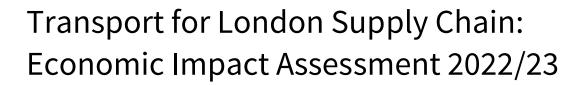


Transport for London Supply Chain: Economic Impact Assessment 2022/23

A Final Report by Hatch 29 September 2023



29 September 2023

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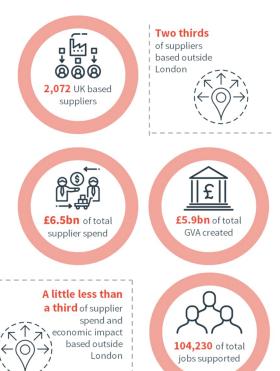
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## **Executive Summary**

- i. Transport for London (TfL) has commissioned Hatch to assess the economic impact supported by its expenditure with suppliers during the 2022/23 financial year. The assessment sought to understand the scale and geographic spread of the economic impacts stemming from the multiple billions TfL spends as part of its capital and revenue activities.
- ii. The assessment relied on a base data extract from TfL's procurement database, which has been augmented with additional evidence collected by TfL to arrive at a more accurate reflection of the geographic distribution of its supplier spend. Since the location recorded in the base data reflected a supplier's invoice address, driven by the location of their Headquarters, evidence from the following strands of research was incorporated into our assessment:
  - an in-house survey of senior staff within TfL that enquired about the actual location of spend and economic activity with large suppliers
  - a mapping exercise that traced the amount and location that TfL bus operators spend on bus manufacturing.
- iii. The assessment concluded that in 2022/23, TfL spent £6.5bn in the UK with 2,072 suppliers, which supported £5.9bn in Gross Value Added (GVA) and 104,230 jobs. That is, every £1m of TfL spend supported around 16 jobs across the UK. Moreover, about half (49%) of TfL suppliers were SME businesses.
- iv. Two thirds of TfL suppliers were based outside of London, in regions such as the South East and East of England, as well as the North West and West Midlands.
- v. A little less than a third of TfL spend and resulting economic impact occurs outside of London. Around 29,000 jobs were supported outside the capital, including 8,870 jobs in the North West and 5,160 in the North East.



## 1. Introduction

- 1.1 Transport for London (TfL) spends multiple billions annually on a range of goods and services to support its capital and revenue activities. These significant expenditure injections into the UK economy support economic activity across the country. TfL has commissioned Hatch to assess the economic impact generated through its expenditure with suppliers during the 2022/23 financial year.
- 1.2 This report documents the scale and geographic spread of the economic contribution of TfL's supply chain expenditure through:
  - a summary of the key findings of a modelling exercise that provided **economic impact estimates at a national, sub-national and local level**.
  - **case study analysis** with key suppliers that explore how this expenditure supports employment and wealth creation outside the capital.
- 1.3 It is structured as follows:
  - **section 2** outlines the key definitions and methodology for the economic impact assessment.
  - **section 3** provides economic impact estimates at a national, sub-national and local level, alongside case studies that bring these numbers to life.
  - **Section 4** explores the economic impact of TfL's supply chain expenditure outside the capital through deep dives in the North West and North East regions.

# 2. Methodology

2.1 This section provides definitions for the key concepts used in the economic impact assessment.

### **Definitions**

- 2.2 TfL's expenditure with its suppliers creates economic impacts through three channels:
  - **Direct impacts:** stem from the economic activity supported directly within TfL's Tier 1 suppliers.
  - **Indirect impacts:** stem from the economic activity supported through the rest of the supply chain.
  - **Induced impacts:** stem from the economic activity supported through the spending of employees working throughout the supply chain.
- 2.3 Together, these effects represent the total economic impact from this expenditure. Importantly, these impacts are spread across the UK, as TfL purchases from a wide range of suppliers. As such, the economic impact assessment has been carried out at:
  - the level of the UK.
  - **a sub-national level**, including the English regions, as well as Scotland, Wales and Northern Ireland.
  - **a local level,** including local authorities and constituencies<sup>1</sup>.
- 2.4 We measure these economic impacts in terms of:
  - **Jobs supported** as Full Time Equivalents (FTEs), to convert Full and Part Time jobs into a common currency.
  - Gross Value Added (GVA) the key measure of the value of economic activity of a firm, sector or region.
- 2.5 **Note that economic impacts are not measured in terms of turnover/sales/gross output.** This measure accounts only for the value of sales, and does not take into account the netting off of the value of bought in inputs into the production process. If we were to sum up the value of turnover across the economy, we would be double counting, since one firm's income is another's expenditure. Instead, we sum the *value added* components. This is the portion of turnover that is available for compensating employees in the form of wages, salaries and on-costs, and employers in the form of operating profits. GVA is, on average, roughly 50% of gross output across the economy.

### Methodology

2.6 Impacts have been estimated using Hatch Urban Solutions' input-output model for the UK and the regions. The basis of our assessment is a base data extract from TfL's procurement database

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<sup>&</sup>lt;sup>1</sup> The analysis has been based on the revised parliamentary constituency boundaries published in June 2023. For further information, please refer to https://commonslibrary.parliament.uk/boundary-review-2023-which-seats-will-change/

- in 2022/23, which has been augmented with evidence from an in-house survey of senior staff within TfL and evidence gathered by TfL on bus manufacturing expenditure with Tier 2 suppliers.
- 2.7 The remainder of the section provides a description of the data available and how it has been used into our analysis.

#### **Base Data**

- 2.8 In addition to the amount incurred with each supplier, the data extract from TfL's procurement database assigns:
  - the location of a supplier to a geography based on its invoice address (i.e. its HQ location linked to Companies House). The geographic allocation of spend, and hence resulting economic impact, has been primarily informed by this data, except where it has been augmented as described below.
  - the TfL expenditure taxonomy of a supplier, which we have used to allocate expenditure to Standard Industrial Classification (SIC)<sup>2</sup> codes for the purposes of our model.
  - whether a supplier is an SME<sup>3</sup> or a large corporate. This data has been used to estimate the percentage of SME suppliers relative to all suppliers in an area.

#### **Survey of Large Suppliers**

- 2.9 TfL carried out a survey of its Directors and the Commercial team to collect additional evidence on the sites where supplier spend is being channelled. This exercise focused on its **51 largest suppliers by value in 2022/23, which collectively accounted for about £2.4bn of spend** (representing 37% of total supplier spend). The survey of the P&C team returned 31 responses (61% response rate), while the survey of Directors returned 8 responses (16% response rate).
- 2.10 We therefore augmented the base dataset by **extracting the largest suppliers by value of spend in that year for whom survey evidence was available, and manually adjusting the location of their spend using the survey results.** This process was designed as a bottom-up sense check, because the location of activities may be different from the HQ address.
- 2.11 Using the evidence collected, approximately £1.3bn of supplier spend was reallocated to the sites where activity was judged by TfL to take place, rather than the supplier's invoice address.

#### **Bus Manufacturing Spend with Tier 2 Suppliers**

- 2.12 Bus operators (Tier 1 TfL suppliers) commission manufacturers (Tier 2 TfL suppliers) to build buses according to TfL specifications. **TfL has carried out an exercise that maps the amount that their bus operators spent with bus manufacturers in 2022/23**.
- 2.13 The mapping exercise suggests that bus operators (captured in TfL's Tier 1 supply chain) spent approximately £80m on the production of buses meeting TfL specifications with the commissioned manufacturers. This amount was spread across sites in Yorkshire and the Humber (44%), Scotland (39%) and Northern Ireland (18%).

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<sup>&</sup>lt;sup>2</sup> A five digit code that classifies a business's main area of economic activity.

<sup>&</sup>lt;sup>3</sup> Defined as a business with fewer than 250 employees and either a turnover total of less than or equal to £45m, or a balance sheet total of less than or equal to £40m.

- 2.14 The evidence collected through this mapping exercise have been incorporated into our economic impact model as follows:
  - Direct impacts continued to account for the GVA and employment directly supported by TfL's spending with its Tier 1 suppliers (the bus operators).
  - Modelling of indirect and induced impacts sought to explicitly include the data collected
    on spend with Tier 2 suppliers (the bus manufacturers), and as such reflect the location
    and sector of their activities. The modelling of indirect and induced impacts associated
    with the spend of bus operators included in the bus manufacturing mapping exercise has
    been appropriately augmented to eliminate double counting.

### **Estimating Local Impacts**

- 2.15 Local results were derived by apportioning regional results to local authority and constituency areas using suitable factors. These factors were based on the local authority and constituency breakdown of TfL supplier expenditure suggested by the data provided by TfL.
- 2.16 This approach implicitly assumes that local economies are not significantly different from those of their respective regions, which may not hold true for some small areas. Hence, at lower geographic subdivisions, there is a greater margin of error associated with economic impact estimates. This should be borne in mind when interpreting results at the local authority and constituency level.

# 3. Headline UK impacts

3.1 The section considers the economic contribution that TfL's supply chain expenditure supports at a national, sub-national and local level. It presents the key findings of the modelling exercise, alongside case study evidence showcasing the wider geographic reach it achieves.

## **Economic Impact Findings**

#### **UK Impacts**

- 3.2 In 2022/23, over nine tenths (93%) of TfL spend occurred on domestically based suppliers. TfL spent £6.5bn in the UK with 2,072 suppliers, of which about half (49%) were SMEs. The total economic impact generated through this supplier spending (including direct, indirect and induced effects) amounted to £5.9bn in Gross Value Added (GVA) and 104,230 jobs across the UK.
- 3.3 Notably, the UK level findings suggest that:
  - the scale of employment supported is larger than the entire population of Burnley<sup>4</sup>,
     and more people than GlaxoSmithKline employs worldwide<sup>5</sup>.
  - every £1m of TfL spend supported around 16 jobs.
  - every direct job supported by TfL spend with suppliers led to around an additional job being supported in the wider economy, through those suppliers' expenditure and that of their employees.

### **Regional Impacts**

- 3.4 TfL's expenditure supports suppliers, both large and small, spread across UK regions:
  - Two thirds (66%) of TfL suppliers were based outside of London. There was a large concentration of suppliers in the South East and East of England, as well as the North West and West Midlands regions.
  - More than two fifths of the suppliers in each region were SME businesses, except in the North East (36%) and Yorkshire and the Humber (37%) regions, as well as Northern Ireland (38%).
- 3.5 A little less than a third of TfL spend and resulting economic impact occurs outside of London (i.e. c.29,000 jobs). As examples, this includes 8,870 FTE jobs supported in the North West and 5,160 in the North East.

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<sup>&</sup>lt;sup>4</sup> Source: ONS, Midyear Population Estimates

<sup>&</sup>lt;sup>5</sup> GSK Annual Report 2022

	Total	Total	% of	Total Impact		Direct Impact		Indirect Impact		Induced Impact	
	Supplier Expenditure (£m)	Number of Suppliers	which SME suppliers	GVA (£m)	Jobs	GVA (£m)	Jobs	GVA (£m)	Jobs	GVA (£m)	Jobs
London	£4,610	699	49%	£4,120	75,270	£2,040	43,710	£1,170	21,170	£910	10,390
North West	£540	155	46%	£520	8,870	£240	4,870	£150	2,530	£120	1,470
South East	£370	389	50%	£330	5,210	£150	2,710	£100	1,580	£80	910
North East	£270	28	36%	£240	5,160	£130	3,510	£60	1,060	£50	590
South West	£320	83	51%	£230	2,690	£90	1,100	£100	1,120	£40	480
East of England	£110	235	51%	£100	1,700	£50	930	£30	500	£20	270
Yorkshire and The Humber	£60	111	37%	£90	1,240	£30	530	£30	480	£20	240
East Midlands	£70	139	49%	£70	1,280	£30	740	£20	350	£20	190
Northern Ireland	£70	8	38%	£70	1,260	£30	670	£30	490	£10	100
West Midlands	£70	149	52%	£50	930	£30	500	£10	270	£10	160
Scotland	£10	34	47%	£30	380	£4	90	£20	220	£10	70
Wales	£20	42	57%	£10	240	£10	150	£0	50	£0	40
United Kingdom	£6,520	2072	49%	£5,870	104,230	£2,850	59,500	£1,730	29,820	£1,290	14,910

Note: Supplier expenditure and GVA figures are rounded to the nearest £10m. Employment figures are rounded to the nearest ten. Figures may not add up due to rounding.

#### **Local Impacts**

3.6 Table 3.2 shows the ten local authorities outside London that experienced the largest economic impact as a result of TfL supplier expenditure inflows in 2022/23. These are spread across northern and southern England as well as Northern Ireland.

Table 3.2 Top 10 Local Authority Districts for TfL expenditure outside London										
Local Region		Total Supplier Total No		% of which	Total Impact					
Authority		Expenditure (£m)	of Suppliers	SME suppliers	GVA (£m)	Jobs				
Stockport	North West	£300	8	50%	£280	4,850				
Gloucester	South West	£210	<5	50%	£150	1,770				
Sunderland	North East	£190	<5	67%	£180	3,790				
Manchester	North West	£150	21	29%	£140	2,420				
Reading	South East	£100	10	60%	£90	1,410				
Reigate and Banstead	South East	£90	11	45%	£80	1,220				
Wiltshire	South West	£80	16	44%	£60	680				
Belfast	Northern Ireland	£70	<5	0%	£60	1,030				
Newcastle upon Tyne	North East	£70	7	14%	£50	1,080				
Sevenoaks	South East	£40	7	57%	£40	610				

Note: [1] Supplier expenditure and GVA figures are rounded to the nearest £10m. Employment figures are rounded to the nearest ten. Figures may not add up due to rounding. [2] Note that there is a greater margin of error associated with economic impact estimates at smaller geographic subdivisions (see Chapter 2). To be conservative and avoid spurious findings, economic impact estimates were redacted in some cases. These are indicated as "n/a" in the table.

3.7 Table 3.3 shows the ten parliamentary constituencies (as per the 2023 boundary review) outside London that experienced the largest economic impact as a result of TfL supplier expenditure inflows in 2022/23. Prominent pockets of TfL supplier activity include Stockport (in the North West), Gloucester (in the South West) and Houghton and Sunderland South (in the North East).

Table 3.3 Top 10 Parliamentary Constituency (2023 Boundaries) outside of London									
Constituency	Region	Total	Total No	% of which	Total Impact				
		Supplier Expenditure (£m)	of Suppliers	SME suppliers	GVA (£m)	Jobs			
Stockport	North West	£300	<5	25%	n/a	n/a			
Gloucester	South West	£210	<5	50%	£150	1,770			
Houghton and Sunderland South	North East	£190	<5	0%	n/a	n/a			
Manchester Central	North West	£150	17	35%	£140	2,400			
Earley and Woodley	South East	£100	14	50%	£90	1,460			
Dorking and Horley	South East	£80	<5	25%	£70	1,160			
Belfast South and Mid Down	Northern Ireland	£70	<5	0%	£60	1,030			
Newcastle upon Tyne Central and West	North East	£70	5	20%	£50	1,080			
Chippenham	South West	£60	7	57%	£40	480			
Sevenoaks	South East	£40	6	50%	£40	610			

Note: [1] Supplier expenditure and GVA figures are rounded to the nearest £10m. Employment figures are rounded to the nearest ten. Figures may not add up due to rounding. [2] Note that there is a greater margin of error associated with economic impact estimates at smaller geographic subdivisions (see Chapter 2). To be conservative and avoid spurious findings, economic impact estimates were redacted in some cases. These are indicated as "n/a" in the table.



### **Case studies**

3.8 To bring the above economic impact estimates to life, we have explored the impact TfL has on selected suppliers and their wider value chain. These case studies illustrate tangibly how TfL's contracts with major suppliers operating outside London widen the economic impact footprint of its supply chain spend. Moreover, they demonstrate how the valuable relationship TfL develops with suppliers sharing a common vision contributes towards the realisation of the UK's zero emissions transition.

#### Alexander Dennis (Debbie McCreath, Group Marketing Director)

"Alexander Dennis is a global leader in the design and manufacture of double deck buses and is also the UK's largest bus and coach manufacturer. Alexander Dennis offers single and double deck vehicles under the brands of Alexander Dennis and Plaxton, and has over 31,000 vehicles in service in the UK, Ireland, Europe, Hong Kong, Singapore, New Zealand, Mexico, Canada and the United States.

"TfL procures zero-emission buses from Alexander Dennis, and we are proud to support TfL in its ambitions to transition to a zero-emission bus fleet by 2034. We recently handed over the 1,500th battery-electric bus to Go-Ahead London through the BYD-Alexander Dennis partnership.

"[TfL's business] is very important to Alexander Dennis, we are absolute in our support for TfL to achieve Vision Zero. We want to support TfL through improving passenger experience to grow patronage, support modal shift to active transport. We are a trusted partner within the bus industry. We actively promote social active mobility and enable all sectors of society to access their daily lives: education, their livelihood, leisure and memories, friends and family. We are committed to supporting modal shift for the greater good through the drive for zero-emissions.

"Alexander Dennis [is] investing in our people for the ZE transition –

- Apprenticeships in cooperation with local colleges at all UK manufacturing sites
- Reskilling and skills development
- Summer internships across multiple functions
- Business and Engineering graduate trainee schemes
- Management & leadership talent programmes
- STEM outreach through schools and colleges.

"We are additionally a development partner for TfL's Bus Safety Standard [and] we were recognised with the TfL Supplier Award.

"[Alexander Dennis' activities take place] across all our UK sites – Falkirk, Larbert, Scarborough, Ballymena, Harlow, Anston and Farnborough. Moreover, we support a large supply and value chain in the UK."

# Siemens Mobility (Lak Herath-Culley, External Communications and Government Affairs Lead)

"Siemens Mobility is a front runner in intelligent transport solutions. For more than 160 years, we have been working to provide seamless, sustainable, reliable and secure transport solutions, transforming the everyday.

"Our core areas include rolling stock, rail automation and electrification, an extensive software portfolio, turnkey systems and related services. With our digital products and solutions, we enable mobility operators worldwide to make intelligent infrastructure, enhance passenger experience, guarantee availability and increase value, sustainably, over the entire lifecycle.

"At Siemens Mobility, we believe that it is the people who drive our organisation and pride ourselves on the diverse talent and expertise that each member brings to our team. We employ more than 5,000 people in the UK and work with 3,000 suppliers, 47% of which are UK based SMEs. Siemens Mobility is investing up to £200 million in the rail village at Goole, a site that spans 67-acres, the size of 35 football pitches. Our new facility in Goole, East Riding of Yorkshire, is due to create a further 700 direct jobs, including a number of apprenticeships, as well as a further 1,700 supply chain roles.

"We have around 2,000 industry experts across the UK in our rail infrastructure team, they are specialists in every aspect of the lifecycle of rail automation and electrification systems to ensure that millions of people can travel safely, efficiently and in an environmentally friendly way every day including the work with Network Rail to electrify the East Coast Main Line. Our UK team carries out research, development, manufacture, engineering, design, testing, commissioning and after-market support for our specialist solutions that touch every part of the passenger and freight journey from the first to the last mile.

"Our trains make up almost a quarter of UK passenger trains and we have 13 depots across the UK, from Southampton to Scotland. Together with our customers and partners we are transforming rail travel for the everyday.

"[TfL's business is] very [important to Siemens Mobility]. We are proud to be delivering the new Piccadilly line trains for Transport for London, the 94 new trains are based on our Inspiro design with half set to be manufactured at our state-of-the-art train manufacturing facility in Goole. There is also an option in the contract for future orders, for the Bakerloo line, Central line and Waterloo & City lines, subject to TfL getting the funding.

"From next year London Underground's new Piccadilly line trains will be assembled at Goole before they start entering passenger service from 2025. [While the activity will take place at] Goole, East Riding of Yorkshire, [there will be] some supply chain across the UK. Initially, we expect around 18-20% of the components for the trains to come from the UK and are aiming to further increase this. There will also be some manufacturing from Vienna and Germany. At peak production, the Piccadilly line contract will support hundreds of roles in Goole and at Vienna.

"[Moreover, it will provide] opportunities for more young people to get into the industry through apprenticeships. Siemens Mobility is also working with a number of local schools around Goole in STEM subjects to help inspire young people and encourage the future generation to work in the rail industry."

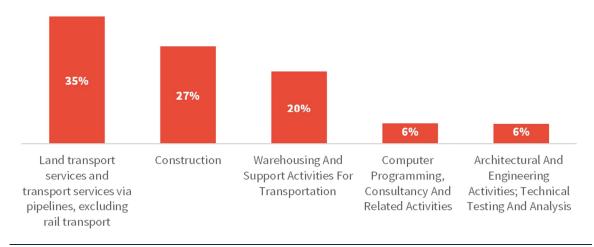
## 4. Region Spotlights

4.1 This section explores the economic impact of TfL's supply chain expenditure outside of London in more depth through spotlights for the North West and North East regions.

## **Impact in the North West Region**

- 4.2 In 2022/23, **TfL spend £540m with 155 suppliers based in the North West of England, of which 46% where SMEs**. It is the second most significant hub of activity after London in terms of total supplier expenditure.
- 4.3 This expenditure was predominantly channelled towards the land transport services and transport services via pipelines (excluding rail transport), construction and warehousing and support activities for transportation sectors, which together accounted for more than four fifths of supplier expenditure.

Figure 4.1 Top Five Sectors of TfL's Supplier Expenditure in the North West



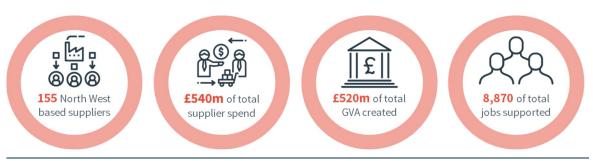
Source: Hatch analysis of Transport for London data, 2022/23

- 4.4 **A total economic impact of £520m in GVA and 8,870 jobs** was supported through TfL supplier expenditure in the North West, including direct, indirect and induced effects. To put these numbers into context:
  - TfL supplier expenditure supports more employment in total than the pharmaceuticals manufacturing sector in the North West in 2021<sup>6</sup>.
  - Every £1m of TfL spend in the North West supports a total of 16 jobs.
  - For **every direct job supported** in the North West by TfL supply chain spend, **an additional job is supported in its wider economy** through those suppliers' expenditure and that of their employees.

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<sup>&</sup>lt;sup>6</sup> Business Register and Employment Survey, ONS, 2021. Defined as SIC 21 – Manufacture of Basic Pharmaceutical Products and Pharmaceutical Preparations.

Figure 4.2 TfL's Supplier Expenditure Impact in the North West



Source: Hatch analysis based on Transport for London data, 2022/23

4.5 The parliamentary constituencies of **Stockport and Manchester Central** were important hubs of TfL spend inflows, and hence economic impact, as shown in Table 4.1. Appendix A identifies the most appropriate Member of Parliament (MP) corresponding to each of the new parliamentary constituencies in the table below, by matching it to its closer predecessor.

Table 4.1 Top 5 Parliamentary Constituency (2023 Boundaries) in the North West									
Constituency	Total Supplier	Total No of	% of which	Total Impact					
	Expenditure (£m)	Suppliers	SME suppliers	GVA (£m)	Jobs				
Stockport	£300	<5	25%	n/a	n/a				
Manchester									
Central	£150	17	35%	£140	2,400				
Salford	£30	<5	33%	£30	500				
Crewe and									
Nantwich	£30	5	20%	£30	500				
Stretford and									
Urmston	£10	8	25%	£10	240				

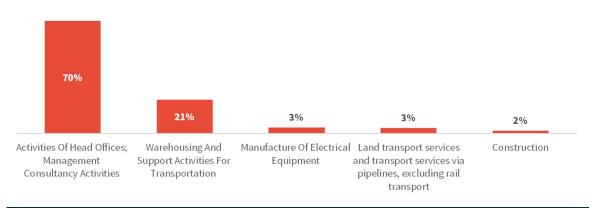
Note: [1] Supplier expenditure and GVA figures are rounded to the nearest £10m. Employment figures are rounded to the nearest ten. Figures may not add up due to rounding. [2] Note that there is a greater margin of error associated with economic impact estimates at smaller geographic subdivisions (see Chapter 2). To be conservative and avoid spurious findings, economic impact estimates were redacted in some cases. These are indicated as "n/a" in the table.



### **North East**

4.6 In 2022/23, **TfL spend £270m with 28 suppliers based in the North East of England, of whom 36% where SMEs**. This expenditure was predominantly channelled towards activities of head offices/management consultancy activities and warehousing and support activities for transportation sectors, which together accounted for over nine tenths of TfL supplier spend in the North East.

Figure 4.3 Top Five Sectors of TfL's Supplier Expenditure in the North East



Source: Hatch analysis of Transport for London data, 2022/23

- 4.7 **A total economic impact of £240m in GVA and 5,160 jobs** was supported by TfL supplier expenditure in the North East. To put these numbers into context:
  - TfL supports more employees than Northern PowerGrid (Northeast) Plc<sup>7</sup>.
  - Every £1m of TfL spend in the North East supports a total of 19 jobs.

Figure 4.4 TfL's Supplier Expenditure Impact in the North East



Source: Hatch analysis based on Transport for London data, 2022/23

4.8 The parliamentary constituencies of **Houghton and Sunderland South and Newcastle-upon- Tyne Central and West** were important hubs of TfL spend inflows in the North East, and hence economic impact, as shown in the table below.

<sup>&</sup>lt;sup>7</sup> Regulatory Accounts for the Year Ended 31 March 2023 for Northern Powergrid (Northeast) Plc. Accessed at: https://www.northernpowergrid.com/sites/default/files/assets/Northeast%20Reg%20Accs%2022-23%20Final%20-%20signed%20July%202023\_1.pdf

Table 4.2 Top 5 Parliamentary Constituency (2023 Boundaries) in the North East									
Constituency	Total Supplier	Total No of	% of which	Total Impact					
	Expenditure (£m)	Suppliers	SME suppliers	GVA (£m)	Jobs				
Houghton and	£190	<5	0%	n/a	n/a				
Sunderland									
South									
Newcastle	£70	5	20%	£50	1,080				
upon Tyne									
Central and									
West									
Middlesbrough	£10	<5	50%	£10	190				
and Thornaby									
East									
Darlington	£5	<5	0%	£4	90				
Newcastle	<£1	<5	0%	<£1	10				
upon Tyne									
East and									
Wallsend									

Note: [1] Supplier expenditure and GVA figures are rounded to the nearest £10m. Employment figures are rounded to the nearest ten. Figures may not add up due to rounding. [2] Note that there is a greater margin of error associated with economic impact estimates at smaller geographic subdivisions (see Chapter 2). To be conservative and avoid spurious findings, economic impact estimates were redacted in some cases. These are indicated as "n/a" in the table.

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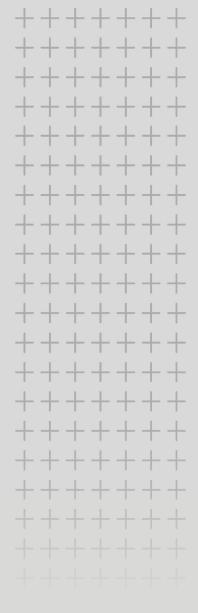
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