



**THE UK ECONOMIC, SOCIAL  
AND ENVIRONMENTAL VALUE  
DELIVERED BY  
LONDON NORTH  
EASTERN RAILWAY**

An independent report by

**steer**

October 2021



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# FOREWORD

LNER is committed to recovering from the pandemic and transforming for the future, so we can support the economies and communities of the LNER route to do the same.

We and our communities have a bright and sustainable future but after the blow of Covid-19 it will take us all some hard and considered work to get there. We have commissioned this independent report to help us and our partners better understand the economic, social and environmental value that LNER delivers, and therefore to inform all our investment choices for the future.

As set out in this report, whether it is our services, employment, procurement from local suppliers or partnerships with charities, every choice we make has the potential to create new opportunities for the towns and cities we serve in England and Scotland, and to support the country’s efforts to decarbonise to net zero. It is therefore vital that we fully understand our impact, so we can make the right choices.

The stakes are big. According to this



David Horne  
Managing Director  
LNER

new analysis, every £1 spent running and investing in LNER’s services, generates at least £2 in economic impact, plus an additional £0.83 of value for wider societal impacts. As the country recovers, and we implement our planned service improvements, this has the potential to rise to around £3 in benefit – an opportunity we and the destinations of the LNER route cannot afford to miss.

We look forward to working with you over the coming years to realise this value to the UK and the environment.

# EXECUTIVE SUMMARY

**Understanding LNER’s economic, social and environmental value is important** as it helps policymakers, transport and non-transport businesses, taxpayers and customers consider the case for continued support for and investment in intercity rail.

**The report presents Steer’s independent assessment of LNER’s economic, social, and environment value.**

For this assessment, we have deployed a standard methodology known as an Economic Impact Assessment. This measures the four core channels through which economic impacts may be generated:

1. Direct impact: Direct impacts measure the level of economic activity carried out directly by LNER, including the company’s total spend on staff salaries, rolling stock lease costs and station facilities.
2. Indirect impact: The indirect impact of LNER comprises the jobs and Gross Value Added (GVA) supported by LNER’s supply chain. This is analysed using the level of expenditure on non-employment goods and services.
3. Induced impact: The induced impacts of LNER are quantified in terms of the wider economic activity that takes place when employees of LNER and its supply chain spend their earnings. Induced impacts represent the final channel of economic impact, through which the wages of those employed directly by LNER and its supply chain support jobs in other sectors of the economy.
4. Catalytic impact: Catalytic impacts capture the wider economic and societal potential resulting from the contribution of rail network to trade and tourism (the demand-side impact) and the long-run contribution of growth in rail travel to productivity and GDP (the supply-side impact).

This methodology provides a robust structure around which to carry out analysis and report on LNER’s impact. Economic, social, and environmental impacts fall within each of the four channels, and some may overlap between channels.

This analysis has found that, for every £1 spent running and investing in LNER’s services, at least £2 is generated in GVA impact and an additional £0.83 is generated in wider societal impacts, including environmental benefit. This would rise to delivering more than £2.90 of benefit to the UK as the country recovers, more people return to rail post-pandemic and LNER delivers additional train services through future timetable changes.

Overall, LNER’s annual impact in a normal pre-Covid year stands at £2 billion, rising to between £2.1bn and £2.2bn thanks to the connectivity its services deliver across the country boosted by investment in new trains, tracks and destinations.



**For every £1 spent** running and investing in LNER’s services, at least **£2 is generated in GVA impact and an additional £0.83 is generated in wider societal impacts, including environmental benefit.**

The geographical spread of LNER's services and 11 managed stations means the economic and social value of LNER's operations proliferate beyond the immediate vicinity of the railway.

The total induced impact for LNER – quantifiable wider economic activity that takes place when employees of LNER and its supply chain spend their earnings – is estimated to be £198.4million.

Through its supply chain and employment, £835m is delivered direct to the economy, with £610m attributed to the value rail customers derive from fast, convenient journeys. The wider society also benefits from £225 million, which includes health and environmental benefits of rail over other modes of transport.

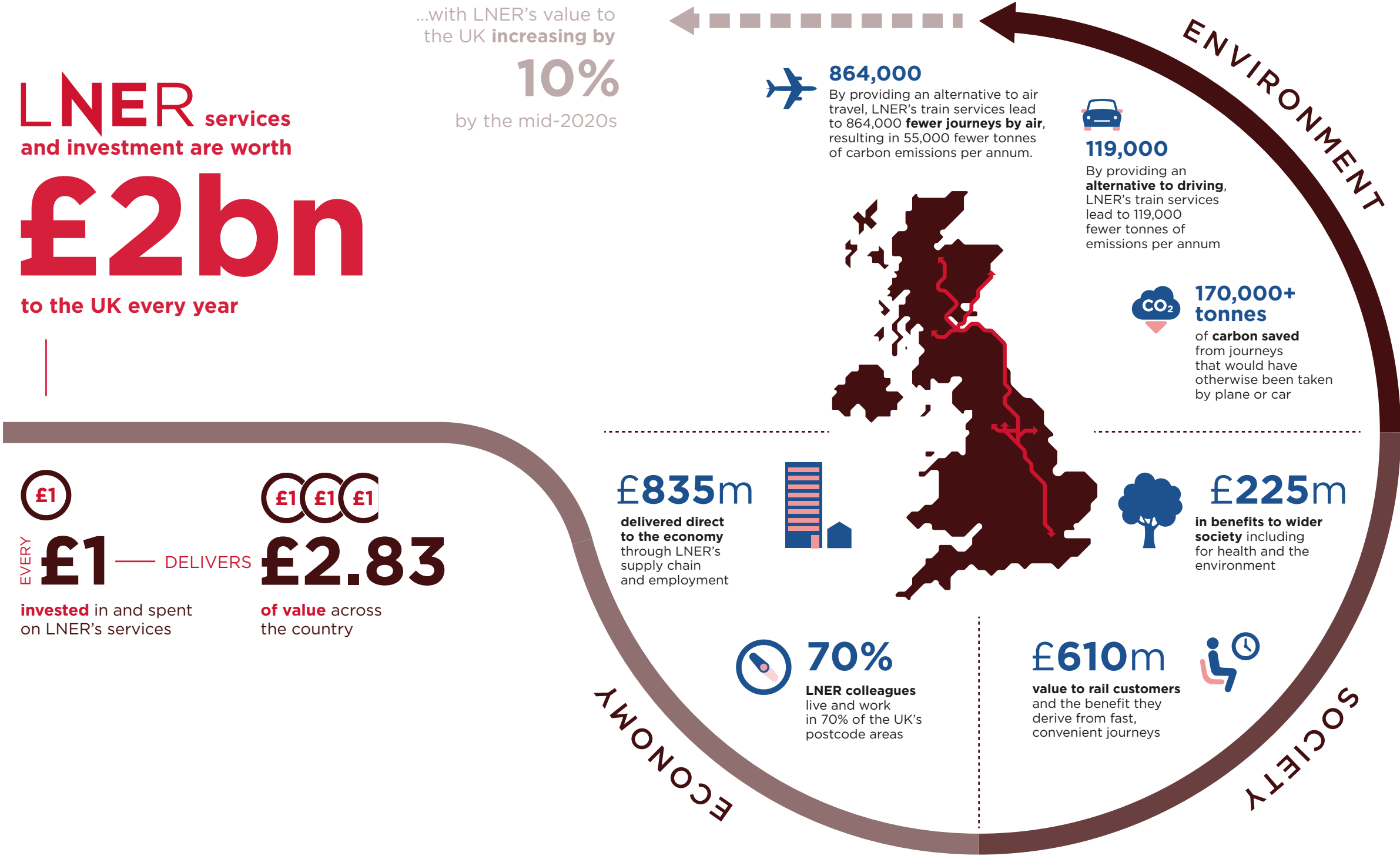
More than 170,000 tonnes of carbon is saved each year from journeys that would have otherwise been taken by plane or car.

LNER services and investment are worth **£2bn** to the UK every year

EVERY **£1** — DELIVERS **£2.83**  
invested in and spent on LNER's services of value across the country

...with LNER's value to the UK increasing by **10%** by the mid-2020s

VALUE ADDED FROM DIFFERENT LNER ACTIVITIES





# VALUE ADDED ACROSS THE UK

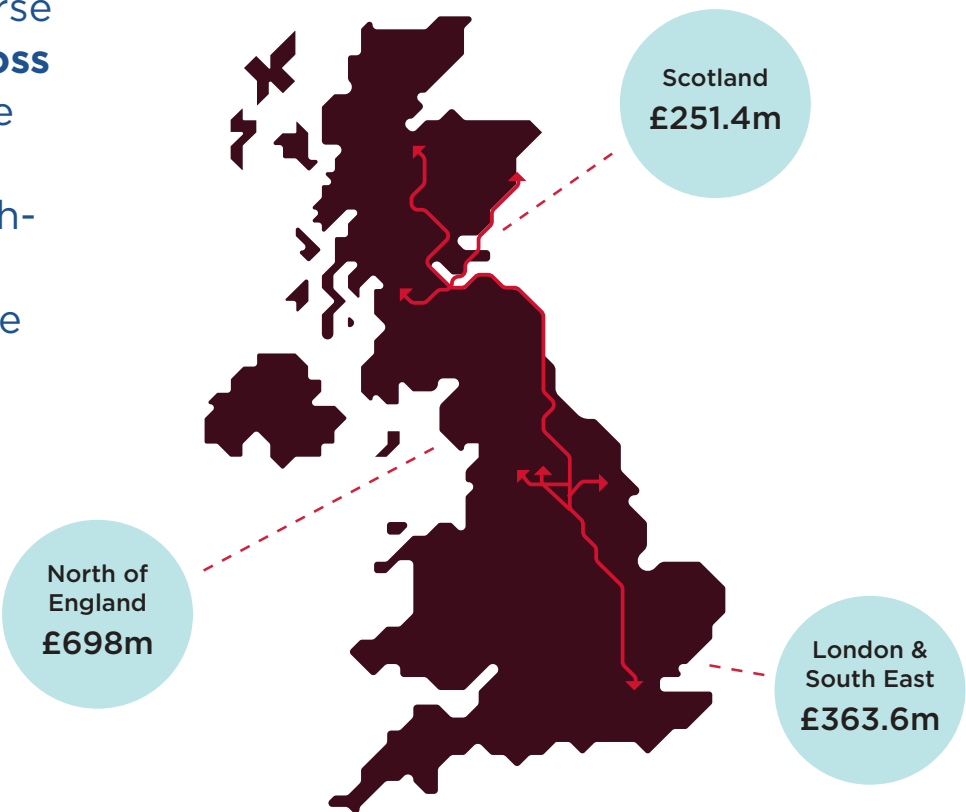
The current backdrop of the recovery from the COVID-19 pandemic presents a unique opportunity for LNER and the wider rail industry to act as a crucial vehicle for investment in the UK's infrastructure network, both as part of more immediate actions for post-COVID recovery and in the longer term to support the UK Government's wider agenda, including its commitment to carbon net zero and to levelling-up the economy.

The impact of the services and investment LNER provides is diverse and spread across the UK, from the South East of England to north-east coast of Scotland and the Highlands.

This includes £688.5 million in benefits for the North East of England and Yorkshire and the Humber, which is nearly double the benefit delivered to London and the South East.

For Scotland, LNER delivers £251.4 million in benefits with Edinburgh and surrounding areas benefitting from £201.8 million.

Even areas not directly on its route, such as the North West of England, still benefit from LNER's investment and services.



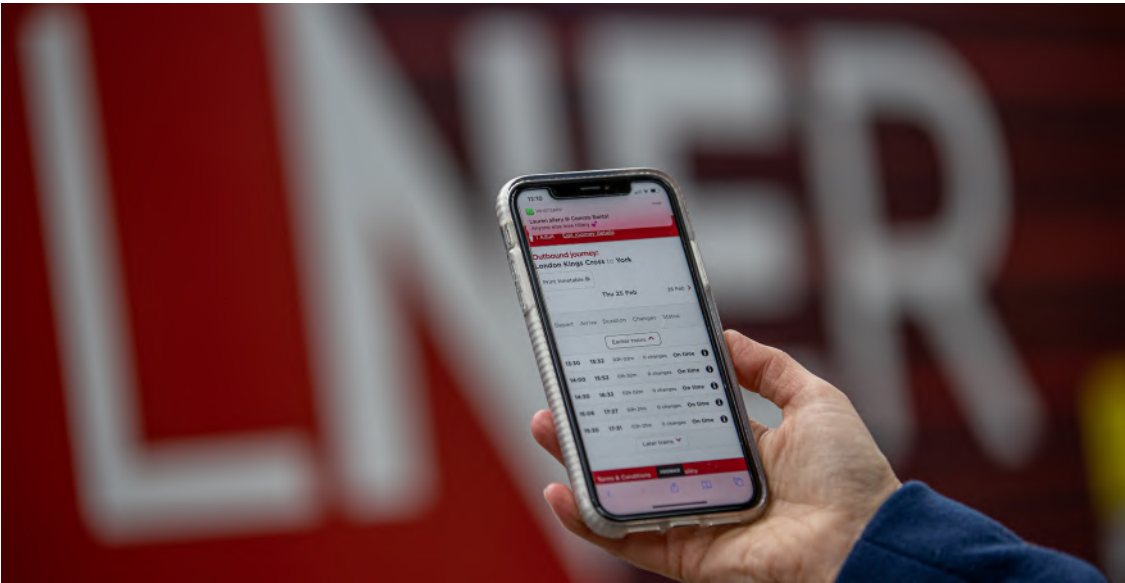
# THE POTENTIAL TO ADD FURTHER VALUE IN THE FUTURE

LNER's potential to add further value in the future is largely driven by the additional and improved services it plans to introduce, through timetable changes.

We have considered two different scenarios that assess the potential impact of LNER's proposed future timetable changes by the mid-2020s on its economic, social and environmental impact. In Scenario A the timetable changes lead to growth in LNER patronage with this growth projected using Passenger Demand Forecasting Handbook (PDFH) methods. In Scenario B, patronage growth is 1.5 times that suggested by applying the PDFH approach.

Our analysis shows that LNER's impact could increase to between £2.1bn and £2.2bn as a result of the increased patronage induced by timetable improvements.

Assuming the total operating expense does not change under Future Scenarios A and B, given that LNER already operates the full fleet of trains it requires for these timetable uplifts, the return on each £1 spent on and invested in LNER increases to £2.04 (GDP) and £0.89 (additional societal benefits) in Scenario A, and to £2.10 (GDP) and £0.98 (additional societal benefits) in Scenario B. As such, in both Scenarios A and B, every £1 invested in and spent on LNER's services would have the potential to deliver more than £2.90 of benefit to the country.





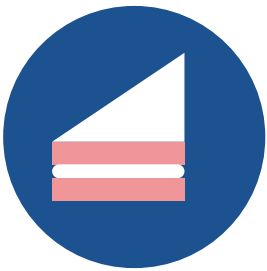
**COVID-19  
PANDEMIC**

While this report focuses on the value LNER delivers in a normal year, and the additional value it can deliver in the future, it is important to note that, throughout the pandemic LNER continued to provide services for essential travel, helping key workers make necessary journeys.

To make these journeys safer and more enjoyable, several service changes have been implemented as part of the LNER 'Covid Aware' safe travel pledge and LNER is looking at which of these should be retained following the pandemic.

These measures include recognising the impacts of the pandemic on passengers and the wider community.

In response, alongside its existing Customer and Community Investment Fund, which supports projects and initiatives addressing local issues, LNER has made additional charitable donations throughout the pandemic, including transferring its order of around **5,000** sandwiches per week to the food charity FareShare.



**5,000 sandwiches per week donated to the food charity FareShare throughout the pandemic.**

LNER also:

- Made much more use of seat reservations to manage demand, plus an online tool to help passengers choose a quieter train
- Relaxed peak ticket restrictions on Fridays to spread demand throughout the day, and on flexible booking options at other times
- Enhanced cleaning of surfaces and toilets, including additional deep cleaning between services using 'fogging' to kill viruses on hard surfaces and in the air, and
- Added on-board safety measures including complimentary hand sanitiser and made full use of ventilation systems that replace the air on the train every six minutes.

It is too soon to calculate the benefits that this delivered during the peak of the pandemic, but, from the passenger growth seen since restrictions were relaxed, it is clear that these approaches have given LNER a strong foundation to recover for the future.





ABOUT  
LNER

LNER is contracted by the Department for Transport to provide long-distance intercity services on the East Coast Main Line from London King’s Cross to Yorkshire, the North East and Scotland.

The route is one of the longest in the UK, spanning a total of 1,480 km. In 2019, a third of the UK’s population were estimated to live within 20 minutes of an East Coast Main Line station.

According to the Office of Road and Rail (ORR), in 2019/20 passengers using LNER service travelled 5.5 billion kilometres, the fifth largest total among UK train operators.

LNER services call at 55 stations in total with key destinations including Aberdeen, Inverness, Edinburgh, Newcastle, Durham, Darlington, York, Leeds, Doncaster, Peterborough and London King’s Cross.

The primary market of LNER is long distance travel between London, Yorkshire, the North East of England and Scotland, with services calling at an array of towns and cities within those areas. LNER’s route map is shown in Figure 1.1.



Top 10 LNER Flows by Patronage

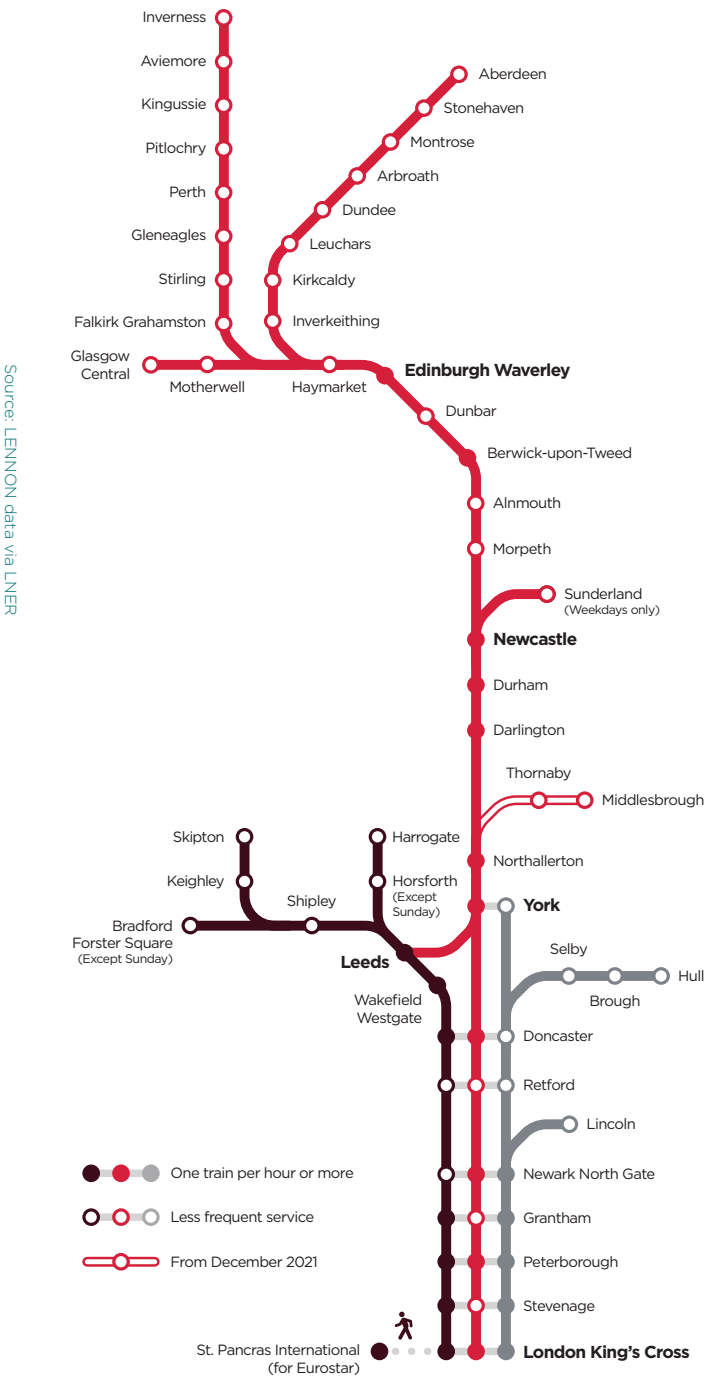
Origin - Destination	Annual Patronage (2018-19 data, 000s)
Leeds - London	1,075
Peterborough - London	1,000
London - Leeds	990
London - Edinburgh	740
York - London	720
Newcastle - London	715
London - York	680
London - Newcastle	670
Edinburgh - London	665
Grantham - London	440

LNER is the designated Station Facility Owner (SFO) for 11 stations on its network:

- Peterborough
- Grantham
- Newark North Gate
- Retford
- Doncaster
- Wakefield Westgate
- York
- Darlington
- Durham
- Newcastle
- Berwick-upon-Tweed.

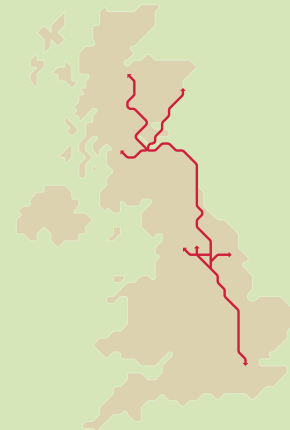
The LNER route covers almost the entire length of the UK and, as a result, the impact of the services it provides is diverse and spread from the south-east of England to north-east coast of Scotland.

Figure 1.1





## CASE STUDY: ATALIAN SERVEST



LNER is a key part of the transport division for Atalian Servest, with 370 full time equivalent employees working on this contract.

Atalian Servest, which provides cleaning of both fleet and estates for LNER across the UK, works with LNER to put the latest innovation in place to maintain the high standards

required to give customers the confidence to travel.

These innovations have also allowed a reduction of plastic packaging by 83%, cardboard by 72%, water by 90% and reducing chemicals of concern by 70%.

**“ From recent estimates, this contract with LNER is worth around £6million to the local economies across the East Coast Mainline. ”**

Johan Venter

Transport lead and Managing Director at Atalian Servest.



## ECONOMIC IMPACT OF LNER

### LNER'S CUSTOMERS

LNER delivers more than 20m passenger journeys per year across the length of the UK. As well as the benefits to the environment from taking the train over plane or car, **the benefits to the wider economy provided by this patronage and connectivity** are significant.

The value to the UK of the time saved by customers taking an LNER service, and productive time enjoyed by customers on that service, is estimated to be **£610m** per year.

The value of user journey time benefits by region are highest for those utilising the Peterborough to London route (£54.33million), accounting for nine per cent of the overall annual user journey time benefits; Leeds to London totals £45million; Grantham to London £18.81million and London to Edinburgh £16.30million.

In terms of user journey time benefits per origin station, this is the highest in Yorkshire and the Humber (£190.1million) accounting for 31 per cent of the route-wide £610.03million, followed by London with £143.15million (23 per cent) and the North East of England £71.73million.



The value to the UK of the **time saved by customers taking an LNER service**, and productive time enjoyed by customers on that service, is estimated to be **£610m** per year.





User benefit by flow

Flow	Annual user journey time benefit (£000s)
Leeds – London	45,038
Peterborough – London	54,329
London – Leeds	20,557
London – Edinburgh	16,295
York – London	15,148
Newcastle – London	11,295
London – York	14,729
London – Newcastle	10,625
Edinburgh – London	15,672
Grantham – London	18,810
Other flows	387,531
Total	610,029

LNER user journey time benefit by region

Region	Annual Benefit (£000s)
Scottish Highlands	435
North East of Scotland	3,978
West and Central Scotland	3,621
East of Scotland	54,138
South of Scotland	0
Scotland Total	62,172
North West of England	1,102
North East of England	71,793
Yorkshire and The Humber	190,074
West Midlands	7
East Midlands	53,941
East of England	85,886
London	143,145
South East of England	1,844
South West of England	64
England Total	547,856
Wales	1
Total	610,029



**Retail spend by LNER passengers at stations across the rail network is estimated to be £20.6m.**

The Leeds to London route is where passenger spend is highest at £1.31million – 6.4 per cent of overall spend; followed by London to Leeds (£1.21million); London to Edinburgh (£905,000) and York to London (£882,000).

For each of these routes, the average spend per passenger is estimated to be **£1.22**.

In terms of regions, passenger spend is the highest in London (£7.67million), Yorkshire and The Humber (£5.4million) and the North East of England (£2.53million).

Passenger spend by flow

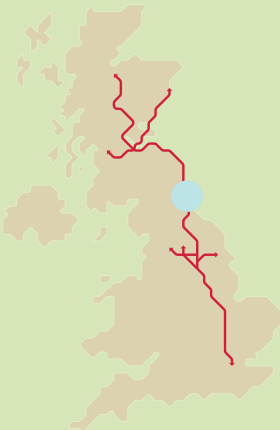
Flow	Average spend per passenger	Annual LNER passengers (000s)	Total Annual Spend (£000s)
Leeds – London	£1.22	1,075	1,313
Peterborough – London	£0.73	998	731
London – Leeds	£1.22	992	1,211
London – Edinburgh	£1.22	741	905
York – London	£1.22	722	882
Newcastle – London	£1.22	716	874
London – York	£1.22	678	829
London – Newcastle	£1.22	669	817
Edinburgh – London	£1.22	665	813
Grantham – London	£0.10	441	43
Total	-	22,494	20,590

LNER passenger station retail spend by region

Region	Annual Spend (£000s)
Scottish Highlands	53
North East of Scotland	159
West and Central Scotland	188
East of Scotland	2,112
South of Scotland	2
Scotland Total	2,514
North West of England	62
North East of England	2,654
Yorkshire and The Humber	5,425
West Midlands	8
East Midlands	324
East of England	1,576
London	7,674
South East of England	333
South West of England	16
England Total	18,074
Wales	2
Total	20,590



CASE STUDY:  
BECKLEBERRY'S

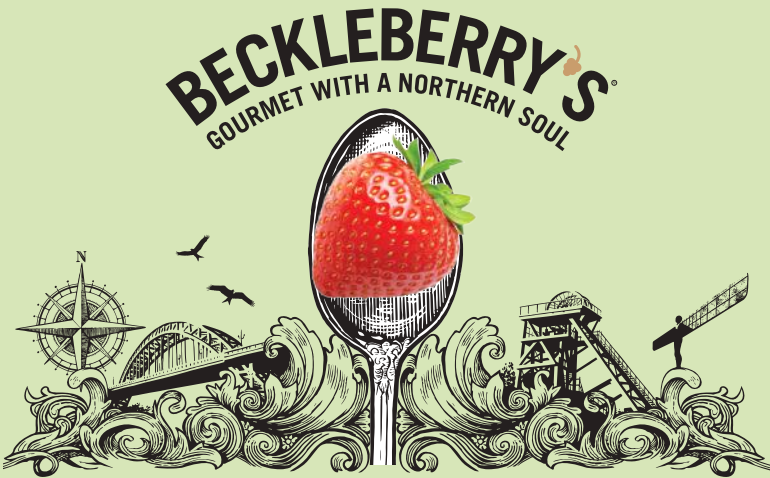


As a small business based in Tyne and Wear, Beckleberry's attributes 20 full time employees directly as a result of a contract with LNER. The gourmet dessert supplier reports that LNER has been a highly valued customer over the course of their relationship.

As a direct result of the relationship, Beckleberry's has invested into its home-delivery service during the pandemic, which had only been possible due to LNER's reassurance that Beckleberry's will feature in the operator's future.

“ The contract with LNER is valuable for us as a business, **but also to allow us to offer jobs to local people, having such a positive impact on the local economy.** ”

Peter Craig  
Beckleberry's





LNER’S EMPLOYEES

Aligned to the extensive geographical spread of LNER services and stations, LNER has employees based across the country.

**As employees’ earnings are spent in the wider economy, the economic and social value of LNER is proliferated across the country too, beyond the immediate vicinity of the railway.**

With more than 3,000 full-time employees, LNER has the eighth largest full-time workforce among UK Train Operating Companies. The workforce is distributed widely across the UK, with LNER employees living in 83 of the UK’s 121 postcode areas – spreading the economic and social impacts of LNER’s operations across the UK. This is shown on the map in [Figure 1.2](#).



LNER colleagues live and work in **70%** of the UK’s postcode areas

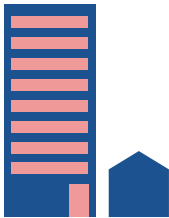


LNER’S SUPPLY CHAIN

**LNER sits at the centre of a complex supply chain network stretching well beyond its travel corridor.**

LNER’s suppliers range in size, from small to medium enterprises that provide food and drink onboard such as Reids of Caithness or Harrogate Water, design and printing services and health and wellbeing support for colleagues, to some of the largest suppliers such as cleaning services through Atalian Servest, access to rail infrastructure through Network Rail and the provision of its train fleet via Hitachi.

In addition, there are various depots positioned across the route that provide local jobs and support local economies. These include Clayhills in Aberdeen, Craigentenny near Edinburgh, Doncaster and Bounds Green in London, alongside Hitachi’s manufacturing facility in Newton Aycliffe near Darlington.



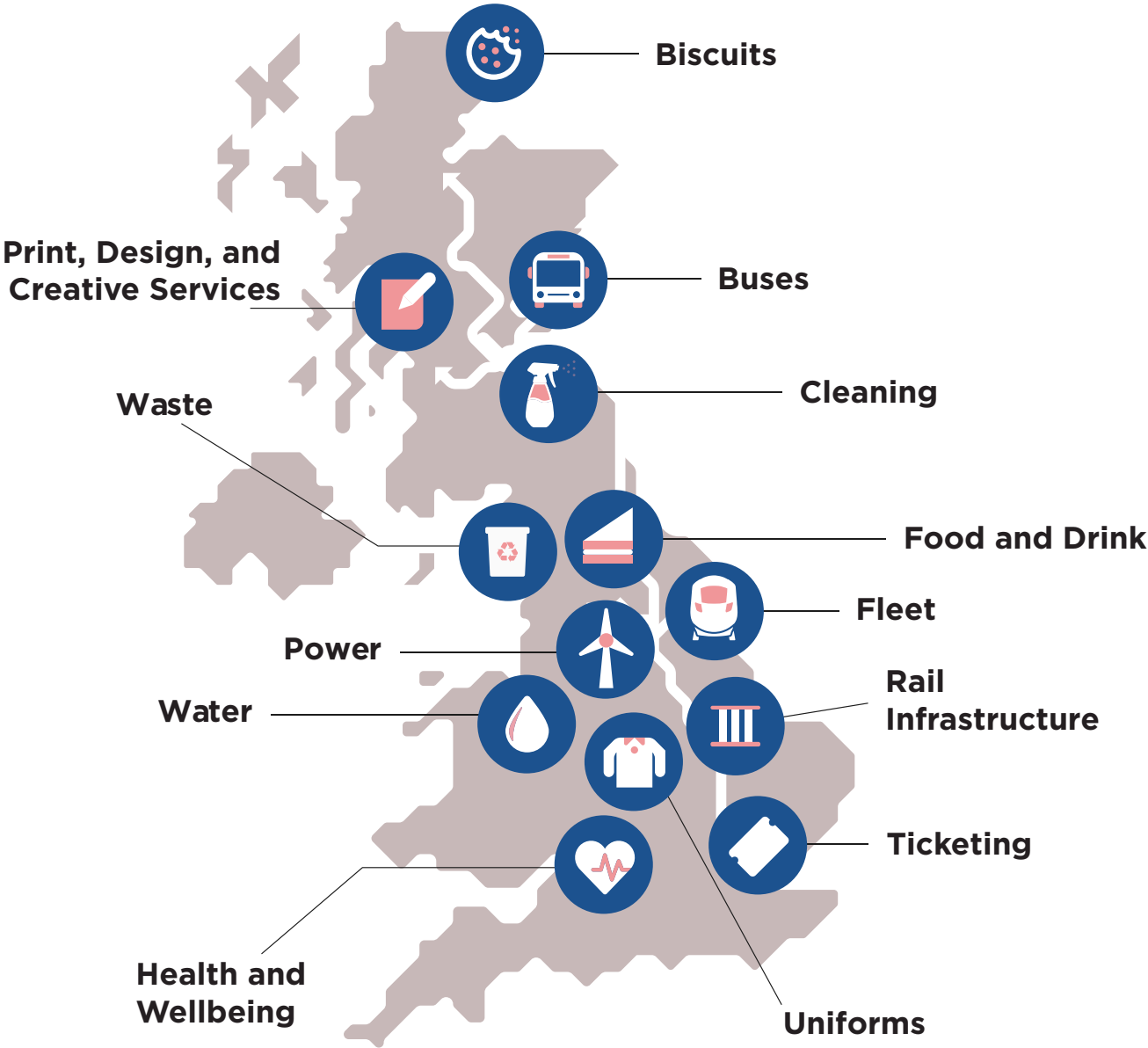
In total, **LNER spent £665m on suppliers** (2020 prices) between December 2019 to November 2020

Of this, the largest spend in the UK was within Yorkshire and the Humber (£185.86m) and London (£107.13m).

LNER supply chain spend by region

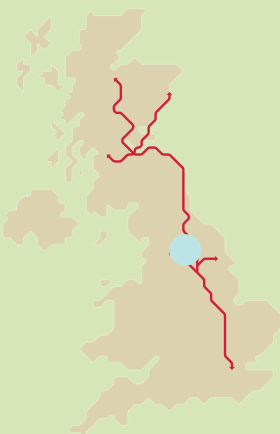
Region	(£000s)
Scottish Highlands	4,642
North East of Scotland	10,778
West and Central Scotland	7,554
East of Scotland	95,630
South of Scotland	3,397
Scotland Total	122,000
North West of England	6,787
North East of England	55,170
Yorkshire and The Humber	185,856
West Midlands	2,853
East Midlands	21,822
East of England	68,899
London	107,133
South East of England	4,128
South West of England	1,368
England Total	454,015
Wales	307
Northern Ireland	87
Other National/International	88,591
Total	665,000

LNER’s supply chain stretches across the UK, adding more than **£665m** to local economies.



CASE STUDY:  
**RUDGATE BREWERY**

**RUDGATE**  
**BREWERY**



Rudgate Brewery was established in 1992 and is based in Yorkshire. It has been supplying the bespoke 'Hop on Board' ale for onboard LNER's service for a number of years.

Rudgate's work with LNER to reduce its carbon footprint too, including streamlining distribution processes to reduce the road miles; moving from glass bottle to can to make it easier to recycle, and investing in new machinery to make the production process more efficient.

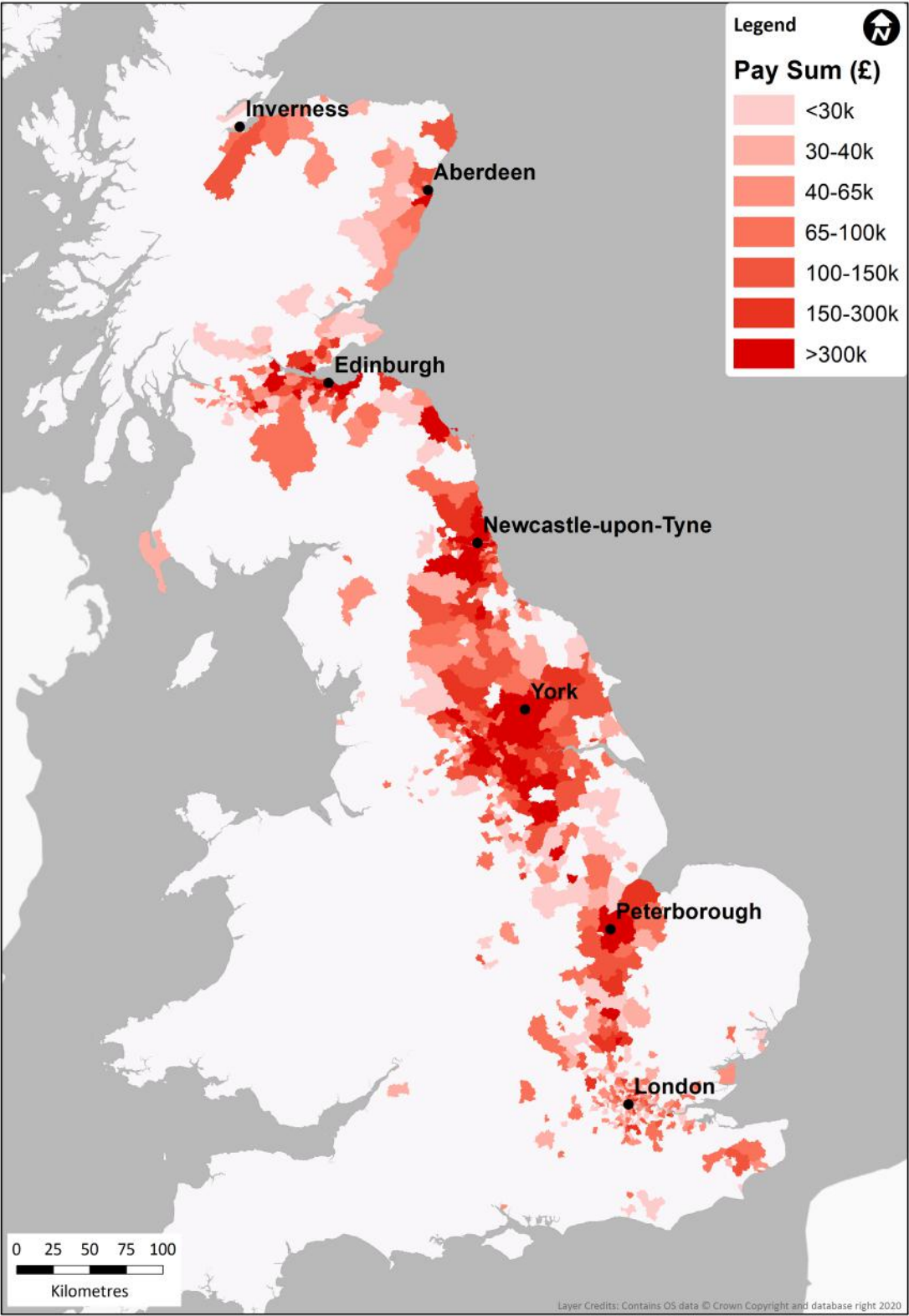
“ The contract has had **such a positive impact on our business**. LNER accounts for eight per cent of all our trade, and by far one of our biggest contracts. ”

Craig Lee  
Rudgate Brewery





Figure 1.2: Geographic Illustration of LNER's non-wage expenditure



Source: Data provided by LNER, mapping provided by Steer





ENVIRONMENTAL AND OTHER WIDER BENEFITS  
DELIVERED BY LNER

Rail plays a key role in meeting the UK's carbon net zero commitments.

People choose to use rail because they find it beneficial compared with alternative ways of travelling. In the case of LNER, many customers choose LNER as they perceive a benefit compared to making the same journey by road, or for some LNER journeys, by air. These benefits come about because the traveller experiences a quicker journey and/ or a cheaper one than they would do using the alternative.

Train over car travel

By providing an alternative to driving, LNER's trains services lead to 119,000 fewer tonnes of emissions per annum.

By taking an LNER service over car, around 500 road casualties are avoided per year and a reduction in road infrastructure maintenance of £1.81million annually.

The benefits of this are spread right across the route, with the largest benefits in London, the North East of England, Yorkshire and the Humber and the East of Scotland.

Train over air travel

By providing an alternative to air travel, LNER's train services lead to 864,000 fewer journeys by air per annum, resulting in 55,000 fewer tonnes of carbon emissions.

The total annual non-user benefits where air is the alternative method of travel to LNER services are £4.2million.

For the London to Newcastle flow, 360,000 aviation journeys are avoided by people taking LNER services per annum, amounting to 24,300 tonnes carbon emissions being saved. For the London to Edinburgh route, 366,000 aviation journeys are avoided with people choosing LNER over flying, a total carbon emission saving of 20,900 tonnes.



170,000+ fewer tonnes of emissions from journeys that would have otherwise been taken by plane or car.

Avoided aviation carbon emissions

Flow	Aviation Journeys (000s)	Carbon emissions (000 tonnes)	Carbon emissions (£000s)
London - Newcastle	360	25.4	1,839
London - Edinburgh	366	22.4	1,624
London - Darlington	100	7.0	509
London - Aberdeen	9	0.8	56
London - Inverness	4	0.3	25
London - Glasgow	7	0.6	42
Aberdeen - Newcastle	13	0.8	60
Aberdeen - Darlington	6	0.4	27
Total	864	58	4,182
Total carbon emissions from the passenger rail journeys created as a result		03	





LNER non-user benefits by MEC category

Marginal External Cost (MEC)	Annual benefit (2020 prices, £000s)	Comments
Highway decongestion	232,514	
Reduction in road infrastructure maintenance	1,809	
Reduction in road accidents	33,396	This equates to approximately 500 road casualties avoided per annum
Improved local air quality	11,421	
Reduced noise pollution	2,456	
Reduced greenhouse gas emissions	17,465	This equates to approximately 240,000 tonnes of carbon emissions avoided from car travel, and 121,410 tonnes of additional carbon emissions from passenger rail journeys created as a result
Reduced fuel taxation	78,832	
Total	220,229	



LNER non-user benefits by region

Region	Annual Spend (£000s)
Scottish Highlands	1,206
North East of Scotland	2,900
West and Central Scotland	1,993
East of Scotland	29,909
South of Scotland	43
Scotland Total	36,051
North West of England	676
North East of England	30,900
Yorkshire and The Humber	46,266
West Midlands	82
East Midlands	10,618
East of England	14,436
London	75,005
South East of England	5,721
South West of England	435
England Total	184,141
Wales	38
Total	220,229

LNER wider economic benefit by model zone

Zone	Annual agglomeration benefit (£m)
Inner London	8.50
West Yorkshire	6.00
Bedfordshire and Hertfordshire	4.20
Outer London	3.00
South Yorkshire	2.90
Tees Valley and Durham	2.40
Northumberland and Tyne and Wear	2.30
East Anglia	2.00
East of Scotland	1.40
Lincolnshire	1.20
North Yorkshire	1.10
North East of Scotland	0.90
West and Central Scotland	0.50
East Yorkshire and Northern Lincolnshire	0.30
North Scotland	0.10
Rest of Midlands	0.00
North West of England	0.00
Rest of Southern England	0.00
South West, Wales and Northern Ireland	0.00
Total	36.9





# SOCIAL VALUE OF LNER

By serving, employing and buying from businesses across the country, LNER also delivers wider economic and societal benefits.

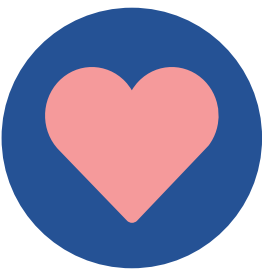
For example, between March 2020 and May 2021, £8million of social and local economic value has been generated by **LNER’s tenders** that have had a value of more than £100,000.

The large majority of this value is through **LNER’s suppliers employing staff local to LNER’s route**. This impact is valued at £7.5m, or 94 per cent of the total social value.

Additional social value over this time period includes £334,460 generated through **LNER’s staff volunteering** during the COVID-19 pandemic and LNER’s local charity donations.

With many frontline colleagues stood down due to the pandemic, LNER’s volunteering programme – LNER Reserves – saw colleagues across the East Coast Main Line assisting charities and organisations.

From giving time to make calls through Age UK, sending thousands of letters and parcels to care homes through Letter to a Friend and giving time to be first responders and volunteer at local foodbanks, the volunteering that took place, and still continues in 2021, made a significant difference to local communities and those in need.



LNER staff volunteering during the COVID-19 pandemic, and LNER’s local charity donations, generated **£334,460 of social value**.





# THE POTENTIAL FUTURE IMPACT OF LNER

As part of the report, two future scenarios have been considered to provide an indication of the potential added value that LNER could deliver through running additional services on its network and therefore support more customers. This would be a result of delivered timetable upgrades by mid-2020s.

Based on this analysis, these future scenarios could mean that LNER’s value to the UK increases to as high as £2.2billion per year.

Assuming the total operating expense does not change, given that LNER already operates the full fleet of trains it requires for these timetable uplifts, the return on each £1 spent and invested in LNER increases to £2.93 and £3.08, depending on the future scenario.



## Scenario A

If LNER’s patronage was to grow in line with the Department for Transport’s Passenger Demand Forecasting Handbook (PDFH) guidance and future proposed timetable changes were introduced, the wider economic benefits delivered by LNER would increase by £8.8million, reaching a total of £69.9million.

The proposed timetable changes are expected to increase passenger numbers by reducing General Journey Time made using LNER’s services, completed through three ways:

- Reducing the time spent on-board the train by removing stops
- Increasing the frequency of services and reducing the time passengers spend waiting on the next train
- Removing the need to interchange by providing direct services to new locations

The user benefits in this scenario would increase by £40.7million, reaching a total of £650.8million.

Based on the increased patronage assumed in this scenario, it would mean a passenger spend of £21.7million per year – a rise from £20.6million as it currently stands. The non-user benefits in this scenario would increase by £20.1million, reaching a total of £244.5m.

## Scenario B

In this scenario, patronage growth is 1.5 times that suggested by applying the PDFH approach and represents a demand increase above and the beyond the level predicted by industry guidance, but more in line with LNER’s pre-pandemic patronage levels and post-pandemic recovery.

Based on the increased patronage assumed in this scenario, it would mean a passenger spend of £23.8million per year by LNER passengers at stations.

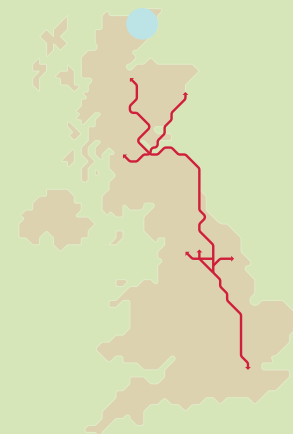
This scenario would also mean:

- An increase in user benefits by £101.8million, reaching a total of £711.8million
- Non-user benefits would increase by £50.3million, reaching a total of £274.7million
- Wider economic benefits would increase by £22million, reaching £83million





## CASE STUDY: REIDS OF CAITHNESS



Founded in 1966, Reids of Caithness is a supplier of premium biscuits to LNER's First Class passengers.

LNER was one of its first customers in this part of their travel-treats business and the relationship commenced in 2016.

“ We can't express enough what LNER means to us; it has put us on the map for the food service market, allowed us to create new jobs and to invest in our business as a whole.

**For an area like Caithness, this sort of support for a small business is vital. We have employed around eight full time staff as a direct result of the contract.**

Jobs are few and far between in this area, so it's fantastic to be able to offer employment to so many people; it is so valuable to us and the local economy.”

Tracy and Gary Reid  
Reids of Caithness





CONCLUSION:  
LNER'S CURRENT ECONOMIC,  
SOCIAL AND ENVIRONMENTAL IMPACT

Summary of LNER's current economic, social and environmental impact

Impact	£m
Spend on staff (A)	171
Gross profit (B)	103
Total direct impact (C = A+B)	274
Non-staff expenditure (D)	665
Total indirect impact (D)	665
Multiplier impact (E)	178
Spend at stations (F)	21
Total induced impact (G = E+F)	198
User economic and social benefits (H)	610
Non-user economic, social and environmental benefits (I)	224
Wider economic benefits (J)	61
Total catalytic impact (K = H+I+J)	896
Total current impact (L = C+D+G+K)	2,033

Impact by region

This table presents a summary of the impacts that have been modelled by region. Not all of the impacts included in this report cannot be attributed to individual regions and as such the total impact shown in this table does not match the overall total reported elsewhere in this report.

Summary of regional impacts

Region	(£000s)
Scottish Highlands	7.0
North East of Scotland	21.6
West and Central Scotland	16.2
East of Scotland	201.8
South of Scotland	4.9
Scotland Total	251.4
North West of England	9.5
North East of England	201.9
Yorkshire and The Humber	486.6
West Midlands	3.2
East Midlands	90.4
East of England	189.4
London	347.4
South East of England	16.2
South West of England	1.9
England Total	1,346.6
Wales	0.3
Northern Ireland	0.1
Total	1,598.4



# APPENDIX

## METHODOLOGY AND DATA SOURCES

### METHODOLOGY

We have deployed a standard methodology in assessing the economic, social and environmental value of LNER, known as an Economic Impact Assessment. This measures the four core channels through which economic impacts may be generated:

**Direct impact:** Direct impacts measure the level of economic activity carried out directly by LNER, including the company's total spend on staff salaries, rolling stock lease costs, or station facilities.

The direct impacts of LNER are quantified in terms of its contribution to UK economic output (GVA) and the employment it supports. At the core of its contribution to the economy are the activities which take place at LNER. Its contribution to GVA can be expressed as the sum of incomes of workers (wages) and businesses (profits). This is estimated by summing the gross profits of LNER and its gross employment costs.

The following two-step approach was applied to calculate LNER's Direct Impact:

- Companies House data to identify gross profit and gross employment costs (before interest, tax, depreciation and amortisation) for LNER
- Anonymised salary data broken down by the area postcode of the recipient to provide a geographic illustration of LNER's employment costs.

For the purposes of assessing LNER's direct impacts the franchise premium paid to the Department for Transport has been treated as a tax and has therefore been included as part of LNER's direct impact. In calculating LNER's direct impact we have summed the gross profit and the franchise premium.

**Indirect impact:** The indirect impact of LNER comprises the jobs and Gross Value Added (GVA) supported by LNER's supply chain. This is analysed using the level of expenditure on non-employment goods and services.

To calculate the total indirect impact of LNER, supplier expenditure data covering 13 rail periods (spanning December 2019 to November 2020) have been analysed.

The supplier data has been mapped using supplier postcodes to understand the geographic spread of LNER's indirect impact. In the case of LNER's two biggest suppliers by expenditure, assumptions have been made to map the expenditure:

- Network Rail: The total expenditure has been split along LNER's route based on the frequency of services on each section. This based on the biggest component of payments to Network Rail is track access charge which varies depending on the number of services LNER operate.
- Hitachi/Agility Trains East: The total expenditure has been split equally between the rolling stock assembly plant in Newton Aycliffe in County Durham, depots in Bounds Green, Doncaster and Edinburgh, and the Hitachi Rail HQ in Holborn, London.

**Induced impact:** The induced impacts of LNER are quantified in terms of the wider economic activity that takes place when employees of LNER and its supply chain spend their earnings. Induced impacts represent the final channel of economic impact, through which the wages of those employed directly by LNER and its supply chain support jobs in other sectors of the economy. For example, an LNER employee may spend their income on clothing, groceries, restaurants, household goods etc, which in turn generates employment in a range of sectors of the wider economy.

A common-practice approach to assessing the induced effects of an activity or industry on the economy – known as economic multipliers – has been deployed to calculate the estimated impact. The use of multipliers is commonplace in economic impact studies,

There is contemporary empirical evidence to assess the scale of induced impacts from railway networks on the economy. A comprehensive study undertaken in 2014 on behalf of the Community of European Railways and Infrastructure Companies (CER) into the impact of rail on the economy found that the magnitude of induced impact multipliers used by various studies to assess induced impacts of rail activities lay within a broad range from 0.25 to 0.75. In practice, this means that for every 100 direct and indirect jobs supported by railway companies, a further 25 to 75 induced jobs are supported in the wider economy.

The report goes on to suggest that in the UK the multiplier is at the upper end of the reported range at 0.65. For the purposes of this report we have presented the multiplier impacts of LNER using the 0.65 multiplier.

An assessment of employment and economic activity supported by LNER's customers as part of the journeys that they make has also been carried out. This has been carried out by estimating the retail spend by LNER passengers at rail stations.

This analysis is informed by a Steer study, "Future of On-Train and Station Retail" carried out on behalf of the Rail Delivery Group and Network Rail in 2013. The full methodology is as follows:

- Use the station classifications developed as part of the RDG report to classify each station used by LNER passengers, e.g. Leeds is a "major station" and Grantham is a "small commuter station". The classifications were originally defined by a number of metrics including the total passengers using each station.
- Extract the average spend per passenger at each type of station from the RDG report and inflate these values to 2021 prices using the DfT's measures of inflation.
- Use the LNER patronage data and the average spend per passenger to estimate the total spend for each pair of origin and destination station. For the purposes of this report it is assumed that passengers carry out their retail spending at the station they begin their journey.



## Multiplier Impact

**Catalytic impact:** Catalytic impacts capture the wider economic and societal impact resulting from the contribution of rail network to trade and tourism (the demand-side impact) and the long-run contribution of growth in rail travel to productivity and GDP (the supply-side impact).

Three different categories of catalytic impact have been included as a part of this assessment:

- User benefits: The benefits realised by LNER passengers travelling by rail and experiencing a quicker journey time than the alternative.
- Non-user benefits/welfare impacts: Wider societal benefits due to the positive externalities of LNER passengers using rail instead of alternatives (primarily road, but for some flows air is an option). These include congestion avoided, fewer accidents and lower CO2 emissions.
- Wider economic benefits: These agglomeration and market output benefits occur as transport networks bring firms, people and places closer together.

### User benefits

People choose to use rail because they find it beneficial compared with alternative ways of travelling. In the case of LNER, they find using rail services more beneficial than making the same journey by road, or for some LNER journeys, by air. These benefits come about because the traveller experiences a quicker journey and/or cheaper than they would do using the alternative, even when allowing for time to travel to and from stations and having to pay a rail fare.

The aggregate economic benefit of travelling by LNER has been calculated as follows:

- A simplifying assumption has been made that the alternative to rail travel is car travel.

There is limited data available regarding the generalised cost of travelling by air and as such air travel has not been considered for this part of the analysis.

- It has been assumed that all journeys made by LNER would continue to be made in the absence of LNER and these journeys would all be made by road.
- The following data has been sourced from Rail Usage and Drivers Dataset (RUDD) for each LNER flow:
  - Generalised Journey Time (GJT)
  - Average single leg rail fare
  - Road journey times
  - LNER passenger numbers split by business, other and commuter
- Road distances have been assumed to be the same as rail distances and an average speed by road imputed. Average vehicle operating costs for each flow and each journey purpose have been calculated by applying the formula set out in TAG Unit A1.3 and parameters from the TAG Databook.
- For rail and car and for each flow, Generalised Costs (GC) (in time units) have been calculated by summing the GJT and monetary cost divided by the appropriate value of time.
- A 'with LNER' composite Generalised Cost has been calculated by applying the logsum formula and dispersion parameters imported from HS2 Ltd's Planet Long Distance (PLD) model.
- The user benefits of using LNER is the product of the LNER flow and the difference between the composite GC and the car GC.

## Non-user benefits/Welfare impacts

Non-user benefits, or welfare impacts, refer to the positive externalities produced by LNER passengers travelling by train instead of the alternative, i.e. travelling by car or air. These benefits are both environmental and social in nature, and are felt by the whole of society, not just LNER passengers.

The methodology used to calculate the welfare impacts where travelling by road is the alternative to rail is as follows:

- Use LNER's patronage data to calculate the total rail miles travelled by LNER passengers;
- Calculate the 'alternative' road mileage. This is done so by using the DfT's diversion factors which estimate the proportion of journeys which would be carried out by car were rail not an option;

Use the DfT's Marginal External Cost (MEC) values to calculate the monetary non-user benefits of LNER services. The MEC values provide a monetary value for the following lines of benefit:

- Road decongestion benefits;
- Reduction in spend on road infrastructure;
- Reduced injuries and fatalities from road collisions;
- Improved local air quality;
- Reduced noise pollution; and
- Reduced greenhouse gas emissions.

Where possible, we have converted these monetary values into a 'real-world' value e.g. the reduction in carbon emissions in tonnes of carbon emissions, and number of road collisions avoided.

A similar methodology has been used to calculate the non-user benefits where travelling by air is another alternative to rail:

- For pairs of origin/destinations connected by LNER services, and a direct flight is available, use DfT diversion factors and LNER patronage data to estimate the number of journeys which would be made by air if rail were not an option;
- Use the International Civil Aviation Organization (ICAO) carbon emissions calculator to calculate the carbon emissions per trip made by air; and
- Use the DfT non-traded carbon values to monetise the carbon emissions for each journey.

To calculate the tonnes of carbon emissions produced by LNER passenger journeys resulting from people travelling by rail rather than air or car:

- For the specific air routes, we estimated the average carbon emissions that would be produced by LNER for the same journeys.
- For all journeys with LNER that would have otherwise been car journeys, we assumed those car journeys would have the average car occupancy, leading to more rail journeys than the car journeys that would have otherwise occurred. We also assumed that the passenger rail kilometres created would have been 96.07 per cent under electric traction and 3.93 per cent under diesel traction, as this corresponds with LNER's average passenger kilometres delivered.

## Wider economic benefits

### Agglomeration benefits

Trips made using LNER services for business generate ‘agglomeration impacts’. These occur as transport networks bring firms, people and places closer together.

In order to value these benefits the DfT’s TAG guidance and parameters have been used. A critical assumption underpinning this analysis is establishing a ‘counterfactual scenario’, that is what the rail journey times would be if LNER services were not to exist.

For the purposes of this report rail journey times from 2006 have been assumed as the counterfactual. This has been selected as a reasonable assumption as it is prior to significant frequency improvements provided by LNER and its predecessors.

The full methodology used to calculate the wider economic benefits of LNER is described below:

- The zoning system used in the modelling was established as an aggregated version of the NUTS 2 regions of the UK. Where LNER services do not have a direct impact, e.g. in Wales or the South West of England, the NUTS 2 regions have been aggregated.
- The generalised journey times between each zone by rail, road and air are sourced for the “with LNER” and “without LNER scenarios”. These have been sourced from the DfT’s RUDD dataset. The road and air journey times do not change between the with and without LNER scenarios.
- The level of demand by each mode between each zone is established. This is informed by LNER patronage data, and the RUDD dataset where there are gaps in the LNER data. For intra-zonal trips e.g. trips within West Yorkshire, Census Journey to Work data has been used to estimate the relative size of intra-zonal trips compared to inter-zonal trips.
- To estimate road and air trips, National Travel Survey market shares have been applied to the rail patronage data.
- The ‘effective density’ of each zone pair is calculated for the with and without LNER scenarios. In transport economics effective density refers to the ease at which individuals and firms can travel between different geographies. The TAG formulae for effective density has been used in this analysis.
- The increased productivity resulting from effective density is calculated using the TAG wider economic benefit elasticities.
- This is then converted into monetised agglomeration benefits by using the total jobs and GVA per job for each zone.

### Output change in imperfectly competitive markets

The presence of LNER services reduces the time needed to spend travelling between different parts of the UK. This reduction in travel time reduces the costs of production for businesses which use LNER for business purposes.

This reduction in production cost is assumed to induce investment and increase the overall level of output in the national economy. This benefit is known as the ‘output change in imperfectly competitive markets.’

Further details on the economic theory behind this benefit can be found in TAG Unit A2.2. The guidance states that the value of the output change benefit can be estimated by applying a 10% uplift to the business user benefits of a given scheme. In this case 10% of the business user benefits described earlier in this chapter has been calculated and included in the wider economic benefits.

The methodology described above provides a robust structure around which to carry out analysis and report on LNER’s impact. Economic, social, and environmental impacts fall within each of the four channels, and some may overlap between channels.

This report does not account for every economic, social or environmental impact of LNER. For example, LNER has employed Social Value Portal to report on the social value of individual contracts let by LNER. This report also does not cover LNER’s own internal environmental impact monitoring.

### DATA SOURCES

In producing this assessment, we have used the following data sources:

- The financial statements and annual accounts of London North Eastern Railway Ltd and, where possible, carbon, employment and expenditure information provided directly by LNER
- Secondary research in the form of a literature review of comparable economic impact analysis studies to inform and benchmark our analysis with comparable similar studies
- DfT Transport Analysis Guidance (TAG) guidance, parameters and data
- Additional recognised information and data regarding the environmental impact of aviation travel; and Information from LNER covering patronage and future timetable changes.





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