with 14.6% of its GVA earned from this (compared to 10.0% across the UK) – with particular strengths in wood, chemicals and minerals. Greater Manchester in particular, is a large and diverse economy and



a close neighbour to the East Midlands. It combines a strong advanced-manufacturing base (notably in materials science and pharmaceuticals) with major clusters in digital and creative industries, financial and professional services, and health and life sciences. In GVA terms it is the largest economy outside London and the South East, with its manufacturing and goods-export intensity well above the English average. The region also acts as a cultural and consumer hub for much of the North of England, anchored by Manchester's strong retail, sporting and cultural economy.

- 4.5.12 The East Midlands shows complementary strengths. While also manufacturing-intensive, it specialises in aerospace and power systems (Derby), food and drink production, and logistics centred on East Midlands Airport and the Strategic Rail Freight Interchange. These contrasts create scope for two-way trade in intermediate goods and services—for example, between power-systems and northwest auto supply chains, or in engineering and testing services. Firms across the two regions share many clients and often contract suppliers, consultancies and logistics partners from the other side of the corridor. For example, Experian in Nottingham supplies credit decisioning and analytics to The Co-operative Bank in Manchester — a well-documented cross-regional client–supplier relationship.
- 4.5.13 Rail connectivity supports both business-to-business trade and labour-market integration. Greater Manchester's extensive professional-services and digital sectors already serve national clients, and better connectivity would enable East Midlands firms to access this ecosystem more readily, while providing Manchester businesses with a deeper supplier and talent base to the south-east.
- 4.5.14 Manchester's cultural and airport hubs serve both business and leisure markets across the Midlands; improved rail access would enhance these shared assets.
- 4.5.15 Like the West Midlands the North West represents a large economy, provided with poor connectivity from the East Midlands, however addressing this is not easy with the Peak District representing a physical barrier causing most transport routes to have to deviate to the north or south. Our work has shown that there is a case for improvement which should be pursued, however the scale of change that can be realistically achieved is more limited.

Priority 3

Flows: Leicester, Derby and Nottingham to/from Yorkshire

Summed GVA uplift per annum:

15% GJT reduction - £74.5m

MYNE specification - £10m

- 4.5.16 The East Midlands maintains strong economic and cultural ties with Yorkshire, particularly through connections between Derby, Nottingham and Leicester and the cities of Sheffield, Leeds and York. Sheffield is the nearest major Yorkshire centre to the East Midlands – around 55 km from Derby and 65 km from Nottingham – placing it well within a one-hour rail catchment. These distances support meaningful inter-regional business, commuting and consumer linkages.
- 4.5.17 Leeds is the UK's second-largest financial and legal centre after London and is home to a large cluster of banking, insurance, and corporate headquarters. Leeds earns 10.8% of its GVA from

financial and insurance services compared to 2.1% across the East Midlands and 7.1% across the UK as a whole. Sheffield City Region retains a significant specialism in advanced manufacturing and materials through its Advanced Manufacturing Park and research institutions. These activities are complemented by strong universities, health-tech innovation and a growing creative sector across Leeds and Sheffield. Sheffield's advanced-manufacturing specialisms align with Derby's aerospace and engineering base, while Leeds's financial cluster complements professional-services activity in Nottingham and Leicester. These complementarities support two-way trade and knowledge exchange. Inter-regional supply chains are common – for instance, East Midlands engineering firms supplying into Sheffield's advanced-manufacturing ecosystem, and Leeds-based consultancies serving clients in Nottingham and Leicester.

- 4.5.18 Enhanced services between Derby and Sheffield could integrate north Derbyshire and south Yorkshire labour markets and reinforce university-industry collaboration. These improvements would also reinforce substantial two-way leisure and visitor flows, consistent with the modelled high corridor benefits.
- 4.5.19 Yorkshire is an important adjacent economy with which the East Midlands has rather mixed links. Connectivity to South Yorkshire is good from Derby and Leicester but poorer from Nottingham given its proximity and size. Sheffield does however represent a barrier in the current service structure with only one service per hour heading from Leicester and Derby to Leeds and one from Nottingham. Opportunities exist to link current proposed services and enhance connectivity.

4.6 Corridor impacts – Value for Money

- 4.6.1 The value for money of the corridor priorities has been estimated at a high level, based on the likely revenue uplifts (based on changes in demand) and the order of magnitude of the infrastructure investments that might be required to deliver the service improvements. This is a qualitative statement of the likely value for money, as to identify and develop costs for infrastructure schemes would be disproportionate for this strategic type of work.
- 4.6.2 Of the three priorities outlined above, improvements to flows to/from Birmingham and the Black Country are likely to be the most expensive to realise but would represent the best value for money due to the importance of Birmingham to the East Midlands.
- 4.6.3 Splitting the corridor into two groupings, the modelling results show Nottingham and Derby to/from Birmingham to produce the largest absolute value of GVA uplift to the East Midlands but would also deliver improvements to an extensive range of non-East Midlands flows such as Sheffield, Leeds and the North East to Birmingham and then beyond to Bristol and the South West. The implication of this is that the cost of the required upgrades would be shared across this range of routes, raising the value for money of the specific Nottingham/Derby to Birmingham portion.
- 4.6.4 The analysis shows flows between Leicester and Birmingham as having the potential to produce significant GVA uplifts, however the scope of benefits realisation on additional non-East Midlands related flows is more limited, being focused on flows including Cambridge and Stansted Airport. However, due to the differing level of interventions required, the costs to realise such benefits are likely to be lower and so the value for money may not be detrimentally impacted. The enabler for such upgrades within Birmingham would be the

delivery of Midlands Rail Hub East or Curzon Street station, which would provide additional terminal capacity, allowing the uplift in frequency that also supports reduced journey times. Both of these are schemes where the cost would be shared across many other routes and so the value for money for Birmingham to/from Leicester begins to look more reasonable.

- 4.6.5 The second priority corridor is the North West, which has the potential to generate significant benefits if both additional services could be realised, however delivery of this would be particularly complex due to capacity issues in Sheffield and Manchester coupled to a lack of line capacity for additional fast services on the Hope Valley Line. One additional path could perhaps be introduced, subject to the delivery of other planned schemes in the area or the routing of a new service to avoid a call at Sheffield station. However, to unlock a fourth path would trigger the requirement for further infrastructure, including passing loops for freight, raising the cost significantly. Therefore, the value for money of this priority corridor is likely to be lower than that of the Birmingham corridor and much more sensitive to the level of infrastructure intervention.
- 4.6.6 The final priority corridor is flows to/from Yorkshire, which is likely to represent medium to high value for money as much of the benefit can be achieved by linking services to remove interchanges. Delivery would require additional capacity, for example in the Leeds area, but this is likely to be delivered as part of other schemes such as upgrades at Leeds station. This would benefit multiple flows across the north, sharing the scheme costs.
- 4.6.7 The table below summarises the qualitative value for money position.

Table 7. Summary of qualitative value for money by corridor

CORRIDOR	QUALITATIVE VALUE FOR MONEY
Nottingham/Derby – Birmingham	High
Leicester – Birmingham	Medium
Nottingham – North West	Low
Leicester/Derby – North West	Low
Nottingham – Yorkshire	Medium/High
Leicester/Derby – Yorkshire	Medium/High

5. COVENTRY: EAST MIDLANDS CITY CONNECTIVITY ECONOMIC ANALYSIS

- 5.1.1 Improved connectivity between Nottingham, Leicester and Coventry is a priority for TfEM, with proposals having been developed to improve rail links with direct services operating via a new dive under at Nuneaton, however these schemes have not been progressed to date. To explore this, additional analysis has been provided to support a fuller understanding of the options for improving rail connectivity between the East Midlands and Coventry. This addendum complements the original report and should be considered alongside its initial findings.
- 5.1.2 Chapter 4 outlines the results of our agglomeration modelling, focusing on Do Something Test 3, a 15% GJT reduction. Coventry was included in a zone that covered the Coventry & Solihull areas, as one of the thirteen external corridors included within the analysis, however as outlined in Table 1 it falls outside of the top 10 links for which more detailed commentary was given. Therefore, this addendum will provide greater understanding on where the Coventry corridor placed in the analysis to assist with the prioritisation of proposed rail schemes.
- 5.1.3 Table 8 details the GVA uplift per annum for the Coventry & Solihull corridor, as well as the corridor's position in the ranking for each of the four key cities individually and the overall ranking across all corridors and cities.
- 5.1.4 The total GVA uplift attributed to the corridor from the four origin stations equals **£27.23m** per annum which represents a significant potential uplift when considered in isolation but is a relatively modest figure in comparison to the other corridors, placing it in ninth place (out of fourteen) in the overall corridor rankings.

Table 8. GVA uplift per annum – 15% GJT reduction – Coventry and Solihull corridor results (£m)

CORRIDOR	DERBY	LEICESTER	LINCOLN	NOTTINGHAM
Coventry & Solihull	£7.39	£11.85	£0.25	£7.74
Ranking – Per City	8	7	14	9
Ranking – Overall	29	20	56	28

- 5.1.5 For Derby, Leicester and Nottingham, the Coventry corridor places in the mid-range of both their individual and the overall rankings, however the result for Lincoln ranks in last place both individually and overall. When considering options for improving connectivity across these corridors it will be Leicester and Nottingham that see the greatest benefit with improvements proposed including direct services from Nottingham to Coventry. Passengers from Derby would be likely to continue to route via Birmingham whilst the impact of Lincoln would be dampened by the need for an interchange at Nottingham and the journey time between Nottingham and Lincoln.
- 5.1.6 For Leicester and Nottingham rail connectivity to the Coventry area is disproportionately poor. From Leicester passengers have to travel to Nuneaton on a Leicester – Birmingham train before interchanging onto a Nuneaton – Coventry service. Connection times are poor with a lengthy wait of approaching 30 minutes for flows towards Coventry giving a total journey time

of around 1 hour 25 minutes, and a six minute connection for movements towards Leicester, which whilst short provides little resilience against late running, but gives a journey time of one hour. For Nottingham options exist for routing via either Birmingham or Leicester but journey times are typically 1 hour 45 minutes to two hours.

- 5.1.7 As detailed in section 4.4.3, an exercise was undertaken to explore what level of change could be realistically delivered by modelling the impact of more specific service changes (as opposed to a percentage reduction in GJT), largely based upon the MYNE train service specification.
- 5.1.8 A similar exercise has been undertaken for this addendum, to help understand the potential magnitude of benefits for the East Midlands of either Midlands Rail Hub East (MRH East) or Midlands Connect's Coventry – Leicester – Nottingham scheme (CLN), and to therefore understand the relative priority of each.
- 5.1.9 Midlands Rail Hub aims to expand rail capacity across the network into and out of Birmingham, with the Eastern portion of the scheme enhancing connectivity to the East Midlands through the provision of two additional trains per hour between Birmingham and Leicester, as well as additional services from Birmingham towards Derby and Nottingham.
- 5.1.10 The Coventry – Leicester – Nottingham scheme would reinstate direct rail services between Coventry, Leicester and Nottingham for the first time in two decades through the construction of a dive under at Nuneaton, offering journey time improvements of circa 50 minutes. The table below summaries the changes on the CLN axis:

Table 9. Assumed CLN Changes

FLOW	CURRENT SERVICE			WITH CLN		
	TRAINS PER HOUR	INTERCHANGES	JOURNEY TIME	TRAINS PER HOUR	INTERCHANGES	JOURNEY TIME
Leicester – Coventry	1	1	56	2	0	32
Nottingham - Coventry	4	1	117	2	0	65

- 5.1.12 The table below outlines for key links the assumed service specification and GJT improvements as part of both schemes and the resultant GVA uplift per annum.
- 5.1.13 Whilst we are unable to attribute costs associated with these specific service changes and infrastructure interventions, the modelling results provide an indication of the scale of benefits that can be delivered from current rail industry and government work on the future development of these schemes.

Table 10. GVA uplift per annum – assumed MRH East and CLN specifications (£m)

SCHEME	FLOW	CHANGE IN SERVICE	GJT REDUCTION	SINGLE YEAR IMPACT
MRH East	Derby – Birmingham	+ 2tph	10%	£19.62
	Leicester – Birmingham	+ 2tph	12%	£27.76
	Nottingham – Birmingham	+ 1tph	5%	£10.23
CLN	Leicester – Coventry	New direct service with reduced journey time	45%	£34.00
	Nottingham - Coventry		41%	£26.36

- 5.1.14 The results demonstrate that the three modelled flows associated with MRH East have the potential to generate a £57.62m per annum GVA uplift, of which £27.76m is associated with Leicester – Birmingham which shares the route to Nuneaton with Coventry flows. The two modelled flows associated with the CLN scheme have a potential £60.36m uplift. It should be noted that these results capture the whole Coventry and Solihull sector which covers 14 stations.
- 5.1.15 The scale of this uplift is very significant and reflects the transformational nature of the service change with a direct two trains per hour service provided, lower journey times from Nottingham by around 55 minutes and Leicester by 25 minutes. The scale of benefits is comparable to the scale of change to Birmingham which see smaller proportional GJT changes and which are already more mature markets. The poor rail connectivity between Coventry and Leicester means less than 3% of journeys between the two cities are made by rail³, with many trips likely suppressed. The CLN scheme would considerably improve the rail connectivity between each of the urban centres and has the potential to generate a significant economic benefit.
- 5.1.16 The implication of this is that the scheme is strategically important to both Nottingham and Leicester and is complementary to Midlands Rail Hub aspirations.
- 5.1.17 This echoes the initial findings of this analysis and the dominance of the Birmingham corridor, highlighting the current limitations in connectivity and the importance of improving links between the key East Midlands cities and Birmingham.

³ <https://www.midlandsconnect.uk/projects/rail/coventry-leicester-nottingham/>

6. SUMMARY

- 6.1.1 The modelling work undertaken indicates that connectivity changes to and from Birmingham, Yorkshire and the North West have the potential to generate significant economic value for the East Midlands.
- 6.1.2 The figure below summarises the relative ranking of the corridors when modelling a 15% GJT reduction.

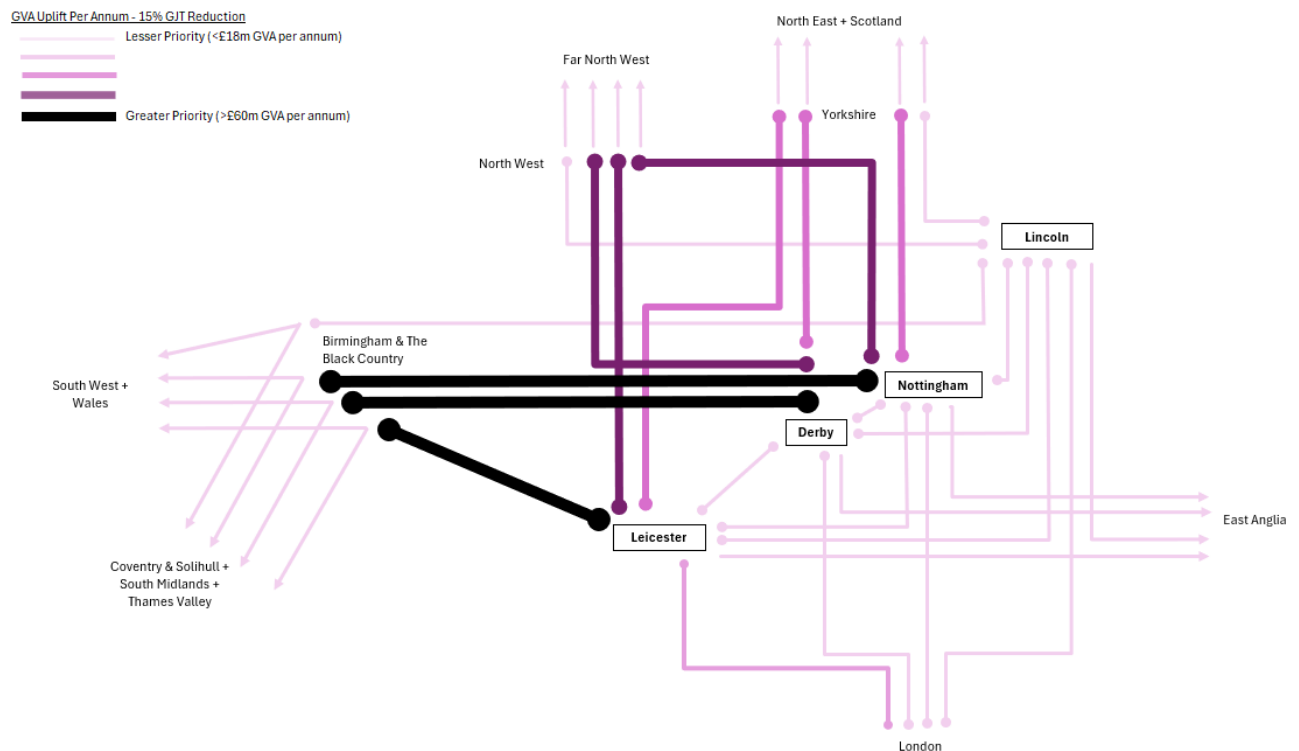


Figure 6. Corridor impacts summary - 15% GJT reduction

- 6.1.3 The potential for benefits in improving connectivity to London generally ranks lower, which is intuitive given the relatively good connectivity to the capital from Nottingham, Leicester and Derby. By contrast, the results demonstrate that in the case of Lincoln, connectivity to London is much more important in economic terms.
- 6.1.4 The results for Nottingham, Lincoln and Derby align closely with the proposed MYNE service specification, however the assessment also demonstrates that delivering the benefits of MYNE will also require investment in journey times and capacity along the entirety of the Birmingham-Derby-Sheffield-Leeds and Birmingham-Leicester corridors. There are not insubstantial benefits for other flows and, were these options developed further, there may be potential to increase the level of benefits generated.
- 6.1.5 What the results do highlight is that there is a need for investment across the Birmingham to Leicester, and Birmingham to Derby and Sheffield corridors. The type of interventions specified imply a need for electrification to support high line speeds, increased capacity and better acceleration than can be achieved by diesel trains.

APPENDIX A – MYNE SPECIFICATION MODELLING

Table 11. GVA uplift per annum – assumed MYNE specification (£m)

FLOW	CHANGE IN SERVICE	GJT REDUCTION	SINGLE YEAR IMPACT
Derby – Birmingham	3 to 6tph & 5 min JT reduction	22%	£45.19
Leicester – Birmingham	2 to 4tph	12%	£27.76
Nottingham – Birmingham	2 to 3tph & 5 min JT reduction	10%	£21.17
Leeds – Nottingham	10 min JT reduction	8%	£2.38
Leeds – Leicester	No interchange & 10 min JT reduction	21%	£5.93
Leeds – Derby	1 to 2tph	8%	£1.87
Leeds – Lincoln	14 min JT reduction	8%	£1.87
Nottingham – Manchester Piccadilly	1 to 2tph	6%	£3.41
Leicester – Manchester Piccadilly	No interchange & 20 min JT reduction	27%	£14.32
Derby – Manchester Piccadilly	No interchange & 20 min JT reduction	28%	£20.51
Lincoln – London	0.5 to 1tph	10%	£9.25
TOTAL			£153.65

APPENDIX B – GVA BY SECTOR COMPARISON

Table 12. GVA by sector comparison, 2018, 2018 prices

	DERBY	LEICESTER	LINCOLN	NOTTINGHAM	REST OF EAST MIDLANDS	EAST MIDLANDS TOTAL	BIRMINGHAM	REST OF BLACK COUNTRY	BIRMINGHAM & BLACK COUNTRY TOTAL	GREAT BRITAIN
ABDE: Primaries and utilities	2.8%	2.3%	8.3%	5.5%	6.7%	5.9%	0.9%	3.2%	2.5%	3.6%
C: Manufacturing	22.4%	12.0%	12.1%	4.0%	17.7%	15.7%	14.0%	13.5%	13.6%	10.0%
CA-CB: Food, beverages, textiles, and clothing	2.3%	7.7%	0.8%	1.0%	4.3%	4.0%	0.6%	1.7%	1.4%	1.8%
CC-CG: Wood, petroleum, chemicals, and minerals	1.3%	2.5%	1.7%	0.8%	4.6%	3.6%	1.7%	2.8%	2.5%	2.9%
CH-CL: Metals, electrical products, and machinery	18.2%	1.6%	9.4%	0.8%	7.3%	6.9%	10.0%	7.8%	8.5%	4.5%
CM: Other manufacturing, repair, and installation	0.6%	0.4%	0.2%	1.3%	1.5%	1.2%	1.6%	1.1%	1.3%	0.8%
F: Construction	4.6%	3.4%	6.3%	4.0%	7.9%	6.7%	5.5%	7.3%	6.8%	6.1%
G: Wholesale, retail, and motor trades	9.2%	10.5%	12.3%	13.2%	13.4%	12.7%	10.5%	14.5%	13.3%	10.7%
H: Transport and storage	3.1%	1.6%	1.9%	2.3%	5.2%	4.2%	3.5%	6.0%	5.3%	4.2%
I: Accommodation and food	2.6%	1.7%	3.1%	2.5%	2.8%	2.6%	2.3%	2.6%	2.5%	2.8%
J: Information and communication	2.9%	7.2%	4.1%	8.8%	3.4%	4.4%	5.1%	3.1%	3.7%	7.1%
K: Finance and insurance	2.6%	2.5%	2.1%	4.8%	1.5%	2.1%	9.2%	2.9%	4.9%	7.1%
L: Real estate	8.8%	8.9%	6.9%	9.7%	12.9%	11.6%	8.6%	11.9%	10.9%	13.3%
M: Professional, scientific, and technical	7.6%	9.1%	4.4%	6.3%	4.8%	5.6%	7.8%	4.4%	5.5%	7.9%
N: Administrative and support	7.9%	7.2%	3.9%	8.0%	3.7%	4.9%	3.8%	4.8%	4.5%	5.4%
O: Public admin and defence	3.6%	5.7%	10.1%	6.0%	3.8%	4.5%	6.3%	4.7%	5.2%	4.8%
P: Education	6.3%	10.0%	7.1%	8.2%	6.1%	6.8%	7.8%	7.9%	7.8%	5.7%
Q: Health and social work	12.8%	12.9%	15.1%	13.3%	7.0%	9.1%	10.3%	9.8%	10.0%	7.7%
R: Arts, entertainment, and recreation	1.3%	2.6%	0.9%	1.9%	1.0%	1.3%	1.2%	1.3%	1.3%	1.6%
S: Other service activities	1.3%	1.9%	1.3%	1.4%	1.8%	1.7%	3.1%	1.8%	2.2%	1.6%
T: Activities of households	0.2%	0.3%	0.3%	0.1%	0.3%	0.3%	0.1%	0.2%	0.1%	0.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

APPROVAL

Version	Name		Position	Date	Modifications
1	Author	Katie Woodward	Senior Consultant	17/09/2025	
	Checked by	Laurence Venables	Associate	24/09/2025	
	Approved by	James Jackson	Director	26/09/2025	
2	Author	Katie Woodward	Senior Consultant	14/10/2025	Updated draft following initial client review
	Checked by	Laurence Venables	Associate	16/10/2025	
	Approved by	James Jackson	Director	16/10/2025	
3	Author	Katie Woodward	Senior Consultant	04/11/2025	Updated draft following stakeholder review
	Checked by	Laurence Venables	Associate	11/11/2025	
	Approved by	James Jackson	Director	12/11/2025	
4	Author	Katie Woodward	Senior Consultant	29/04/2026	Updated to add the Coventry Economic Analysis addendum
	Checked by	Laurence Venables	Associate	12/05/2026	
	Approved by	James Jackson	Director	27/05/2026	

