in partnership with

Research Report (Draft Final)

Client: Doncaster Council

Project Title: Economic Strategy Research; Sectoral and Spatial Priorities

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1. Executive Summary

1.1 Background

In 2018, Doncaster published its Inclusive Growth Strategy[1], which set out its ambition for an economy that promoted inclusive growth "to enable Doncaster people, places and businesses to enjoy improved prosperity by participating in a growing and productive economy".

Doncaster Council is in the process of developing a new Economic Strategy for the borough. To support the development of the new economic strategy, the Council commissioned Ortus Economic Research in partnership with Kada Research to deliver a study which is designed to create insights that will support the basis for prioritisation and interventions to deliver the borough's ambition for a regenerative and inclusive economy.

1.2 Aims and objectives

The key aim of this study is to generate insights which provide the basis for prioritisation and interventions to deliver the borough's ambition for a regenerative and inclusive economy, taking into account existing strategic intentions.

This study will be followed by a second phase, which will focus on identifying the actions and interventions that stakeholders need to take to realise the potential and opportunities identified here.

1.3 Methodology

The study has called on three research tasks in order to collate the required evidence. These are:

- Desk research – a review of relevant documents, strategies, market reports and other written materials which relate to the key research questions, sector specialisms and local, regional and national factors of relevance.
- Data analysis – an analysis of a wide range of data sources to assess the presence and strength of local Industry Specialisms, spatial factors and other relevant indicators of economic performance.
- Consultation – a mix of group sessions and individual interviews with a wide range of stakeholders, including Council staff, partner organisations, convened groups, education providers and local businesses.

1.4 Key findings

- Given the current prevalence of low household incomes and employment in low wage sectors in Doncaster, the 'economic mission' for the Industry Specialisms should be to support a regenerative and inclusive economy in Doncaster, primarily (but not exclusively) through creating more highly-productive economic activity, including the creation of high-value, highly-skilled employment opportunities.
- Specialisms have a role to play in supporting a regenerative and inclusive economy in Doncaster, both through their own activities and through supply chains and employee spend in the foundational economy. But their primary role within the Strategy should be to accelerate a shift in Doncaster's economic structure towards higher value activity, so that a greater proportion of

[1] Doncaster Council, 2018, *Inclusive Growth Strategy 2018-2021*. See https://dmbcwebstolive01.blob.core.windows.net/media/Default/Council%20and%20Democracy/Documents/Doncaster%20Inclusive%20Growth%20Strategy%202018-2021-1.pdf

Doncaster's economic and employment growth is driven by high value sustainable economic activity.

- This study recognises the varied role that specialisms can play in achieving inclusive and regenerative economic goals, and also the need to focus on existing strengths, aspirational opportunities and support for the foundational economy (the 'everyday' economy, providing goods and services that people and businesses call upon continually). For this reason, the proposal for specialisms on which the economic strategy should focus upon is split into those three categories; strength-based specialisms, aspirational specialisms and foundational specialisms.
- The 'specialisms' that should be considered as priorities, based on this research study, are as follows the conclusion that the following should be pursued:
    - Strength-based specialisms;
        - Advanced Engineering and Technology
        - Mobility
        - Advanced materials
    - Aspirational specialisms;
        - Creative and Digital (to include Culture)
    - Foundational specialisms;
        - Health and Care
        - Support and Professional Services
- A key facet of the approach to integrating a specialisms-based approach to economic growth must be avoid bounding policies, activities and initiatives by tight definitions. A balance between flexibility and focus needs to be found.
- Doncaster needs an innovation-led growth model which is appropriate to local economic circumstances. The concept of 'innovation-led growth' needs to be adapted to recognise Doncaster's starting point which includes a low skills base, a relative lack of innovation assets and organisations within the borough, and a limited property offer which does not meet the needs of desk-based innovation businesses. Leading the evolution towards a stronger innovation culture through education, whilst supporting innovation as a process, should be two key elements of the economic strategy.
- Broadly, the goal of creating spatially co-located 'clusters' of firms operating in similar sectors, addressing similar markets or sharing similar technologies should be included as a strategic objective. The Council should manage its own assets and development opportunities accordingly, and encourage partners to follow this approach. Ensuring Doncaster's communities are able to sustainably access the opportunities provided in such locations should be a parallel objective.
- Joint working with South Yorkshire partners can add value to innovation-led growth in Doncaster, as priority sectors are similar across the sub-region and other Local Authorities have adopted different approaches which could provide useful lessons. However, Doncaster should not be constrained in identifying external partners to accelerate innovation-led growth, and should identify the most appropriate expertise to draw upon to support innovation in each of the Industry Specialisms.
- There are a number of levers which the Council can use to support and accelerate innovation-led growth in Doncaster:
    - Convening role: bringing together like-minded businesses to discuss shared issues / challenges and identify areas for shared innovation activity.

  - Partnership role: engaging external innovation / R&D partners and connecting them with Doncaster businesses who have identified innovation support needs.
  - Coordination role: bringing together services which support innovation-led growth (e.g. education and training providers) to ensure provision is aligned with future needs.
  - Community engagement role: raising awareness of the employment opportunities arising through the specialisms / innovation-led growth, and encouraging local people to take them up through outreach work and support programmes.
  - Place-making role: creating appropriate spaces and an attractive environment for investment; influencing development through the planning system (including acting to deter development which does not generate high-value, high-skilled jobs to ensure that land / space is retained for innovation-led growth).

- The granting of city status provides an opportunity to enhance Doncaster's profile externally and create increased confidence locally. It also provides access to city-based networks which Doncaster could use to create new partnerships and collaborations.

- When it comes to articulating the strategy and developing structures, the objective of focusing on Industry Specialisms must be brought into line with existing ideas that flow from other strategies, primarily the Education and Skills Strategy 2030. Our recommendation for achieving this alignment is to adopt a model which combined sector specialisms, with niches drivers of opportunity, as outlined below. This provides for a focus on four 'sectors of opportunity', which all respond to four niche drivers that have been identified in this research study. This model simplifies the concept of Centres of Excellence and aligns them with sectors, but then aligns CofE activity to recognise, address and respond to the niche drivers (but not on an exclusive basis, as this would be too inflexible). This approach achieves the following objectives:
  - It ensures that the specialisms identified in this study are captured
  - It identifies key niche opportunities that are also identified in this study
  - It maintains in large part the sectoral focus of the Centre of Excellence but redefines 'green tech' as a niche opportunity rather than a sector in its own right
  - It reflects the need for flexibility in the delivery of the Centre of Excellence idea (built around the concept of Talent and Innovation Ecosystems) and cross-CofE working
  - It acknowledges the need to focus talent development and innovation support around the niche drivers that are of particular relevance to the Doncaster economy, but which may change over time
  - It acknowledges the need to address niche opportunities through development across multiple sectors. For example, green tech presents opportunities for engineering, materials, professional services, digital and creative businesses, all aligned to technology and market development in the area of green technology.

2. Introduction

In 2018, Doncaster published its Inclusive Growth Strategy[2], which set out its ambition for an economy that promoted inclusive growth "to enable Doncaster people, places and businesses to enjoy improved prosperity by participating in a growing and productive economy". The strategy set out six drivers of inclusive growth with 'game changing' actions.

Doncaster Council is in the process of developing a new Economic Strategy for the borough. This responds not only to emergent thinking around the role of the economy in a flourishing borough, but also a range of new 'drivers for change' which have emerged during the intervening period. Examples include the climate and bio-diversity crisis, the Covid-19 pandemic, the UK's departure from the EU and increased inequalities along with the current cost of living crisis. Together, these emerging factors have led to a questioning of the prevalent neo-liberal economic model.

The Council has shown leadership in making the case for a change of direction. The new Borough Strategy, Doncaster Delivering Together[3], along with a range of other policies and strategies, have been developed to set and articulate the direction of travel.

Doncaster Delivering Together also elevates the need to improve wellbeing, with a central mission for *thriving people, places and planet*. Key to its success is the need to be more ***regenerative*** – going beyond sustainability, becoming more ***place-based*** – local solutions for local people, and creating a ***wellbeing economy*** – an economy that delivers human and environmental wellbeing. It also sets the scene for the development of the new economic strategy to be based on **eco-systems** thinking and that capitalises on Doncaster's newly granted City Status.

There is now an emphasis on co-creating a Doncaster based on a shift towards the regeneration of all kinds of capital - social, human, natural, manufactured and financial - as opposed to a system that just looks to extract or exploit capital for the progression of others. The role of the economy in this approach is therefore to play a role in creating a new *Wellbeing Economy* that is regenerative and inclusive in its nature. This is a key development and drives a number of implications for the economic strategy, including a shift in the thinking about what a successful economy looks like, emphasising a different set of outcomes that are better aligned to the concept of wellbeing, inclusivity and regenerative use of capital.

To support the development of the new economic strategy, the Council commissioned Ortus Economic Research in partnership with Kada Research to deliver a study which is designed to create insights that will support the basis for prioritisation and interventions to deliver the borough's ambition for a regenerative and inclusive economy. This report represents the first output in this project, and is focused on conclusions and recommendations in relation to Industry Specialisms going forward. The second part of the study will produce an action plan.

2.1 Key messages from the 2018 Industry Specialisms report

To support the development of the 2018 Inclusive Growth Strategy, Doncaster Council commissioned Ortus Economic Research along with Sheffield University to deliver a study of Industry Specialisms within the Doncaster economy[4]. The study drew a number of conclusions which fed into the Inclusive Growth Strategy, including the following:

[2] Doncaster Council, 2018, *Inclusive Growth Strategy 2018-2021*. See https://dmbcwebstolive01.blob.core.windows.net/media/Default/Council%20and%20Democracy/Documents/Doncaster%20Inclusive%20Growth%20Strategy%202018-2021-1.pdf

[3] Team Doncaster, *Doncaster Delivering Together*. See https://dmbcwebstolive01.blob.core.windows.net/media/Tenant2/Documents/DDT%20Prospectus%20-%20Single%20Pages%20-%20FINAL.pdf

[4] Ortus Economic Research and Sheffield University for Doncaster Council, 2018, *Industrial Specialisms in the Doncaster Economy*

"By looking horizontally across our whole economy, rather than just vertically into individual sectors it is possible to identify specialisms which bring together multiple related sectors. This 'platforms' approach helps to identify the niche products/services, skills, techniques, tools and business models that an economy is founded on. Analysis led…suggests Doncaster has four main specialisms with significant growth potential:

- Engineering & Technology (an established platform): Engineering and technology products and services (e.g. civil engineering) and those that rely on engineering and technology skills, tools and inputs.
- Mobility (an established platform): Transporting people and goods across all modes including the products and services that support road, rail and air transport and infrastructure.
- Materials (an opportunity platform): The production, supply of plastics, glass, metals, stone, rubber and related products and the technologies required to create them.
- Creative & Digital (an opportunity platform): Industries which trade on individual and organisational creativity, generate and distribute digital content, utilise digital platforms as the basis for the delivery of their products or create/exploit digital technology. The main basis for this platform being chosen is the prospect of the High Melton investment by 360 Degrees Media.

In addition, the study recommends a fifth, non-specialist platform - Supporting Services, based on its fundamental importance to a modern, growing economy[5]."

Four years on from this study, Doncaster Council is keen to refresh the evidence base and consider how Industry Specialisms might be integrated into the new Economic Strategy with its focus on inclusive, regenerative growth and the development of a wellbeing economy.

2.2 Aims and objectives

The key aim of this study is to generate insights which provide the basis for prioritisation and interventions to deliver the borough's ambition for a regenerative and inclusive economy, taking into account existing strategic intentions.

Specific objectives that support this aim include to:

- provide an overview of the progression of Industry Specialisms identified in prior strategies and research.
- consider the potential future of those Industry Specialisms, considering notable recent changes, recent context and the potential for eco-systems development.
- explore the potential addition of a 5th Industry Specialism in education/knowledge economies and research.
- explore the relationship and balance required between Industry Specialisms and the Foundational Economy in Doncaster.
- explore the spatial approach and role of the diverse towns, communities and innovation sites in establishing a regenerative and inclusive economy.
- Explore how the newly granted City Status can be capitalised upon in this context.

The second part of the study will focus on clearly identifying the actions and interventions that stakeholders need to take to realise the potential and opportunities identified here. This will include consideration of the levers available to the Council and partners, the partnerships required, examples of best practice and to establish baselines and milestones against which progress can be assessed.

[5] Doncaster Council, *Inclusive Growth Strategy 2018-2021*

2.3 Methodology

The study has called on three research tasks in order to collate the required evidence. These are;

- Desk research – a review of relevant documents, strategies, market reports and other written materials which relate to the key research questions, sector specialisms and local, regional and national factors of relevance.
- Data analysis – an analysis of a wide range of data sources to assess the presence and strength of local Industry Specialisms, spatial factors and other relevant indicators of economic performance.
- Consultation – a mix of group sessions and individual interviews with a wide range of stakeholders, including Council staff, partner organisations, convened groups, education providers and local businesses.

2.4 Report structure

The report is structured in three further sections, as follows;

- Section 3 reviews spatial considerations for the economic strategy, examining existing spatial patterns of economic activity, the distribution of challenges and opportunities across the borough and identifying other strategies and policies on which to build.
- Section 4 reviews sector specialisms in the Doncaster economy, beginning with an assessment of cluster strength and then reviewing in detail nine candidate specialisms from a quantitative and qualitative perspective.
- Section 5 presents the key conclusions of the study.

3. Spatial considerations

3.1 A regenerative and sustainable wellbeing economy

Doncaster's ambition to develop a regenerative and inclusive wellbeing economy means re-shaping the local economy so that it benefits people, places and the planet. In spatial terms, this implies an economy where new developments are brought forward in cognisance of impact on the local and global environment, where the existing business base is supported to become more regenerative and inclusive, and where barriers preventing local people from accessing good quality employment are addressed.

This section of the report considers the spatial implications of Doncaster's ambition to develop a regenerative and inclusive wellbeing economy, and the interaction between the Industry Specialisms and Doncaster's economic geography.

3.2 A large and complex economic geography

Doncaster covers a very large geographic area of 219 square miles, with a distance of 18 miles north to south and 20 miles east to west. Doncaster is a 'place of places': in addition to the main urban area which accounts for roughly half of the total population, the Local Plan[6] notes that Doncaster's population is distributed across seven main towns which each serve a wider catchment area, plus ten service towns and villages which provide housing, employment, retail, and key services and facilities for the local area, and a further 40 defined villages.

Doncaster benefits from excellent access to the strategic transport network, with the A1(M) running from the south east to the north west of the Borough, the M18 passing from the south west to north east, and the M180 providing links east to the south bank of the Humber. The East Coast Mainline bisects the Borough from north to south, providing excellent rail connectivity to London and Scotland. Doncaster Sheffield Airport (DSA) in the south east of the Borough provides an aviation gateway to South Yorkshire (although its future is currently unclear). However, whilst connectivity to the surrounding areas is good, the speed and quality of linkages within the Borough vary considerably and some communities are geographically isolated.

Roughly half the area of the Borough is classed as Green Belt land, with the remainder outside the defined settlements being classed as 'countryside'. Significant areas of the Borough (over 40% of the land area) are at risk from flooding, with large parts of the east and north east being classed as within the Environment Agency's Flood Zone 3. In total, over three-quarters of the land area is either within the Green Belt or medium to high-risk flood areas, significantly constraining the land available to support regenerative and inclusive growth. Future employment growth is largely expected to be accommodated at three key opportunity sites – the city centre (including Waterfront), the Unity development in the north east of the Borough, and at GatewayEast, adjacent to DSA.

3.3 Spatial distribution of economic activity

Designing policy for regenerative and inclusive growth needs an understanding of how jobs and businesses are located in relation to different communities, how easily these jobs are accessed, and the extent to which different businesses and places will benefit from growth in the Industry Specialisms.

This section begins to provide this understanding by looking at the spatial dimensions of the existing business and employment base in Doncaster. To do this we have used official statistics available at a smaller geography than the Doncaster local authority area. Where possible we have used Lower-layer Super Output Areas (LSOAs – small neighbourhood areas defined by the Office for National Statistics) or Middle-layer Super Output Areas (MSOAs – groups of LSOAs). Not all socio-economic data is

[6] Doncaster Council, 2021, *Doncaster Local Plan 2015-2035, Adopted September 2021*, see: Doncaster Local Plan 2015-2035 Adopted Version (windows.net)

available at this geographical level, and sometimes data is not as recent as national or local authority level data. Where we combine data sources to create one indicator we have therefore used datasets from different years in a small number of cases.

3.3.1 Business and employment

The table below outlines the proportion of the business base and employment in Doncaster by broad sector. Wholesale/Retail trade and Repair of Motor Vehicles comprises the largest proportion of the business base in Doncaster at 16.8%. The second largest proportion at 15.3% is the Construction sector. With regards to employment, the largest proportion in Doncaster is in the Human Health and Social Work sector at 16.9%. The smallest proportion of the business base and employment in Doncaster is in the Mining and Quarrying and Electricity, Gas, Steam and Air Conditioning Supply sectors.

Table 1: Business and Employment by broad sector

Broad sector	% of Doncaster businesses	% of Doncaster employment
A : Agriculture, Forestry and Fishing	3.0%	0.8%
B : Mining and Quarrying	0.1%	0.1%
C : Manufacturing	5.4%	8.5%
D : Electricity, Gas, Steam and Air Conditioning Supply	0.1%	0.1%
E : Water Supply; Sewerage, Waste Management / Remediation Activities	0.6%	0.8%
F : Construction	15.3%	6.2%
G : Wholesale and Retail Trade; Repair of Motor Vehicles	16.8%	14.6%
H : Transportation and Storage	15.7%	12.3%
I : Accommodation and Food Service Activities	7.1%	6.2%
J : Information and Communication	3.2%	1.5%
K : Financial and Insurance Activities	1.6%	1.7%
L : Real Estate Activities	3.2%	1.0%
M : Professional, Scientific and Technical Activities	9.9%	4.6%
N : Administrative and Support Service Activities	6.8%	7.7%
O : Public Administration and Defence	0.3%	4.6%
P : Education	1.8%	8.5%
Q : Human Health and Social Work Activities	3.6%	16.9%
R : Arts, Entertainment and Recreation	1.6%	2.3%
S : Other Service Activities	4.1%	1.7%

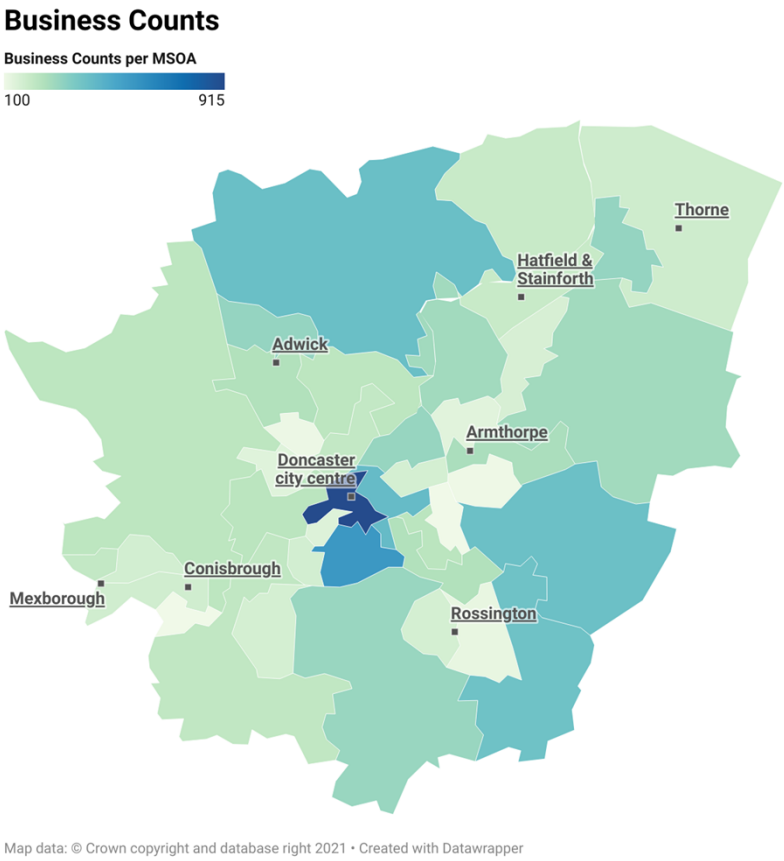
Source: ONS Business Counts 2022, ONS Business Register and Employment Survey (BRES) 2021

3.3.1.1 Spatial dimensions of business

Business density (business per 1,000 people) in Doncaster is lower than the England average, although it is higher than its South Yorkshire neighbours. This city-wide average masks the spatial differences across Doncaster, where we see variations in both absolute concentrations of business and business density.

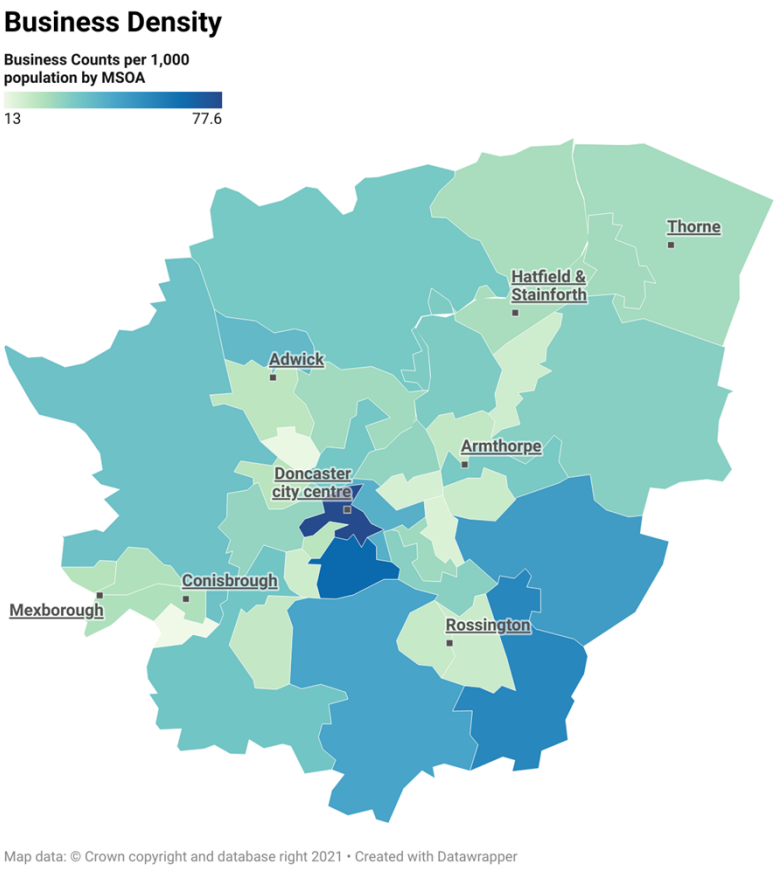
As would be expected, Doncaster city centre has the highest business counts. However, there is a mixed picture in terms of the relationship between business counts and deprivation. Some areas with high rates of deprivation also have lower business counts, for example towards Mexborough and Edlington and Warmsworth. However, the Index of Multiple Deprivation (IMD – see Appendix) shows that the most deprived wards are in the city centre and slightly north of the centre where business numbers are high.

Figure 1: Business counts by MSOA



Source: ONS UK Business Counts, 2022

Figure 2: Business density by MSOA



Source: ONS UK Business Counts, 2022

Similarly, whilst the city centre has the highest levels of business density and high rates of deprivation, the south east of Doncaster has relatively high business density and low levels of deprivation, for example around Rossington and Bawtry. This suggests that the number of employers per se is not a driver of deprivation and that factors such as the level and type of employment, wages, and skills should be the focus of inclusive growth policies.

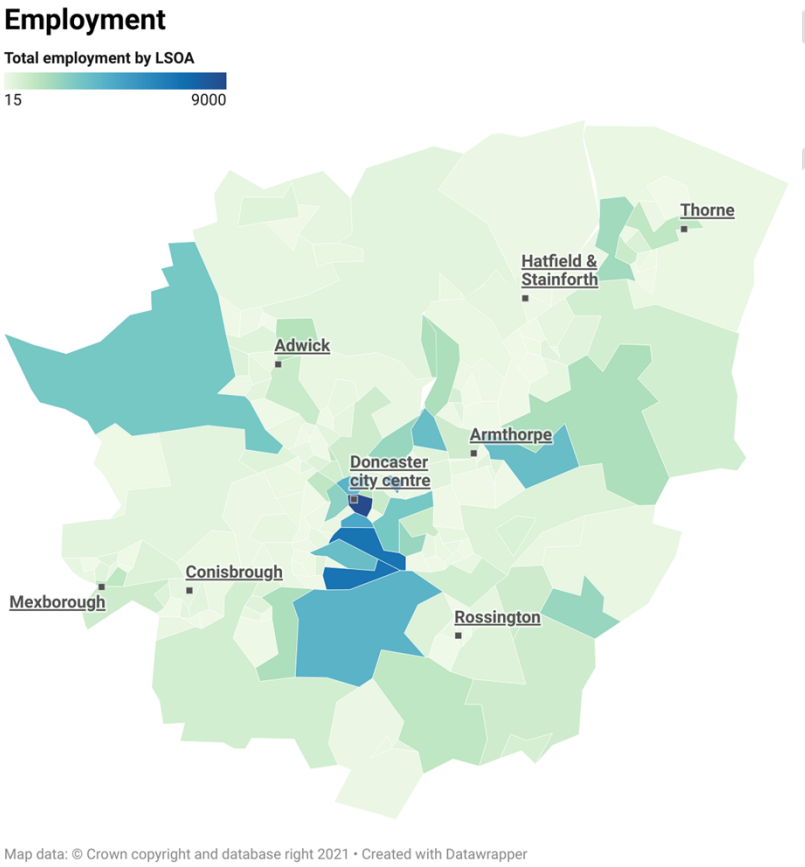
3.3.1.2 Spatial dimensions of employment

Looking at where people work, the concentration of jobs in the city centre and areas immediately to the south is even more pronounced than the concentration of businesses.

It is also important to assess the location of jobs in relation to where people live. The second map below shows employment density, defined as employment per head of population, within each LSOA. This shows that parts of the Borough, especially the north and north east have low employment density, suggesting limited opportunities for residents to work locally.

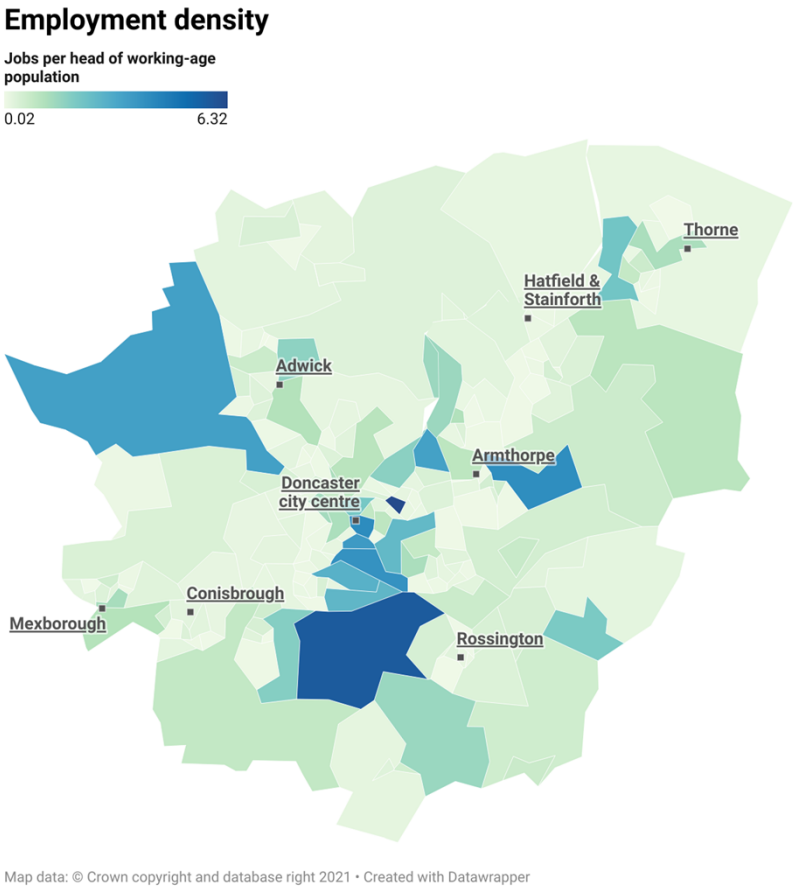
Interestingly, whilst areas in the south east of the Borough have relatively high business density, employment levels and density are lower. The key opportunity sites identified below provide an opportunity to increase employment in the Industry Specialisms, especially in the south east, notwithstanding uncertainty over the airport.

Figure 3: Employment by LSOA



Source: ONS BRES 2021

Figure 4: Employment density by LSOA



Source: ONS BRES 2021

3.3.1.3 Spatial distribution of business and employment key findings

The analysis provides three headline messages:

- The north east of the borough has low business density, resulting in lower levels of employment.
- The north of the borough also has relatively low employment density compared to the size of the local population, which means local people need access to job opportunities in other parts of Doncaster.
- The city centre has highest concentration of economic activity, but this has not prevented some central areas from being the most deprived. Inclusive growth policy interventions will be needed to help residents here benefit from developments in the city centre/Waterfront opportunity sites.

3.4 Key spatial challenges

This section provides a review of wages and incomes, inactivity and unemployment and access to employment hotspots and development sites. It sets out implications arising for the strategy from that analysis.

3.4.1 Wages

Understanding how wages differ across Doncaster is important when considering how individual sectors can contribute to regenerative and inclusive growth.

3.4.1.1 Wages overview

Before unpicking the spatial differences in wages within Doncaster the tables below provide an overview of differences between sectors, gender pay gaps and the difference between workplace and resident earnings. All data refers to the median earnings of full-time workers, unless stated otherwise.

Starting with sectors, where wages data is only available at a regional level, the data show that Doncaster has a larger proportion of jobs in sectors with lower average wages than the economy as a whole. This is precisely why the economic strategy seeks to create more higher productivity and higher value jobs through innovation in the specialisms.

Table 2: Gross weekly wages by sector

Broad sector	Gross average weekly pay	% of Doncaster employment
A : Agriculture, Forestry and Fishing	369.1	0.8%
B : Mining and Quarrying	785.2	0.1%
C : Manufacturing	562.1	8.5%
D : Electricity, Gas, Steam and Air Conditioning Supply	763.8	0.1%
E : Water Supply; Sewerage, Waste Management / Remediation Activities	583.1	0.8%
F : Construction	600.0	6.2%
G : Wholesale and Retail Trade; Repair of Motor Vehicles	384.7	14.6%
H : Transportation and Storage	559.2	12.3%
I : Accommodation and Food Service Activities	208.6	6.2%
J : Information and Communication	599.0	1.5%
K : Financial and Insurance Activities	595.0	1.7%
L : Real Estate Activities	490.3	1.0%
M : Professional, Scientific and Technical Activities	557.5	4.6%
N : Administrative and Support Service Activities	397.6	7.7%
O : Public Administration and Defence	531.6	4.6%
P : Education	478.8	8.5%
Q : Human Health and Social Work Activities	431.8	16.9%
R : Arts, Entertainment and Recreation	328.5	2.3%
S : Other Service Activities	360.6	1.7%
Average	465.9	

Source: Annual Survey of Hours and Earnings (ASHE), 2021

Relatively low wages within Doncaster may explain differences between resident and workplace earnings. This is especially notable at a Parliamentary Constituency level.

Table 3: Gross weekly wages by constituency

Constituency	Resident median gross weekly pay £	Workplace median gross weekly pay £
Don Valley	597.9	485.4
Doncaster Central	545.9	548.5
Doncaster North	574.9	528.3
Doncaster	568.9	536.6
England	613.3	613.3

Source: Annual Survey of Hours and Earnings (ASHE), 2021

On average, people living in Doncaster earn around £32 per week more than people who work in Doncaster, suggesting some higher paid residents commute out of the city to work. This is most notable in Don Valley constituency, where resident incomes are £120 a week more than workplace incomes. However, this trend is reversed for Doncaster Central where resident pay is less than workplace pay, indicating that residents in more deprived central areas are not benefitting from better paid jobs in those areas. Incomes at MSOA level are discussed further below.

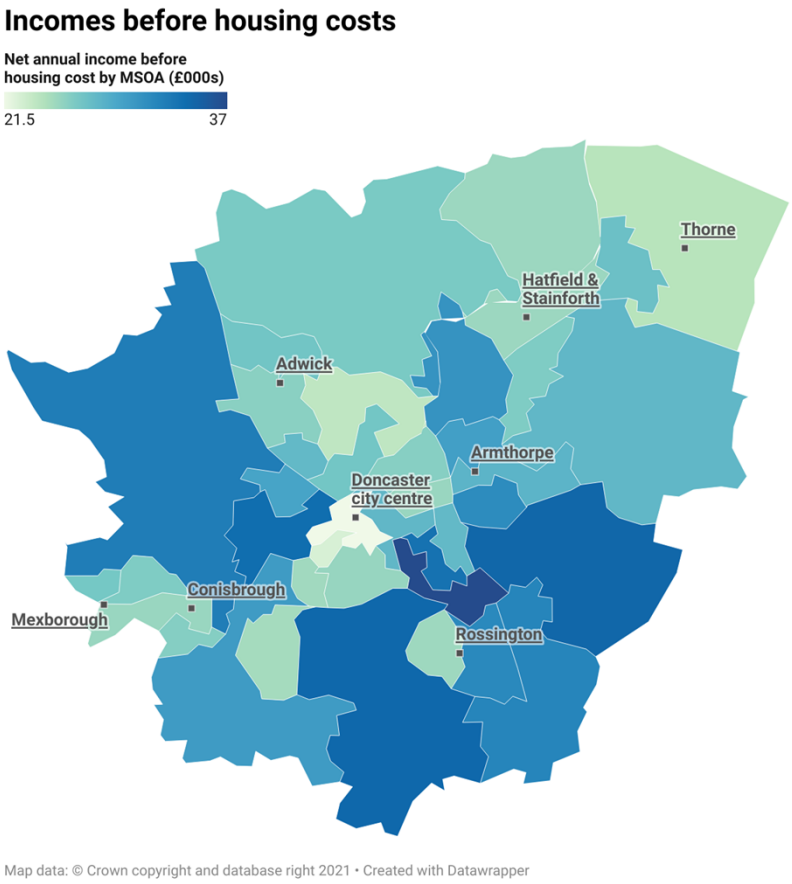
When it comes to the gender pay gap, this currently stands at 21.3% for median pay in Doncaster, compared to 15.7% in England as a whole, highlighting an area to be addressed by policy to encourage inclusive growth.

Gender pay inequality in Doncaster could be a consequence of the sectors men and women are employed in. Of women who are working, 43% are employed in public administration, education and health, and 16% in distribution, hotels and restaurants, which are generally lower paid sectors. Meanwhile, the breakdown of male employment is more even across higher and lower paid sectors. Of course, different roles and occupations within sectors – as well as the number of hours worked – will also influence wage rates.

3.4.1.2 Spatial income disparities

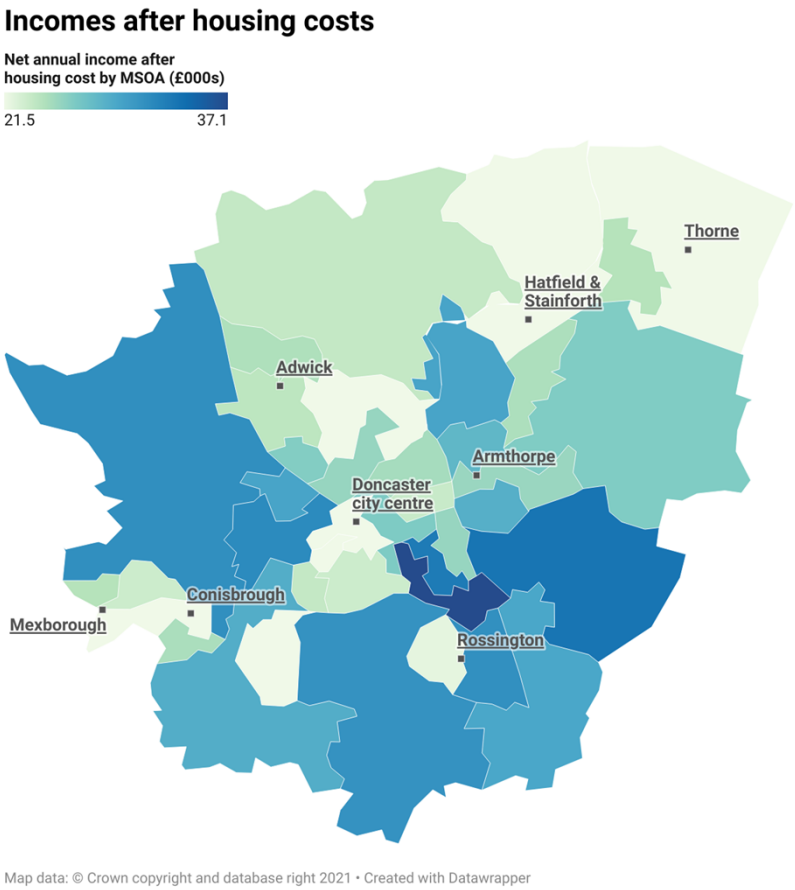
The maps demonstrate that Doncaster city centre has the highest net annual income in the borough. The south and west also demonstrate high income as well as the south east towards Finningley where DSA is situated. The north of Doncaster exhibits the lower annual incomes and the Hexthorpe & Balby North area exhibits the lowest. Given that the north of the borough also exhibits lower business and employment density and has longer travel time to employment sites by modes excluding car (see section 2.4.3 below), work in this region needs to be more highly paid, secure, supportive of wellbeing and inclusivity, and more accessible.

Figure 5: Income before housing costs by MSOA



Source: ONS: Net annual household income (equivalised) before housing cost (2018)

Figure 6: Income after housing costs by MSOA



Source: ONS: Net annual household income (equivalised) after housing cost (2018)

3.4.1.3 Spatial considerations of wages and sectors

The Council's priority is to use Industry Platforms, alongside economic and skills interventions, to create the higher level ecosystem of thriving people, places and planet need to deliver regenerative and inclusive growth, led by Doncaster's Industry Specialisms. The ambition is to create more higher-skilled and higher-paid jobs to boost Doncaster's productivity and the prosperity of its population.

To spatially understand the nature of jobs in Doncaster, we have categorised the broad industrial sectors as higher wage, average wage, and lower wage sectors. This has been done by benchmarking the regional average weekly pay in each sector against the average workplace pay in Doncaster, to categorise sectors as follows:

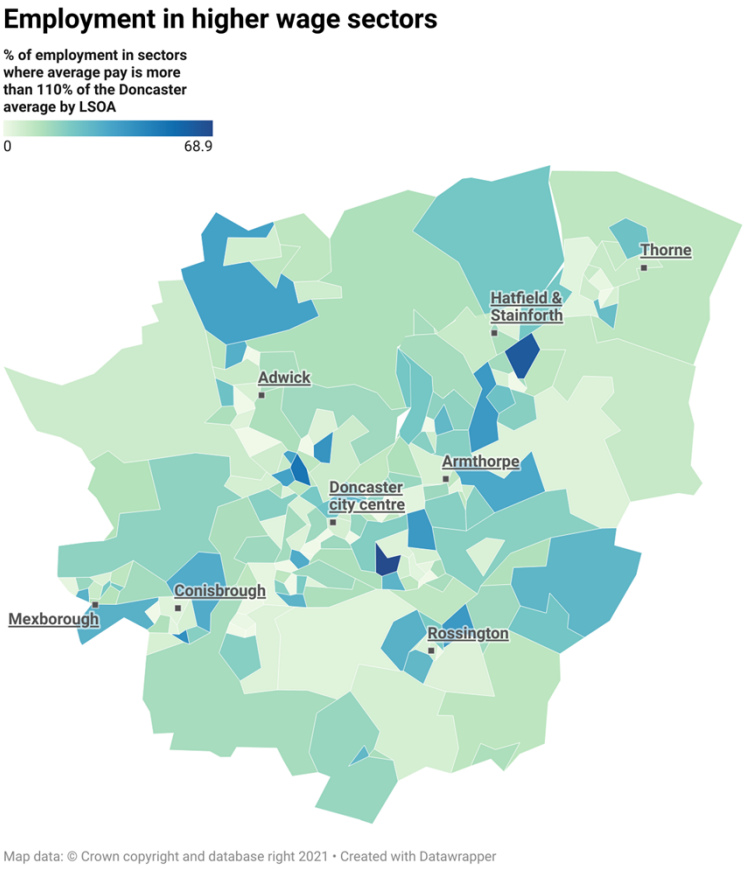
Category	Definition
Higher wage	More than 110% of the Doncaster average workplace weekly pay
Average wage	Between 90%-110% of the Doncaster average workplace weekly pay
Lower wage	Lower than 90% of the Doncaster average workplace weekly pay

Source: Kada Research

The following maps show the percentage of employment in each of these categories in each LSOA. Showing a similar pattern to household incomes where the north east is low compared to other parts of the borough, the north east also has a higher proportion of employment in lower wage sectors.

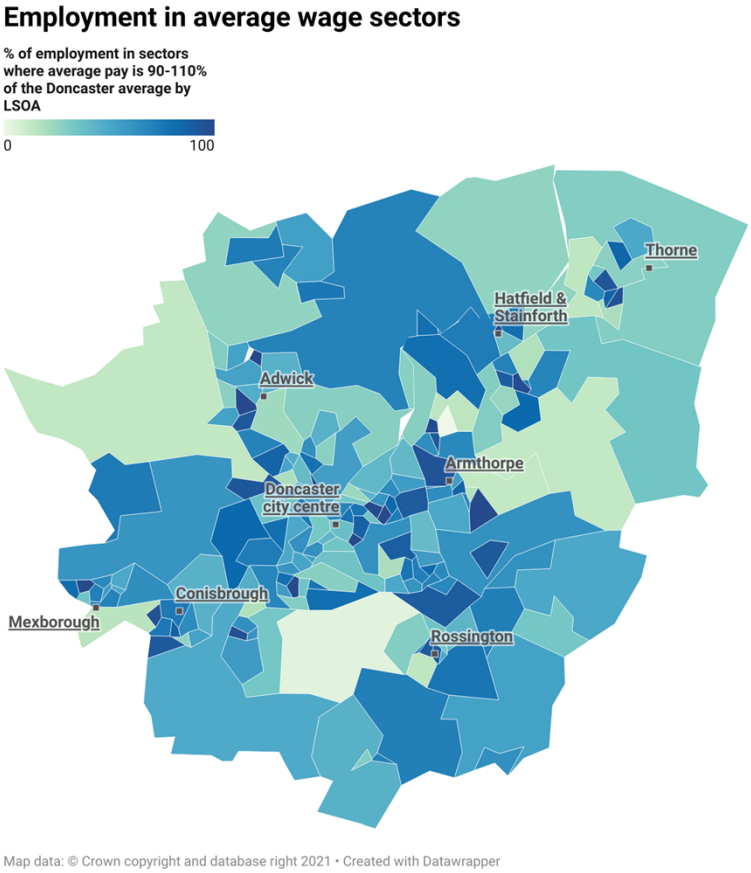
However, a different picture emerges in the north west. Here, the majority of jobs are in lower paid sectors, whilst average household incomes are amongst the highest. Given the relatively low levels of employment and business density in the area, it is possible that some residents are travelling elsewhere for higher paid employment.

Figure 7: Employment in higher wage sectors by LSOA



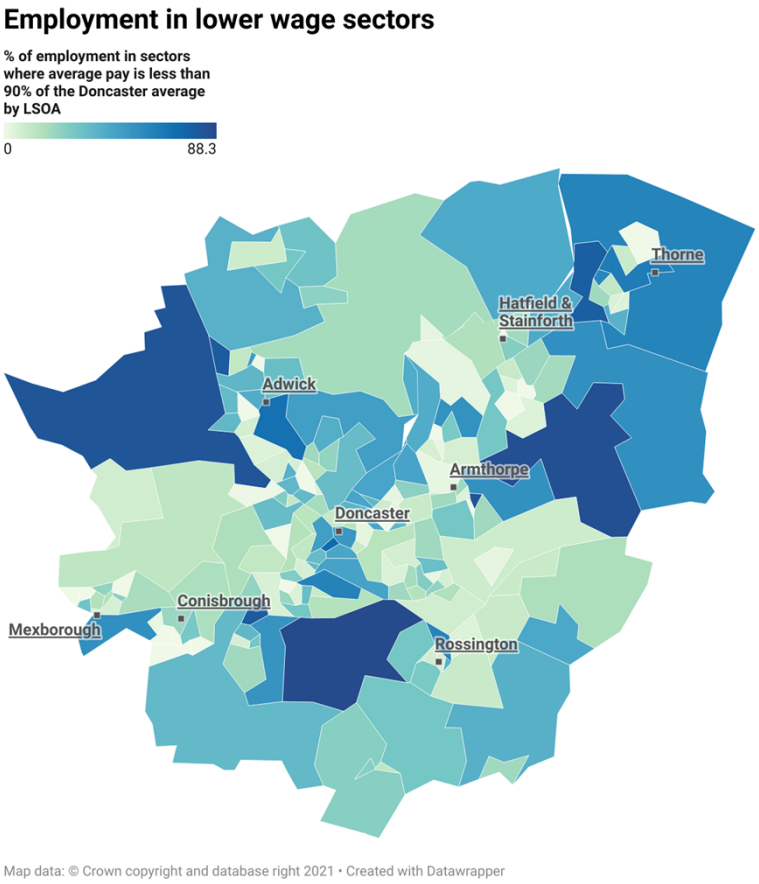
Source: ONS BRES 2021, ASHE 2021

Figure 8: Employment in average wage sectors by LSOA



Source: ONS BRES 2021, ASHE 2021

Figure 9: Employment in lower wage sectors by LSOA



Source: ONS BRES 2021, ASHE 2021

3.4.1.4 Wages key findings

The analysis provides four headline messages:

- Only a small number of LSOAs have a high proportion of employment in higher wage sectors and there is no clear spatial pattern in their distribution.
- Most LSOAs have the majority of their employment in lower wage or average wage category sectors. There is not an obvious link between the sectors in an LSOA and household incomes, with some areas having a lower proportion of employment in higher paid sectors, but relatively high incomes or vice versa.
- The difference between resident pay and workplace pay in Don Valley and Doncaster North constituencies suggests people are travelling to higher paid jobs elsewhere.
- Whilst growing the Industry Specialisms can create more higher paid jobs, the role of the foundational economy in providing quality employment to increase average wages should not be overlooked.

Foundational economy - definition

The "foundational economy" supplies essential goods and services, ensuring that Doncaster can function effectively. It includes key workers, essential supply chains and infrastructure, culturally important goods and services (like hairdressing and beauty) and it underpins places, other parts of the economy, and wellbeing. It's the "everyday economy", or the "essential economy" - the businesses we all rely on for our daily needs.

3.4.2 Economic inactivity and claimant count

Economic inactivity is a measure of people who are not in work or looking for work – said to be not active in the labour market. In contrast, 'unemployment' only includes people who are actively seeking work. This means we use economic inactivity as a more accurate measure of worklessness.

Census data from 2021 on economic inactivity is not yet available for small areas below Local Authority level. Therefore, this section presents an overview of disparities between different demographic groups at a Local Authority level, before presenting a snapshot of 2011 Census data to show the historic spatial challenges facing Doncaster.

Like the spatial considerations of business and employment, understanding disparities in economic activity across Doncaster is needed when planning action to ensure economic growth benefits all communities in the city.

3.4.2.1 Demographics of inactivity

In Doncaster 43% of the over-16 population are economically inactive, higher than the England average of 37%. However, rates of economic inactivity vary across social and demographic groups, which is an issue for inclusive growth polices to address.

Both ethnic minorities and people with disabilities (as defined by the Equalities Act Core definition) have higher levels of economic inactivity than Doncaster as a whole. Of ethnic minorities aged 16-64 years, 47% are economically inactive and 50% of disabled people are, compared to the Doncaster average of 39%. The latter are an important consideration given the Council's ambitions for a wellbeing economy. Similarly, 46% of women in Doncaster are economically inactive, compared to 40% of men. These patterns mirror the national picture, albeit levels of inactivity are higher in Doncaster.

Caring responsibilities result in higher levels of economic inactivity for women than men in Doncaster and nationally, with around 30% of inactive women inactive due to looking after the family or home. However, the proportion of economically inactive women in Doncaster who are long-term sick (36.4%) is much higher than the national proportion (21.6%). Disabled people face both real and perceived barriers in the labour market which contribute to higher levels of involuntary economic inactivity. Barriers include workplaces being physically or culturally inaccessible, and employers being unable or unwilling to make the adaptations necessary for disabled people to enter employment.

Looking at age, the data shows that 30% of people aged 50-64 are economically inactive, which can have implications for people's earnings and quality of life as they continue to age. For younger workers in their 20s around a fifth are economically inactive.

Looking at employment, younger people in Doncaster have a lower employment rate as would be expected due to school and studying. However, as with economic activity rates, a lower proportion of people aged 25-34 are in work than those aged 35-49.

Table 4: Economic inactivity rates by age band

Age	% who are economically inactive	% who are in employment
16-19	75.8	18.3
20-24	20.3	70.6
25-34	22.5	73.7
35-49	14.9	82.5
50-64	31.3	67.2
65+	93.2	6.6

Source: ONS, Annual Population Survey, 2022

Focussing on Doncaster's 16-17 year-olds specifically, 4.9% are classified as not being in education, employment or training (NEET). NEET rates are highest amongst boys (5.7%) than girls (4.0%) with mixed race (4.7%) and white (4.4%) young people having higher NEET rates than other ethnic groups.

3.4.2.2 Spatial dimensions of economic inactivity and claimant count

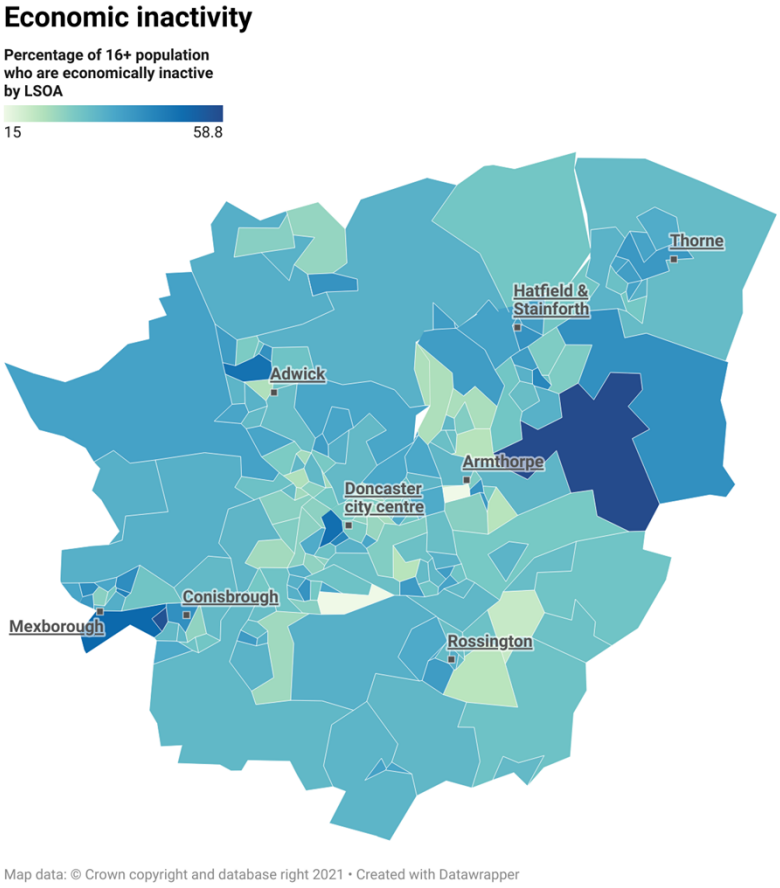
Across Doncaster's LSOAs, economic inactivity levels amongst working age people varied from 15% to 58% in the most recently available data (2011). Areas to the east and west have higher rates of economic inactivity.

The economic inactivity data available at LSOA level is now very dated, and recent reports of increased economic inactivity following the Covid-19 pandemic means the picture may have changed, and possibly worsened. Updating this analysis when newer data are available will be important when assessing the success of the economic strategy in delivering inclusive growth.

Across Doncaster as a whole 4.7% of economically active working age people are unemployed. Looking at the Parliamentary Constituency level the unemployment rate varies from 3.6% in Doncaster North, to 4.5% in Don Valley and 5.6% in Doncaster Central.

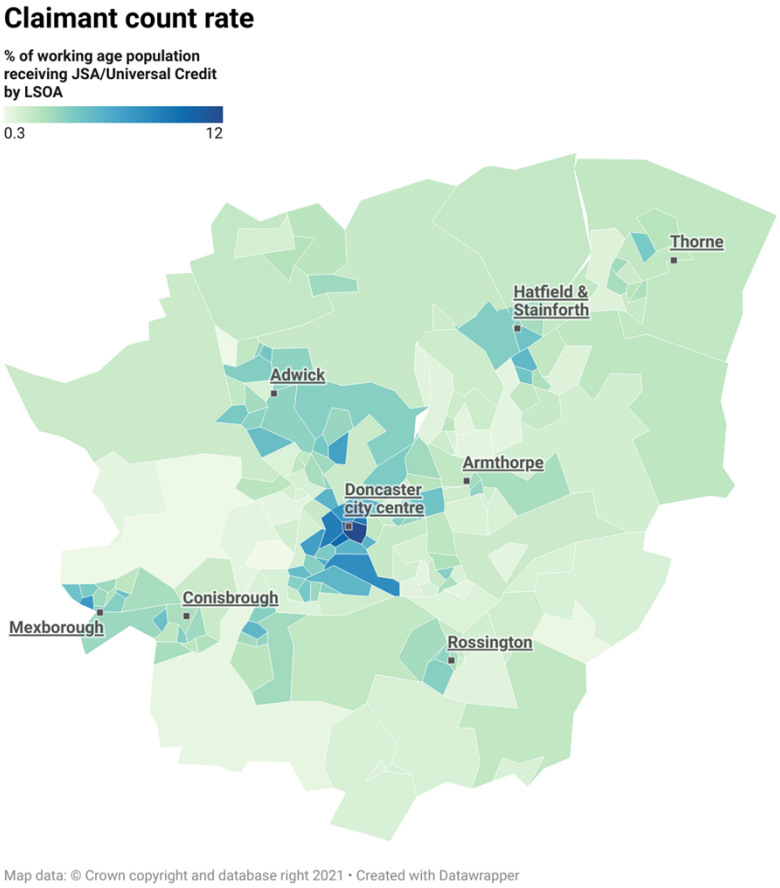
Figure 11 shows Universal Credit and Job Seekers Allowance claimant rates across the borough range from 0.3% to 12%, the city centre areas having the highest rate.

Figure 10: Economic inactivity by LSOA



Source: ONS, Annual Population Survey, 2022

Figure 11: Claimant count by LSOA



Source: ONS Claimant Count 2022, ONS Population Estimates 2020

3.4.2.3 Inactivity and claimant count key findings

The analysis provides three headline messages:

- The city centre has the highest rates of business and employment density but a high claimant count rate. This suggests that either residents there are unable to take job opportunities or that low pay levels in the jobs they do take up mean that they need to supplement their income through in-work benefits.
- The LSOAs with the highest rates of economic inactivity in the east and west correspond to areas of worse health and housing deprivation (as shown in the IMD maps in the Appendix), showing the link between poor health and economic inactivity.
- The LSOA with the highest rates of economic inactivity sits between two of the key opportunity sites (Unity and GatewayEast) which are expected to accommodate significant jobs growth over the next ten years (see section 2.5). However, in addition to the creation of new jobs, support will be needed to bring people back into the labour market and ensure they are able to physically access the new job opportunities.

3.4.3 Accessibility of employment sites from different places

The ease with which people can access significant areas of employment by different transport modes varies across Doncaster.

The following series of maps (set out in Figure 12 to Figure 15) present average travel times to employment sites with 500-4,999 jobs for people living in each LSOA in Doncaster. For ease of

comparison, the same colour scale has been used for each covering the range of journey times from a minimum of 3 minutes to a maximum of 74 minutes.

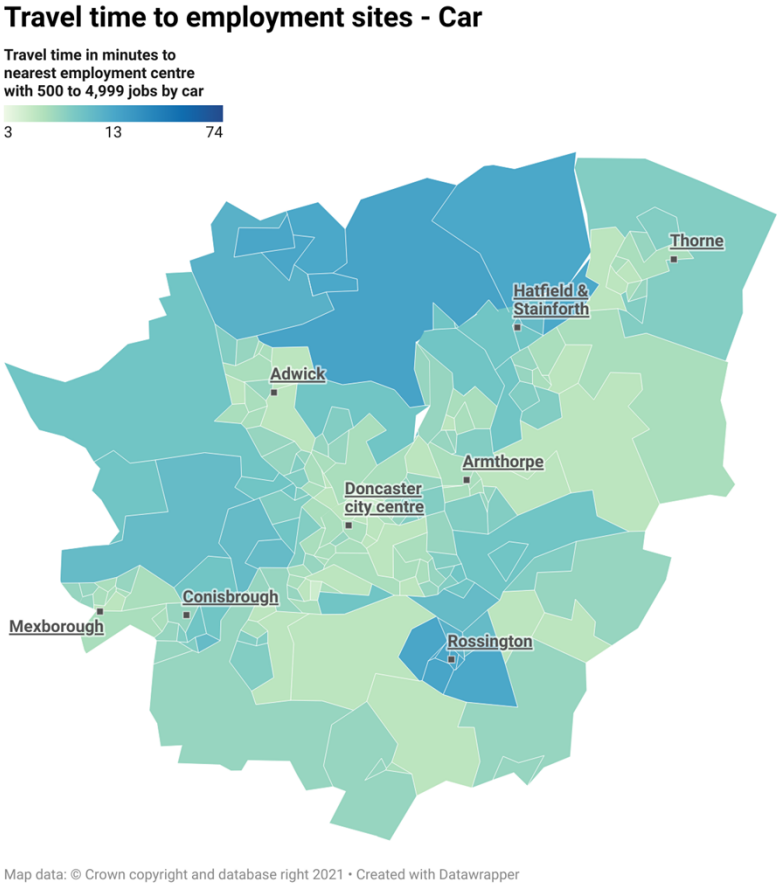
Table 5: Travel time to key employment sites

	Travel time to employment sites of 500-4,999 jobs (minutes)			
	Car	Public transport	Cycling	Walking
Average time across all LSOAs	8	13	11	20
Time in LSOA with shortest	5	3	6	3
Time in LSOA with longest	16	45	30	74

Source: Journey Time Statistics, Department for Transport, 2019

The maps demonstrate that areas to the north, west and south east of the borough are the most disconnected from jobs. The reliance on cars for travelling to work in parts of Doncaster is also evident. For example, on average journey times by car are only 5 minutes quicker than public transport, and in some central areas public transport can be marginally quicker. However, in the north of the borough the maximum travel time to a major employment site by car is only 16 minutes compared to 45 minutes by public transport. The fact that the maximum travel time by cycling is 30 minutes shows the relative slowness of public transport.

Figure 12: Travel time to employment sites by car by LSOA

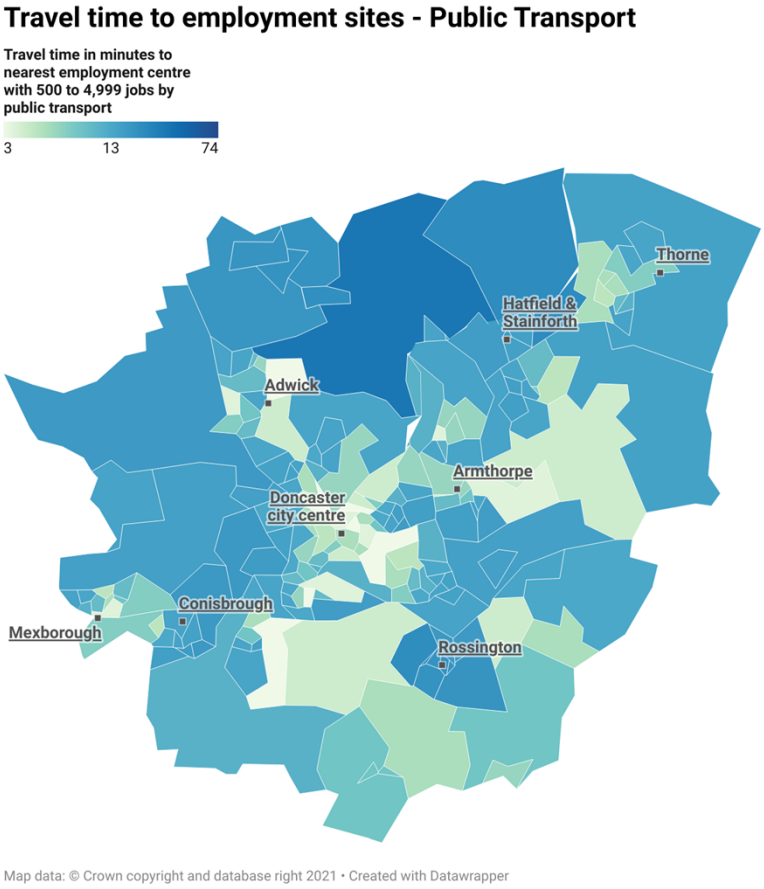


Source: Journey Time Statistics, Department for Transport, 2019

The public transport network in Doncaster largely operates on a radial route system, meaning that travelling from one outer area to another generally involves a change of buses within the city centre, adding complexity and cost and extending journey times.

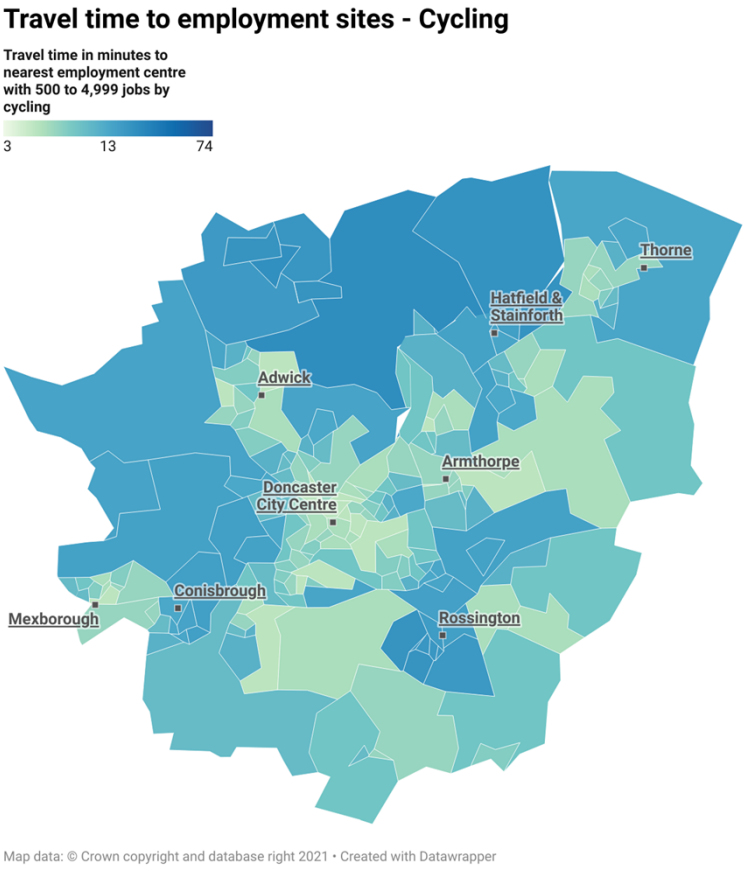
This is a key issue which must be addressed in delivering regenerative and inclusive growth through the Industry Specialisms, given the location of two of the key opportunity sites. People in communities poorly served by public transport services and frequency are missing out on the benefits of the South Yorkshire Mayoral Combined Authority's (SYMCA) new public transport pricing, and inclusive growth cannot be delivered without making good jobs more accessible to people without cars in these areas.

Figure 13: Travel time to employment sites by public transport by LSOA



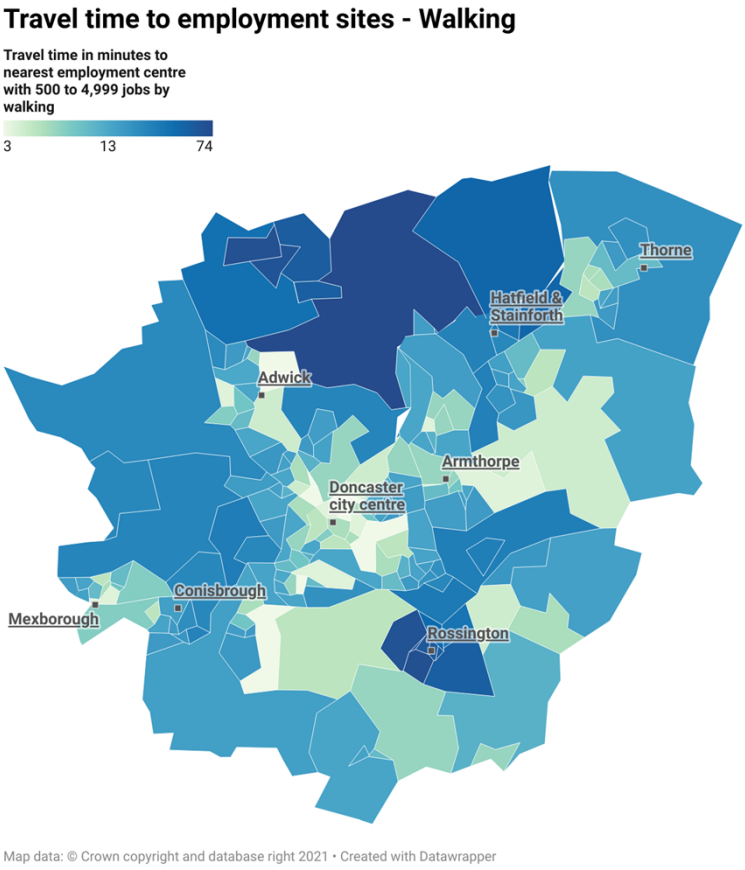
Source: Journey Time Statistics, Department for Transport, 2019

Figure 14: Travel time to employment sites by cycling by LSOA



Source: Journey Time Statistics, Department for Transport, 2019

Figure 15: Travel time to employment sites by walking by LSOA



Source: Journey Time Statistics, Department for Transport, 2019

3.4.4 Spatial challenges key findings

This subsection recaps the headline messages from the preceding subsections, which are:

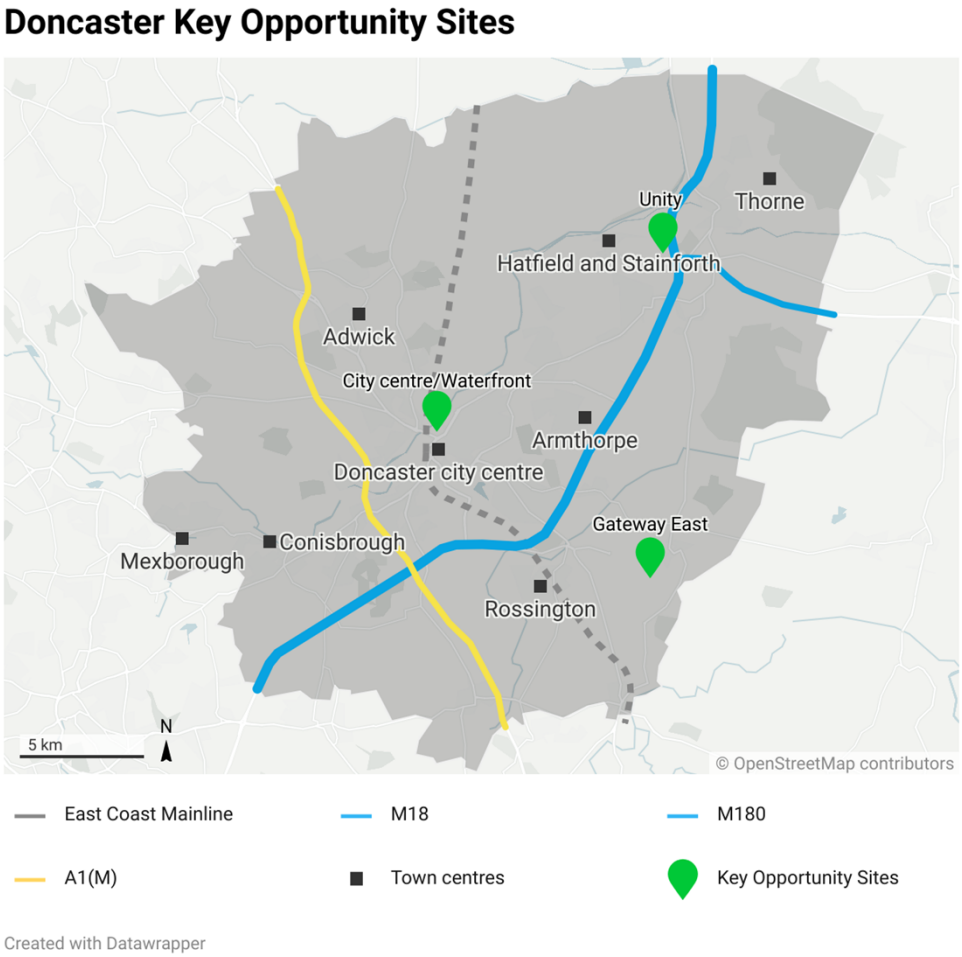
- The north east of the borough faces a spatial challenge of low business density, resulting in lower levels of employment.
- The north of the borough also has relatively low employment density compared to the size of the local population, which means the long public transport journey times and reliance on car to travel to jobs elsewhere is an issue.
- The city centre has highest concentration of economic activity, but this has not prevented some central areas from being the most deprived. In fact, it has the highest rates of business and employment density but a high claimant count rate. This suggests that either residents there are unable to take job opportunities or that low pay levels / limited working hours mean people receive in-work benefits. Inclusive growth policy interventions will be needed to help residents here benefit from developments in the city centre/waterfront opportunity sites.
- A small number of LSOAs with a higher proportion of higher wage sectors are located close to opportunity sites like Unity and GatewayEast.
- Most LSOAs have the majority of their employment in lower wage or average wage category sectors. There is not an obvious link between the sectors in an LSOA and household incomes, with some areas having a lower proportion of employment in higher paid sectors, but relatively high incomes or vice versa.
- The difference between resident pay and workplace pay in Don Valley and Doncaster North constituencies suggests people are travelling to higher paid jobs elsewhere.
- Whilst growing the sector specialisms can create more higher paid jobs, the role of the foundational economy in providing quality employment to increase average wages should not be overlooked.
- The LSOAs with the highest rates of economic inactivity in the east and west correspond to areas of worse health and housing deprivation, showing the link between poor health and economic inactivity.
- The LSOA with the highest rates of economic inactivity sits between Unity and GatewayEast, which can provide areas of employment if steps are taken to bring people back into the labour market.

3.5 Key opportunity sites

Doncaster has experienced significant economic and housing development in recent years, leading to increased levels of employment in the borough. Recent growth has been concentrated in the south east of the borough and is largely linked to the strategic road network and transport infrastructure investment, e.g. at iPort and Doncaster Sheffield Airport.

The distributed settlement pattern and legacy of the mining industry means that employment uses are located across the borough. Small scale opportunities to re-develop brownfield land for new employment uses are therefore likely to arise across the borough in future years. However, the constraints imposed by the Green Belt and flood risk position mean that the key opportunities for accommodating major employment growth are provided in three locations: the city centre (particularly the Waterfront), Unity in the north of the borough, and GatewayEast at DSA.

Figure 16: Key opportunity sites



Source: Kada Research, based on Doncaster Local Plan 2015-2035, Adopted September 2021

3.5.1 Doncaster City Centre / Waterfront

The first of these is **Doncaster City Centre**. Doncaster Urban Centre Masterplan[7] sets out proposals to create an urban core which supports enterprise, a diverse array of companies and wide-ranging employment opportunities, as well as providing an outstanding retail, leisure and residential offer. A vibrant city centre underpins an attractive offer to inward investors (across all sectors) and is particularly attractive as a business location for knowledge-intensive business services and the digital and creative sectors. As the area best-served by public transport, encouraging employment growth in the city centre will contribute to creating a regenerative and inclusive economy by ensuring that job opportunities are accessible to communities across Doncaster.

Considerable investment has already been made in the city centre, transforming the city gateway and kickstarting the creation of a new central business district through investment in the civic and cultural quarter. This has provided a new focus for cultural activity in Doncaster, including the development of CAST as an anchor cultural asset for the city. The place-making investments which have been made to date are beginning to diversify uses in the city centre, attracting residential investment and increased cultural activity, with the intention of ultimately creating a viable market for higher quality office space.

The urban core masterplan proposes a major transformation of the **Waterfront** area, which is already home to the Doncaster College Hub and university centre campus. Over the next ten years, 32 acres of land will be re-developed to create a new mixed-use city centre waterfront district. This area is proposed as the home to a new multi-million pound state of the art hospital, which would incorporate

[7] Doncaster Council, 2021, *Doncaster A Vision for the Future Doncaster Urban Centre Masterplan*. See: www.doncaster.gov.uk/urbanmasterplan

an integrated teaching facility and research centre, and improve the borough's research and educational offer. As the base for thousands of health professionals and researchers, the new hospital would act as an anchor for the Health and Care specialism, attract investment from related businesses, provide thousands of highly-skilled job opportunities in the heart of Doncaster and create footfall in the city centre, supporting the retail base.

The city centre also provides an opportunity to grow Doncaster's emerging Digital and Creative specialism. Although small in employment terms, Doncaster is home to digital and creative businesses with leading edge Intellectual Property and links to major global companies through their supply chains, which provide a base from which to grow the sector, attract investment and start-up businesses. The city centre, and the Waterfront development site in particular, offer an attractive location for this sector, offering both a high density urban environment and space for larger-scale studios and digital facilities such as those planned by 360 Degrees Media. The Waterfront site is close to the C-View creative workspace (at the former arts college building) which is already the location for a number of creative businesses. Close proximity to the College Campus provides access to skilled workers and there is scope for the digital and creative sectors to support growth across the specialisms through expanding the role of AI, VR and collaborative tools.

3.5.2 Unity

The second key opportunity site is the **Unity** site, which at 250 hectares is one of the UK's largest mixed-use regeneration schemes. Owned by a joint venture partnership Waystone and Hargreaves Land and located in the north east of the borough between Hatfield and Stainforth, the Unity site will play a transformative role in ensuring that new economic and employment opportunities are created across the borough, given the recent focus of development in the south of Doncaster. This will make an important contribution to regenerative and inclusive growth in Doncaster, with significant numbers of jobs being created in close proximity to some of the borough's most deprived communities. The Unity site also benefits from its proximity to public transport at Hatfield and Stainforth station, which will help to ensure that jobs are accessible to communities in other parts of Doncaster.

The Unity proposals include plans for industrial units ranging in size from 35,000sq ft to 400,000sq ft. Unity provides a potential location for a number of the Industry Specialisms requiring lower density manufacturing, light industrial, innovation and R&D space, potentially including engineering and technology, plastics and materials and rail-related businesses (although the existing cluster of rail businesses is located closer to the city centre and National College for Advanced Transport and Infrastructure, at Lakeside). The Unity development will also be suitable for businesses in the Mobility sector with the site – immediately adjacent to the M18 – offering excellent access to the east coast ports.

3.5.3 GatewayEast

The third key site is GatewayEast, located alongside Doncaster Sheffield Airport. Owned by Peel L&P, the GatewayEast proposals envisage 11m square feet of development space, of which 4m square feet already has planning consent. Located with excellent links to junction 3 of the M18, GatewayEast was expected to provide industrial units, commercial development, and logistics space, as well as an innovation quarter with a focus on advanced aviation and engineering, linked to the Advanced Manufacturing Research Centre in Rotherham. Up to 5,000 jobs were expected to be accommodated within the next five years, to support the growth of the airport, with a focus on businesses linked to the aviation sector or benefitting from an airport location. Significant housing development is also proposed, subject to the achievement of job creation targets at the Airport, as detailed in Policy 6 of the Local Plan – Doncaster Sheffield Airport Policy Area (Strategic Policy).

Although there is considerable uncertainty over the future of the Airport at the time of writing, development at the site to date indicates strong market demand for commercial and housing space in this location.

3.5.4 Other important sites

The development of the **iPort** multimodal logistics hub, located at junction 3 of the M18, has facilitated significant employment growth over the past five years. Covering approximately 55 hectares, the inland port incorporates a strategic rail freight terminal and bonded storage and customs facilities. The site is currently occupied by Amazon, Lidl, Fellowes, and Kingsbury Press amongst others. The final sites are now being brought forward by owners Verdion. iPort is expected to be complete – offering 6 million square feet of warehousing space – by June 2024.

The **Doncaster North** Industrial and Logistics Park at Junction 6 of the M18 / Junction 35 of the M62 is expected to provide up to 8,500 jobs in Thorne – an area with one of the lowest employment densities in the borough. Planning permission for up to 3.5million square feet of manufacturing and warehousing floorspace was granted in January 2022. Being brought forward by Wilton Developments, work is expected to begin on site shortly.

The **Lakeside** development, to the south of the city centre, provides space for a wide range of employment uses including office space, retail and leisure facilities. A small number of sites remain available for development, with up to 10,000 jobs now accommodated across the area.

3.5.5 Smaller development sites

In addition to the three priority locations, opportunities for small-scale employment-related development are likely to arise across the borough's many settlements. Community Investment Masterplans (CIMs) have been prepared for Edlington, Rossington and Thorne-Moorends, providing a strategic framework in which employment and business-related priorities can be considered alongside community, residential and local transport and place-making priorities. The Rossington CIM and Thorne & Moorends CIM, for example, both identify a need to provide additional space for small businesses through the provision of flexible accommodation / shipping containers. Development of further CIMs will be explored in coming years.

Development of small 'infill' employment sites within Doncaster's towns and villages has the benefit of creating employment close to centres of population, providing accessible job opportunities for local people. It can also act to strengthen local centres by providing increased footfall and a customer base for local shops and services.

3.5.6 Opportunity sites key findings

The key lessons and future implications from the desk research and consultations relating to the key opportunity sites are:

- Doncaster has been successful in bringing forward a significant amount of development land in recent years, leading to considerable employment growth. Investment in the strategic transport network has been very important in enabling sites to be brought forward and making them attractive to businesses. In the city centre, investment in place-making plays a similar enabling role in bringing development sites forward.
- Most of the land available for development in the borough is privately owned and therefore not within the Council's control. Recent development has been market-driven and there may be a tension between developments which give landowners the best financial return, and Doncaster's ambitions for a regenerative and inclusive wellbeing economy.
- Although there has been investment in new industrial sites, the range and quality of commercial property within Doncaster is limited – with very little Grade A office space, no bespoke innovation / incubation space, and little speculative development given rental values. This limits the ability to attract inward investor businesses and meet the needs of Doncaster's indigenous business base.
- The development sites available in Doncaster have the potential to meet the location needs of the Industry Specialisms. Encouraging the co-location of businesses operating in similar sectors

/ markets / supply chains or who face similar challenges has the potential to strengthen networks and develop local clusters, but requires a strategic approach to be adopted at each site.

3.6 Alignment with national and regional development priorities

Doncaster's economic ambitions do not exist in isolation. Aligning with regional and national strategies can help Doncaster maximise funding, development, and market opportunities. This section provides an overview of opportunities for Doncaster to build its economic strategy in line with the opportunities presented by others across the wider region, especially SYMCA but also nationally.

3.6.1 National Policy

The UK Government's 2021 strategy Build Back Better: Our Plan for Growth set out the national agenda for post-Covid-19 economic recovery. Like Doncaster's economic strategy and education and skills strategy, Build Back Better has a focus on infrastructure, skills, and innovation, as well as inclusive growth and supporting the transition to net zero. The November Autumn Statement reiterated that infrastructure investment, Levelling Up and innovation remain key Government priorities, as well as upskilling the workforce to maximise productivity and drive economic growth. Securing energy independence and transitioning to net zero continue to be a focus for investment, with a re-focussed Investment Zones programme focusing on knowledge-intensive growth clusters.

With regard to Government funding, the current rounds of Levelling Up Fund and Shared Prosperity Fund have been allocated to deliver the aims of Build Back Better, with Doncaster securing significant Levelling Up and Town Deal Funds for the city centre (as well as Town Deal investment for Stainforth). Any future funding rounds provide an opportunity for Doncaster to access funding to deliver its aims.

It should be noted that there are some tensions between Doncaster's ambition to develop a regenerative and inclusive wellbeing economy, and national policy drivers. Current economic turbulence and the cost of living crisis may make achieving Doncaster's objectives more challenging – but reinforce the need for a new approach to the local economy which moves beyond the traditional extractive model and delivers benefits for people, places and the planet.

The UK Shared Prosperity Fund was launched in April 2022 succeeding the previous EU structural funds with the aim to "build pride in place and increase life chances across the UK" with £2.6 billion of funding for local investment. It builds on the UK's levelling up objectives:

- Boost productivity, pay, jobs and living standards by growing the private sector, especially in those places where they are lagging
- Spread opportunities and improve public services, especially in those places where they are weakest
- Restore a sense of community, local pride and belonging, especially in those places where they have been lost
- Empower local leaders and communities, especially in those places lacking local agency

Doncaster (often in partnership with the other South Yorkshire authorities) has been successful over a number of years in accessing EU structural funds to support a range of business growth and skills development projects. These currently include the Advance skills development and recruitment support programme, the Community Wealth Builders programme and the Launchpad start-up and microbusiness support programme. The business support ecosystem which EU funds have supported will be subject to significant change over the coming 12 months as the remaining European Regional Development Fund (ERDF) and European Social Fund (ESF) projects draw to a close and a new SPF-funded landscape emerges. It will be important to ensure that funding is still available to support business growth, cluster development and innovation to support Doncaster in implementing its ambition for innovation-led growth as part of its regenerative and inclusive growth strategy.

3.6.2 Regional Policy

3.6.2.1 Strategic Economic Plan

South Yorkshire's four councils, along with the SYMCA and LEP developed the 20-year Strategic Economic Plan (SEP). The SEP paves the way to a stronger, greener and fairer economy as the region looks to unlock its potential and create prosperity and opportunity for all.

The overarching policy objectives of the SEP are:

1) Growth (Stronger): Growing the economy and enhancing its strength and resilience. There is an aim to achieve sustained, inclusive growth, underpinned by productivity gains that matches the UK average.
2) Inclusion (Fairer): Unlocking prosperity by eliminating the wage gap and other inequalities (particularly health) within South Yorkshire and between South Yorkshire and the national average and by improving standards of living for disadvantaged communities. Ensuring that everyone has a fair opportunity to contribute to and benefit from economic growth, that people have a greater stake in their economy, and that work is more closely linked to wellbeing and a decent life.
3) Sustainability (Greener): Driving low carbon, green and circular economy opportunities within the economy and delivering net-zero emissions and lower overall environmental impacts. The target is net-zero carbon by 2040.

The SEP sets out South Yorkshire's shared priorities which are outlined below and align closely with the regenerative and inclusive approach to economic development being adopted in Doncaster:

1) Developing a more regenerative place with a circular, decarbonised economy.
2) Developing Industry Specialisms as well as green industries, the foundational economy and supporting services.
3) Growing priority areas and investing in housing, infrastructure, local services and public realm.
4) Developing an intelligent, greener transport system and improving digital connectivity.
5) Improving skills and supporting lifelong learning and creativity.
6) Purposeful, mission-orientated innovation to improve wellbeing.

In terms of building on existing capabilities, in the SEP Doncaster was outlined as the area at the forefront of intelligent mobility and the infrastructure of tomorrow, as a pioneer of UK railways – as reflected in the mobility specialism. The borough is one of the most important rail hubs in the UK and at the centre of developing the next generation of rail skills and expertise. Doncaster offers access to an 8,000 strong, highly skilled rail workforce and is home to the National College for Advanced Transport & Infrastructure and a new University Technical College (UTC) specialising in digital design and engineering.

The SEP highlights opportunities to build on current expertise and market opportunities in intelligent mobility, higher education, rail engineering, creative and digital technology, health and green technologies (all well-aligned with Doncaster's Industry Specialisms) in the three key geographical areas identified as key opportunity sites in 2.5 above and as key growth locations in the SEP:

- Doncaster Town (now City) Centre;
- Unity; and,
- Doncaster Sheffield Airport (DSA) – notwithstanding the current uncertainty regarding the future operation of the Airport itself.

3.6.2.2 Renewal Action Plan

Alongside the SEP, the Renewal Action Plan provides a shorter-term focus to drive the region's recovery from the Covid-19 pandemic and transform South Yorkshire's economy and society for people, businesses and places. Sheffield City Region's Renewal Action Plan aims to provide immediate help for local people, employers and places following the impacts of COVID-19. The Renewal Action Plan outlines

a short-term focus on recovery, medium-term focus on renewal and longer-term development of increased resilience. Immediate post-pandemic priorities include:

- Giving a hand up for people to improve their skills, get back to work, remain and/or progress in work, or set up in business
- Accelerating the Net Zero Carbon transition
- Backing wealth and job creators
- Getting South Yorkshire moving by foot, bike, bus, tram and train
- Putting cranes in the sky and spades in the ground

More specifically, the Renewal Action Plan sought to accelerate shovel-ready construction and regeneration activities that could help the economy recover, support levelling-up and strategic growth sectors, enhance the public housing offer and drive urban centres to modernise.

Doncaster-specific investments included the Active Travel and Digital Infrastructure Programme (Quality Streets) and support for Doncaster College to improve its digital infrastructure, and create a new construction training space, able to support training related to Modern Methods of Construction.

3.6.2.3 Energy Strategy

The South Yorkshire Mayoral Combined Authority's Energy Strategy provides the strategic framework for business investment in low carbon energy generation, energy infrastructure and energy efficiency in South Yorkshire. The overarching vision for South Yorkshire is to have:

"A clean, efficient and resilient energy system, which supports a healthier environment for people to live, work and visit, and which drives our transition to a low carbon economy".

This vision is to be achieved via four goals:

1) Drive clean growth and decarbonisation in our local businesses and industry while maintaining their competitiveness
2) Promote investment and innovation in low carbon energy generation, distribution and storage technologies
3) Improve the energy efficiency and sustainability of our built environment and encourage communities to be part of the transition
4) Accelerate the transition to ultra-low emission vehicles (ULEVs) and transport systems through modal shift and supporting infrastructure

The Energy Strategy also outlines the assets Doncaster has which contribute to a transition to net zero, specifically:

- Doncaster produces the majority of South Yorkshire's onshore wind (7 onshore wind farms)
- Doncaster also has an innovative electrolyser manufacturer, CPH2, which has plans for significant growth. The electrolysers produced by these local companies are essential for the move towards hydrogen vehicles as they are an integral part of the refuelling infrastructure.

The national and regional push towards net zero aligns well with Doncaster's emerging specialism in green technology, and the opportunity to decarbonise other sectors through its mobility, engineering and technology and advanced materials expertise.

3.6.2.4 Place Based Investment Plans

SYMCA has adopted an integrated place-based approach to developing strategic regeneration proposals in urban centres which aligns investment in infrastructure (land remediation, housing, transport and other infrastructure) to create sustainable employment and housing. The approach is intended to better support Local Plan priorities to re-structure town and city centre economies, helping to re-populate and re-purpose urban cores so that they act as a magnet for people, businesses and growth in South Yorkshire. It will be used to ensure South Yorkshire's Gainshare funding is targeted on prioritised investment plans. This requires early investment in master planning, site assembly, marketing and

investment. Masterplans are now in place for Doncaster's three key opportunity sites – the city centre, Unity and GatewayEast.

Doncaster Council have also adopted a new approach to place-based investment, as well as implementing a Localities approach to service delivery. The Doncaster Delivery Together Investment Plan (DDTIP) is a new annual plan that outlines key investment priorities to deliver the borough strategy 'Doncaster Delivering Together' (DDT). The DDTIP adopts a place-based approach to investment, identifies priority capital and revenue projects which will deliver significant improvements in the wellbeing of everyone in the borough, and prioritises these for external funding opportunities. The Plan is informed by intelligence and understanding gathered during consultation with key groups. The engagement undertaken through the development of DDT, Locality Plans, and Community Investment Masterplans informs the Plan and has been used to shape bids for external funding. This ensures that future spending is linked to a coherent place-based model, which will deliver better outcomes and improved scrutiny.

3.6.3 Policy alignment key findings

The headline messages from the document review and consultations in relation to policy alignment are:

- Whilst there is some uncertainty over national economic priorities in advance of the Autumn Statement, Doncaster's priorities align well with the national priorities set out in the Build Back Better growth plan.
- Doncaster's ambition to develop a regenerative and inclusive wellbeing economy reflects the approach set out in the SEP and explicitly rejects traditional extractive models of economic growth. Implementing this new approach in the midst of a cost of living crisis, a recession and likely public spending cuts – when there may well be pressure to accept any growth rather than prioritising 'good growth' – will be challenging.
- The place-based approach provides a welcome opportunity to develop holistic plans identifying how the key opportunity sites will be brought forward in order to create regenerative and inclusive opportunities for Doncaster's communities.

3.7 City Status

The recent awarding of city status to Doncaster as part of the Queen's Jubilee Celebrations marks the culmination of a long campaign to have Doncaster, regarded locally as a city in all but name, officially recognised as such.

Whilst having city status does not bring access to additional funding opportunities or powers, there is a perception that it will bring tangible economic benefits. Research undertaken by the University of Reading into the economic performance of places previously awarded city status indicates that on average they do outperform regional comparators. However, this may reflect the drivers that led to them being designated as cities, rather than being a result of city status itself.

Whilst tangible benefits are difficult to quantify, recognition of Doncaster through the award of city status does contribute to increased local pride and confidence and an increased external profile (e.g. through coverage of the royal visit, news reports about the designation). This provides an opportunity to attract increased investment to the city, both from local people and businesses and inward investors.

City status also provides Doncaster with an opportunity to build new networks and strengthen existing relationships with external partners (nationally and internationally) who share similar ambitions and face similar challenges.

4. Industry Specialisms in Doncaster

This section focuses on an analysis of sector specialisms in Doncaster, taking an approach to assessing the concentration of sector activity based primarily on the number of jobs that exist within the range of business activities present in the local economy. The purpose of the analysis is to understand the structure of the economy in sectoral terms, leading to an examination of sector 'specialisms' across the economy.

This is the starting point for a broader discussion of how Doncaster might use the concept of sector specialisms to develop an approach which can be integrated into the new economic strategy for the Borough.

4.1 Economic clusters

This section examines sectors using a classification of business activities which was employed in our prior study for Doncaster Council, published in 2018. The intention is to re-examine the scale and concentration of employment within sectors and to analyse change in the intervening period (i.e. 2016 to 2021). This is then followed by a more detailed review of specific specialisms which are deemed to be of interest to the strategy, either because they are currently of significant scale, are highly concentrated in Doncaster (and therefore can be considered to be specialisms) or because they offer an opportunity to deliver on wider inclusive and regenerative growth ambitions, on which the economic strategy is focused.

There are three elements to the examination of specialisms presented in this report:

- A framework for examining the economy at a much greater level of sectoral detail than the broad industry classifications used in section 2.
- A consideration of not only the scale of employment, but also the concentration of employment within specific activities.
- To review the economy from a more horizontal perspective to identify related strengths.

In this way we can examine the concept of economic 'clusters' within the local economy. In cluster analysis, the goal is to identify agglomerations (i.e. spatial concentrations) of related economic activity (i.e. clusters) that represent full or partial supply chains for particular markets. These clusters combine primary production, processing, distribution and service activities that describe the process from supply to demand. For example, the financial services cluster in the City of London is made up of not only the core financial services industries (banking, investment, trading etc) but also a range of supporting products and services (e.g. printing, legal services, regulatory and governance systems, software, consultancy and so on) that generate and sustain competitive advantage for those activities in that place. Co-location of related activities is also a feature, because close proximity supports competition and collaboration, the sharing of labour markets, ease of access which reduces certain costs and so on. This is an important concept not only in the analysis of clusters, but also the development of strategies to support growth within them.

Previous analysis undertaken for Doncaster Council[8] identified a number of cluster strengths in the local economy, based on an analysis of location quotients (LQs). Location Quotients are useful tools in understanding the concentration of employment in specific economic activities (sectors) as it compares the proportion of local employment in an activity with the national equivalent. Any resulting LQ greater than 1 indicates that the activity is more concentrated in that location than would be expected based on a comparison with the national economy. In this way, economic specialisms (i.e. the activities which are most concentrated in a particular local economy) can be identified.

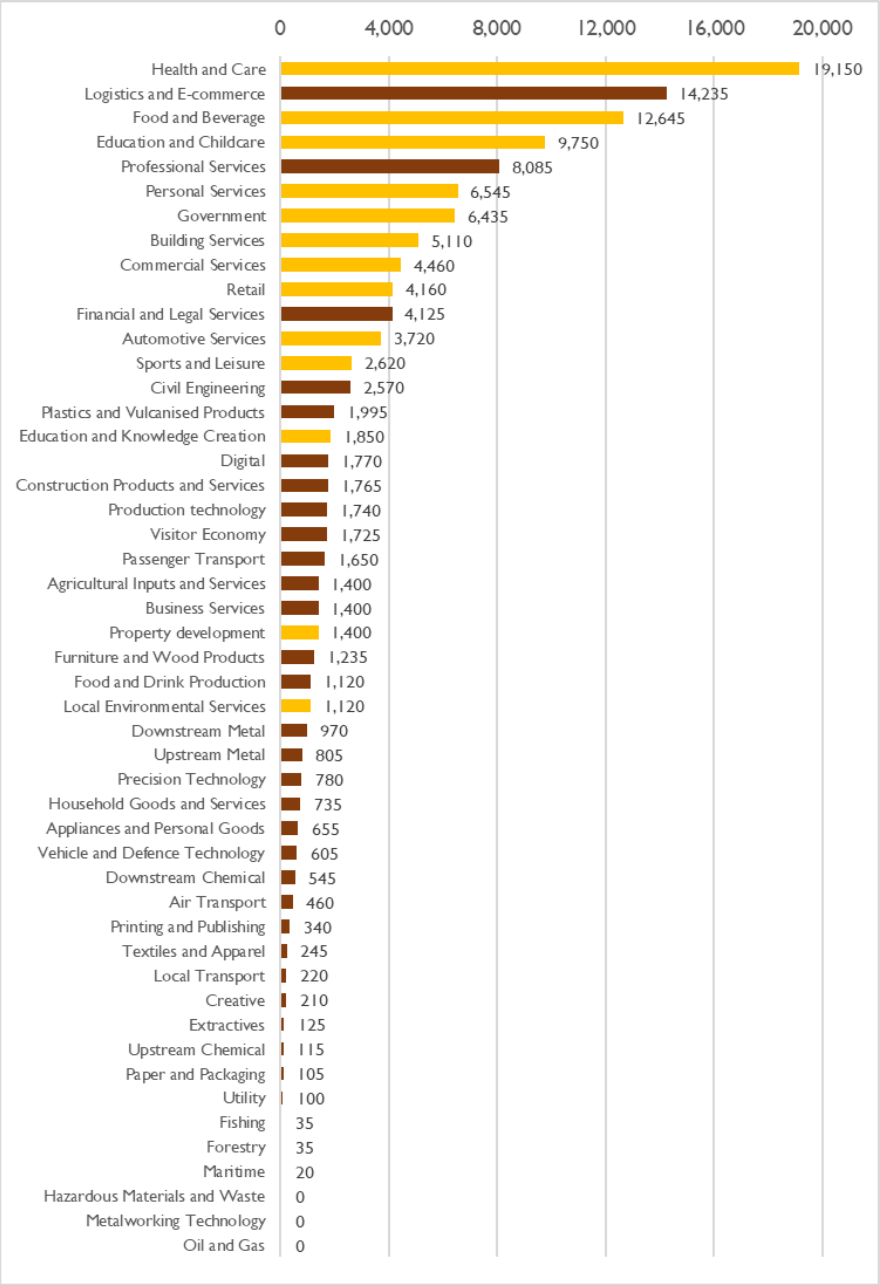
[8] Ortus Economic Research and Sheffield University (2018), *Industry Specialisms in the Doncaster Economy*

4.1.1 Current position and recent change

4.1.1.1 Cluster employment

The first investigation is focused on the scale of different clusters when measured by employment in order to understand the structure of the Doncaster economy and what activities contribute employment and jobs. Figure 17 identifies the number of jobs across 49 'clusters' of business activity. Using these 'clusters' allows us to move away from vertical sector analysis in order to consider a more horizontal perspective. Each cluster is defined by a group of SIC codes, aligned to the core business activity of each cluster. One limitation of any analysis which uses SIC codes is that they tend to be focused on the output of an individual business (i.e. the product or service produced) rather than the market that those goods or services are sold into. This is particularly challenging when trying to understand the economic outlook for sectors which produce intermediary goods, such as componentry or technology that could be used in a wide range of applications. Further comment is made on this issue when we consider advanced the engineering and technology clusters, in section 4.2.

Figure 17: Industry clusters in Doncaster, ranked by job count (2021)



Source: ONS BRES 2021

Across this analysis, clusters are split into those that are 'tradeable' (i.e. have the propensity to service demand outside of the local area, including overseas export markets) and local (i.e. part of the everyday economy). The key data are presented in Figure 17, which shows local clusters in light orange and tradeable clusters in dark orange.

The analysis shows that eight of the ten highest employing clusters are 'local' clusters such as health & care, food & beverage, education & childcare, personal services, government, building services, commercial services and retail. This conclusion is consistent with the prior specialisms report, indicating whilst there has been some change in the ranking of these eight sectors, there has been little structural change across the largest clusters. These clusters are part of the 'foundational' economy.

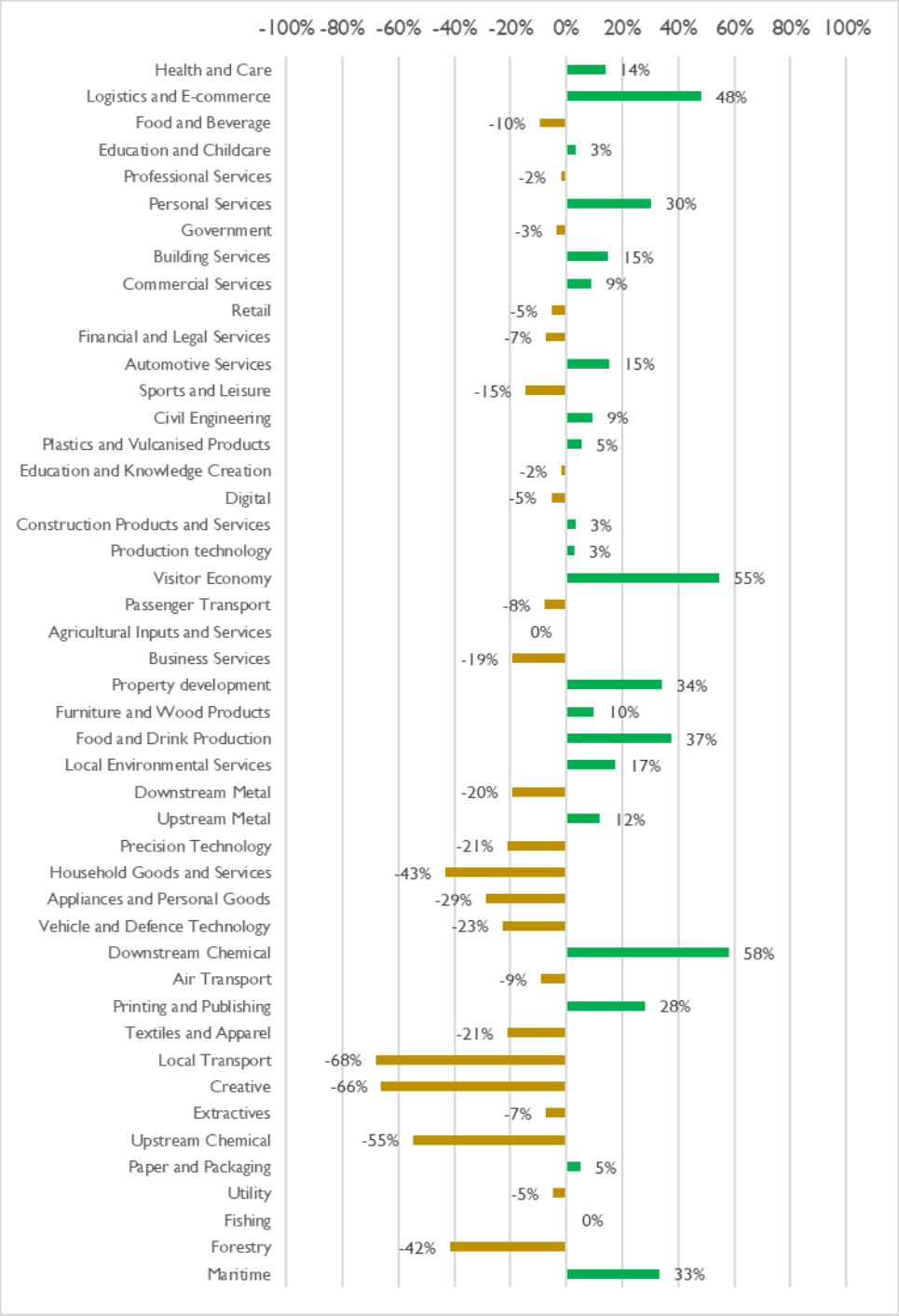
This further emphasises the reliance placed on these business activities, which are by definition constrained by the size of the local market. In other words, whilst they provide large numbers of jobs, they are not likely to be significant drivers of future growth.

This shows that there are two tradable clusters in the top ten by employment; Logistics and ecommerce and Professional Services. A third notable tradeable sector is Financial and Legal Services which is the 11th largest in employment terms. What is also notable here is that Professional Services has grown considerably since 2016, where it appeared as the sixteenth largest sector by employment (2,290 jobs). It has grown to employ over 8,000 people by 2021. Along with the rise of Financial and Legal Services (3,050 in 2016 to 4,125 in 2021), this signals an important development in the Doncaster economy, which is that these professional services activities, which tend to create comparatively well paid jobs, are becoming more established in the borough since 2016.

In addition to examining the total scale of each cluster in employment terms, the study is also interested in the changes in levels of employment over the last three years, since this represents a period with of significant churn and uncertainty (driven in large part by the Covid-19 pandemic and the changing nature of the UK's trading relationship with the EU).

Figure 18 shows the percentage employment change in clusters between 2018 and 2021, ranked by the overall size of the clusters. It indicates positive outcomes for many of the largest clusters, including significant employment growth in Health & Care, Logistics and E-commerce, Personal Services, Building Services and Commercial Services. Other large clusters have seen employment decline, such as Food and Beverage, Professional Services, Government and Retail. These are all local clusters, and include activities which have been particularly hard hit by the pandemic (including Food and Beverage and Retail, for example).

Figure 18: Employment change in clusters (2018-2021), ranked by job count



Source: ONS BRES 2021

A comparison of current employment levels with 2016 indicated that both Professional Services and Financial & Legal Services were clusters that had grown significantly. The analysis of change between 2018 and 2021 indicates that much of that growth occurred between 2016 and 2018, because both clusters have declined (albeit marginally) since 2018, indicating a levelling off of recent growth.

Figure 18 also indicates that some of the smaller clusters, including those of great interest to this study such as Creative, Vehicle & Defence Technology and Local Transport, have shrunk considerably between 2018 and 2021. Of course, in small clusters, a small absolute decline in employment numbers can represent a comparatively large change when expressed as a percentage, because the starting point is small. However, the number of smaller clusters (towards the bottom of the graph) that show a negative

employment trend since 2018 is notable (i.e. only six of the smallest twenty clusters have grown in employment terms).

4.1.1.2 Assessing 'high points'

Table 6 below identifies key characteristics of the most prominent tradeable clusters in the Doncaster economy. It presents the following data:

- Number of Activities – the number of individual industries (represented by 4-digit SIC codes) within each cluster. This indicates the depth of the cluster and the number of related activities.
- Number of high points. A highpoint is an industry with an LQ greater than or equal to 1.25 (i.e. at least 25% more concentrated in Doncaster than in across the national economy).
- Change in high points. This identifies the change in the number of high points within any cluster, when compared to the analysis based on 2016 employment (and presented in the prior Industry Specialisms report).
- Significant high points. The number of high points that employ at least 500 people in the Doncaster economy. This indicator helps us understand the scale of the employment base within each cluster and addresses one of the key weaknesses of examining LQs (and high points) alone, which is that an activity can have a high LQ even when there is very little employment in the local area. This occurs where activities that do not employ very large numbers of people nationally (e.g. mining) are identified in local economies.
- Change in significant high points. This identifies the change in the number of significant high points within any cluster, when compared to the analysis based on 2016 employment.
- Local growth rate. The Doncaster rate of employment growth (or decline) between 2018 and 2021 for a particular cluster.
- National growth rate. The national rate of employment growth (or decline) between 2018 and 2021 for a particular cluster.

An overall assessment of high points in the Doncaster economy identifies 101 such activities out of 392 activities in total. Between them, the high points contribute 63,740 employees to the Doncaster economy, representing 49% of the jobs total. There is some evidence that the concentrated specialisms in the economy, represented by the high points, are reducing in intensity, because the analysis undertaken in 2018 (using 2016 employment data) identified 102 high points which delivered over 66,000 jobs and represented 55% of the jobs total.

There are a total of 19 clusters which have at least one significant high point. These are shown in Table 6 (which identifies eight 'tradable' clusters) and Table 7 (showing eleven 'local' clusters) below.

Table 6: Tradeable clusters in the Doncaster economy

	Number of Activities	High points		Significant high points		Local Growth Rate	National Growth Rate
		#	Change since 2016	#	Change since 2016		
Logistics and E-commerce	10	6	+1	4	-	48.0%	16.5%
Civil Engineering	9	4	+2	3	+1	9.1%	-8.9%
Production technology	20	6	-	1	-	3.0%	-6.7%
Construction Products and Services	15	5	-1	1	-	3.2%	-3.7%
Plastics and Vulcanised Products	15	3	-	1	-	5.3%	-7.3%
Upstream Metal	16	3	new	1	new	11.8%	4.9%
Passenger Transport	4	3	+2	1	-	-7.8%	-0.7%
Financial and Legal Services	20	1	-1	1	-	-7.2%	8.0%

Source: Ortus Economic Research analysis of BRES data (ONS)

Table 6 highlights seven clusters (green shading) – Logistics & E-commerce, Civil Engineering, Production Technology, Construction Products & Services, Plastics & Vulcanised Products, Upstream Metal and Passenger Transport, which are particularly interesting. Firstly, these are tradeable clusters that are likely to access markets inside and outside the Doncaster local economy and therefore have a higher propensity to grow. Secondly, the proportion of high points that are also significant is comparatively high (though this is less the case for Production Technology and Construction Products and Services than for the other five clusters), which means not only are there high concentrations of employment in Doncaster within these clusters, but that the levels of employment are significant to the local economy. This indicates that these clusters are comparatively well established within the local economy and that their strength extends beyond a single, niche activity. Thirdly, in three cases they have experienced significant employment growth (>9%) between 2018 and 2021 (Logistics and E-Commerce, Civil Engineering and Upstream Metal[9]) and in all cases this growth exceeds national performance. The remaining four have experienced more modest employment change over that period (with decline evidenced in Passenger Transport, potentially linked to reduce demand due to the pandemic).

The remaining cluster identified in Table 6 is also of great interest to this assessment of specialisms, primarily because Legal and Financial Services represents a service industry strength. The high point (which is also significant) relates to activities associated with insurance and pension funding, but employment has declined considerably in this activity code (a loss of 450 jobs). This demonstrates how an economy like Doncaster's, which does not have a large number of significant and deep industries, is exposed to the risk of significant decline in one business activity. An activity in the financial services sector grew significantly between 2016 and 2018, but then reduced by around one third within three years.

A similar analysis of local clusters is presented in Table 7. It highlights (green shading) seven clusters which demonstrate that they are established and significant to the local economy, as they contain numerous high points and at least one of these is significant. Growth rates are again mixed across these seven clusters, with five experiencing growth of over 8% over the period 2018 to 2021 (Health & Care, Automotive Services, Personal Services, Commercial Services, and Local Environmental Services) and two (Government, and Food & Beverage) experiencing employment decline.

Table 7: Local clusters in the Doncaster economy

	Number of Activities	High points		Significant high points		Local Growth Rate	National Growth Rate
		#	Change since 2016	#	Change since 2016		
Health and Care	10	5	-	5	+1	13.8%	8.4%
Automotive Services	7	4	-1	3	+1	15.2%	-5.8%
Personal Services	16	5	new	3	new	30.1%	-3.2%
Commercial Services	12	2	+1	2	+1	8.9%	-3.4%
Government	9	2	-1	2	-	-3.3%	9.0%
Building Services	14	2	-3	1	-1	14.8%	8.1%
Education and Knowledge Creation	8	2	new	1	new	-1.6%	5.7%
Food and Beverage	21	7	-1	1	-	-9.6%	4.3%
Local Environmental Services	7	3	-	1	-	17.3%	-1.1%
Sports and Leisure	10	2	-1	1	-	-14.8%	-2.4%
Visitor Economy	8	1	new	1	new	54.7%	-13.1%

Source: Ortus Economic Research analysis of BRES data (ONS)

[9] Upstream Metal covers the manufacture of 'basic metals', involving the smelting and/or refining of ferrous and non-ferrous metals and the manufacture of alloys plus the wholesale of metals and metal ores. It contains all of SIC division 24 plus SIC 4672 covering the wholesales activities. The products produced by businesses in this cluster are typically used as inputs in the manufacture of fabricated metal products (parts, containers, structures and so on).

Also notable is that this analysis identifies three local clusters which did not meet the same analytical criteria in 2018 (Personal Services, Education and Knowledge Creation, and Visitor Economy). This demonstrates that their development within Doncaster over recent years has increased their importance to the local economy. That may be because of impressive employment growth (as in the case of Personal Services and Visitor Economy[10]) or – as is likely to be the case with Education and Knowledge Creation – a comparatively strong performance in Doncaster relative to the rest of Great Britain (despite evidence of a small decline in local employment).

4.1.2 Cluster employment key findings

- Eight out of the ten largest clusters (by employment) in the Doncaster economy are 'local' clusters and part of the foundational economy.
- Amongst these, the public sector (Health and Care, Government) are significant employers.
- Two tradeable clusters appear in the top 10; Logistics and E-Commerce and Professional Services. The former capitalises on Doncaster's locational and connectivity strengths, whilst the latter demonstrates a promising development of professional services in Doncaster (a cluster which has been historically weak).
- When high points are considered (clusters with high concentrations of employment relative to the national average), the following tradeable clusters emerge as significant to the Doncaster economy; Logistics & E-commerce, Civil Engineering, Production Technology, Construction Products & Services, Plastics & Vulcanised Products, Upstream Metal and Passenger Transport.
- Local clusters with significant numbers of high points include Health & Care, Automotive Services, Personal Services, Commercial Services, Government, Food and Beverage, and Local Environmental Services.
- These findings assist in the identification of what specialisms are important to the Doncaster economy when a strength-based assessment is made.

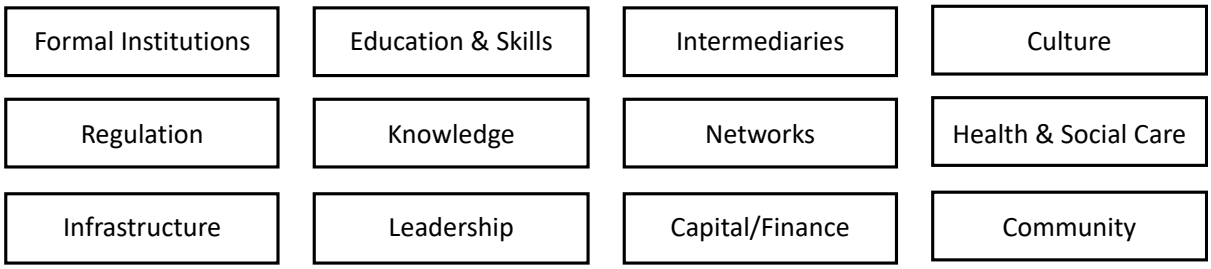
4.2 A strategic approach to developing specialisms

This section builds on existing evidence of the industrial clusters in the Doncaster economy to develop two important perspectives. The first builds on the concept of 'framework conditions' for growth, which was introduced in the first review of Industry Specialisms for Doncaster[11]. The second perspective relates to the key specialisms in the Doncaster economy which, based on examination of a range of key evidence both quantitative and qualitative, this study has found to be supportive of an inclusive, regenerative growth strategy that aims to support wellbeing. These two elements are of course highly related.

It is widely acknowledged that creating effective framework conditions for growth are critical. As shown in Figure 19, framework conditions can include a range of factors that may be addressed by government at different scales. The importance of national framework conditions for regional performance are paramount, especially in a highly centralised economy such as the UK. However, the new economic strategy needs to consider how local strategic activity can be marshalled in order to build framework conditions locally, where possible. While typically 'economic', framework conditions at the local scale are equally relevant to creating the conditions for enhancing civic and social life in Doncaster.

[10] Defined as hotels and other accommodation, arts facilities, museums, historic sites and properties, gardens, zoos and amusement parks.
[11] Ortus Economic Research and Sheffield University, op cit

Figure 19: Framework conditions for growth



This concept is readily aligned with the idea of developing and enhancing local economic ecosystems, especially given that ecosystems thinking aligns with cluster thinking also. A business ecosystem can be considered to be a network of organisations - including suppliers, distributors, customers, competitors, government agencies, and so on - involved in the delivery of a specific product or service through both competition and cooperation. The idea is that each entity in the ecosystem affects and is affected by the others, creating a constantly evolving relationship in which each entity must be flexible and adaptable in order to survive as in a biological ecosystem.

This idea can be widened in order to align with the wider ambition of the Borough Strategy and through the introduction of the idea of place. There is a sectoral (or market) dimension to economic ecosystems, but also a place-based (or spatial) dimension. Firms exist in workplaces (which may be commercial properties, or residences) and they are embedded in the locales and places across the borough of Doncaster. Building the economic ecosystem such that both sectoral links and spatial links are strengthened will contribute to the goals of building a wellbeing economy that is inclusive and regenerative, provided it focuses on embedding local economic activity within their communities and enhancing the potential for firm-to-firm collaboration and competition.

Arguably the central role of Doncaster Council in developing its economic strategy for Doncaster is providing the vision and showing leadership in relation to the type of economy that will support the wellbeing, inclusion and regenerative ambitions. Further, the Council can play the convening and coordinating role that will be crucial to ensuring that the factors needed to develop and sustain effective ecosystems are present.

A central challenge in developing the conditions for ecosystem-led growth, as is the case in Doncaster, is to understand how different aspects and domains are inter-related and interdependent. While recognising that the political leadership is subject to election cycles, the framework conditions involve a number of longer and shorter-term objectives that need sustained commitment if Doncaster is to realise its inclusive and regenerative economic growth ambitions.

In order to advance the discussion about how to develop such ecosystems, there needs to be consideration of where the economic priorities lie, in recognition of a number of factors;

- The idea of specialisation is founded on the concept of increased competition and collaboration which itself links to better economic performance
- One aspect of promoting Doncaster as a place to develop or build a business is to communicate what local strengths and specialisms exist
- There are benefits to being more focused on Doncaster's unique 'offer' – both internally (i.e. education, work and career opportunities for those growing up and living in Doncaster) and externally (i.e. those considering moving to Doncaster for work, investing in Doncaster or considering starting a business locally).

It is in response to this challenge that this study now focuses on a deeper consideration of the specialisms within the Doncaster economy and that could contribute to strategic goals.

The traditional approach to identifying 'specialisms' within an economy is to undertake analysis of economic activities defined by SIC codes (or groups). This is helpful in identifying the specific activities

that differentiate one place from another based on an assessment of density, concentration or location quotients.

There is of course an inherent danger in creating a focus on Industry Specialisms, which is that policy may become narrowly focused on a small number of potential economic growth areas. This may lead to certain economic opportunities being overlooked in the search for specific developments that fit the model driving policy. So there are risks associated with over-specialising within an economic strategy. That said, developing agglomerations of connected businesses and activities also has a range of benefits, including around competitiveness, productivity and growth. Therefore, whilst this section assesses a number of industrial niches which are being considered for inclusion as areas of focus within the economic strategy, the overarching objective is to not 'close down' opportunity by bounding such niches too tightly. This is why the concept of 'Platforms' was introduced in the previous Industry Specialisms report.

Whatever the decisions around specialism focus are to be, there are some abiding principles which should exist at the heart of the strategy to develop them:

- The need for a more holistic approach to economic development. It is also more inclusive, because it allows the plan to move away from the 'picking winners' approach which is commonly criticised.
- Initiatives which are targeted at specialisms within the economy which have a greater critical mass have a number of benefits (e.g. development of transferable skills, increased likelihood of spill-overs such as business start-up, supply chain development, etc) but boundaries need to be porous.
- Strategy has to build on the pre-requisite that the major themes associated with economic development – Skills, Infrastructure, Commercial space, Innovation etc – are all crucially important in their own right but that specialisms provide focus and inform decision making.
- Such an approach allows for a high degree of flexibility in choice of specific intervention, whereas by contrast, a sector approach creates boundaries which restrict this flexibility.
- The approach supports the goal of developing a workforce with transferable skills because it takes a more holistic approach to defining and developing specialisms, supports supply-chain development and encourages cross-sectoral working and collaboration.

To further refine our understanding of specialisms in the economy, and in turn respond to some of the core research questions for this study, this section takes a deeper dive into the Doncaster economy and reviews a number of candidate specialisms. These candidates have been identified through three main routes:

- The prior Industrial Strategy report, providing the opportunity to update knowledge of the importance of these specialisms and the opportunities they represent for the new economic strategy
- Consideration of other initiatives which have been developed based around some form of sectoral focus, such as the recent Employment and Skills Strategy and the emerging concept of 'Centres of Excellence' as a framework to develop policy response and implementation.
- Consideration of the evidence presented in section 4.1 above, focused on economic clusters.

The following nine candidate specialisms have been identified for review through these mechanisms. These are listed in Table 7 below, which also sets out the relationship between these specialisms and the clusters reviewed in the section above. The relationships are 'loose' in that definitions of specialisms, which follow the approach taken in the 2018 report and are designed to reflect aggregations of activities which suit the structure of the local economy in Doncaster, may include some or all of the activities defined within the identified clusters. Note that there is some overlap, including between Engineering and Technology and Rail (both of which contain some elements of the Civil Engineering cluster commented on above.

Table 8: Specialisms and crossover to clusters

Specialism	Crossover to significant tradeable and *local clusters (italicised)*
Engineering and Technology	Civil Engineering, Production technology
Rail	Civil Engineering (railway construction)
Plastics and Materials	Upstream Metal
Mobility	Logistics and E-commerce, Passenger Transport
Digital and Creative	None
Knowledge Intensive Business Services	Financial and Legal Services
Support Services	*Personal Services, Commercial Services*
Education and Knowledge	*Education and Knowledge creation*
Health and Care	*Health and Care*

Source: Ortus Economic Research 2022

Note that SIC definitions for all nine specialisms are included in the Appendix.

The analysis focuses on a number of measures of the current importance of each specialism to the Doncaster economy; number of firms, employment levels, concentration of employment (based on location quotient) and then the 'value' of jobs in each specialism measured using GVA (output) per job. These are not proposed as the primary indicators by which specialisms must be assessed in relation to their relevance to the achievement of the wider strategic goals. However, they do allow an initial quantitative assessment to be made, alongside which further qualitative evidence can also be presented and reviewed.

Analysis presented in Table 9, Table 10 and Table 11 below present a quantitative assessment of the scale and importance of the nine specialisms using the identified metrics. The results are then discussed for each specialism below, alongside qualitative evidence drawn from desk research and consultation, and a spatial analysis of the concentration of employment across Lower Super Output Areas in the borough.

Table 9: Doncaster specialisms – Employment

Specialism	2021 Employment	Employment as % of total	Change in employment 2018–2021	2021 Employment LQ
Engineering & Technology	8,425	6%	–8%	1.61
Rail	1,720	1%	–1%	4.86
Plastics & Materials	3,590	3%	8%	3.87
Mobility	18,230	14%	32%	3.53
Digital & Creative	2,570	2%	–13%	0.31
Support Services	11,580	9%	–1%	0.73
Knowledge Intensive Business Services	8,175	6%	–1%	0.45
Education & Knowledge	1,850	1.4%	-2%	0.46
Health & Care	19,150	13.5%	14%	1.35
All sectors (whole economy)	**130,885**	**100%**	**5%**	**1.00**

Source; ONS Business Register & Employment Survey

Table 10: Doncaster specialisms – Workplaces

Specialism	2021 Workplaces	Workplaces as % of total	Change in workplaces 2018–2021
Engineering & Technology	555	5%	13%
Rail	110	1%	10%
Plastics & Materials	40	0%	14%
Mobility	1,375	12%	24%
Digital & Creative	555	5%	4%
Support Services	1,575	14%	–4%
Knowledge Intensive Business Services	1,230	11%	–2%
Education & Knowledge	120	1%	20%
Health & Care	450	4%	-9%
All sectors (whole economy)	**11,645**	**100%**	**8%**

Source: ONS UK Business Counts, ONS Business Register & Employment Survey

Table 11: Doncaster specialisms – Output and productivity (GB data)

Specialism	GVA (balanced) 2018, £m	GVA share	GVA (balanced) per emp 2018, £000s	Productivity compared with average
Engineering & Technology	£587	9%	£64	126%
Rail	£135	2%	£78	154%
Plastics & Materials	£194	3%	£59	115%
Mobility	£705	11%	£51	100%
Digital & Creative	£164	3%	£56	109%
Support Services	£301	5%	£26	51%
Knowledge Intensive Business Services	£291	5%	£35	70%
Education & Knowledge	£89	1%	£47	94%
Health & Care	£596	9%	£35	70%
All sectors (whole economy)	**£6,311**	**100%**	**£51**	**100%**

Source: ONS Regional economic activity by gross value added (balanced).

Note that productivity is measured as GVA output per employee, and that the definitions for each specialism are not mutually exclusive. Note that the analysis of GVA per employee is achievable at the GB level only because specialisms are defined by 4-digit SIC and the underlying data is not available below the national level for 4-digit SIC codes. However, the GVA output estimates for Doncaster (first column) have been produced based on grossing up GVA per employee estimates (GB) based on Doncaster employment.

4.2.1 Engineering & Technology

Engineering & Technology employed more than 8,400 people in Doncaster in 2021, representing 6% of all borough employment. This was a fall of 8% since 2018, marginally more significant than the fall in employment observed across Great Britain (7%).

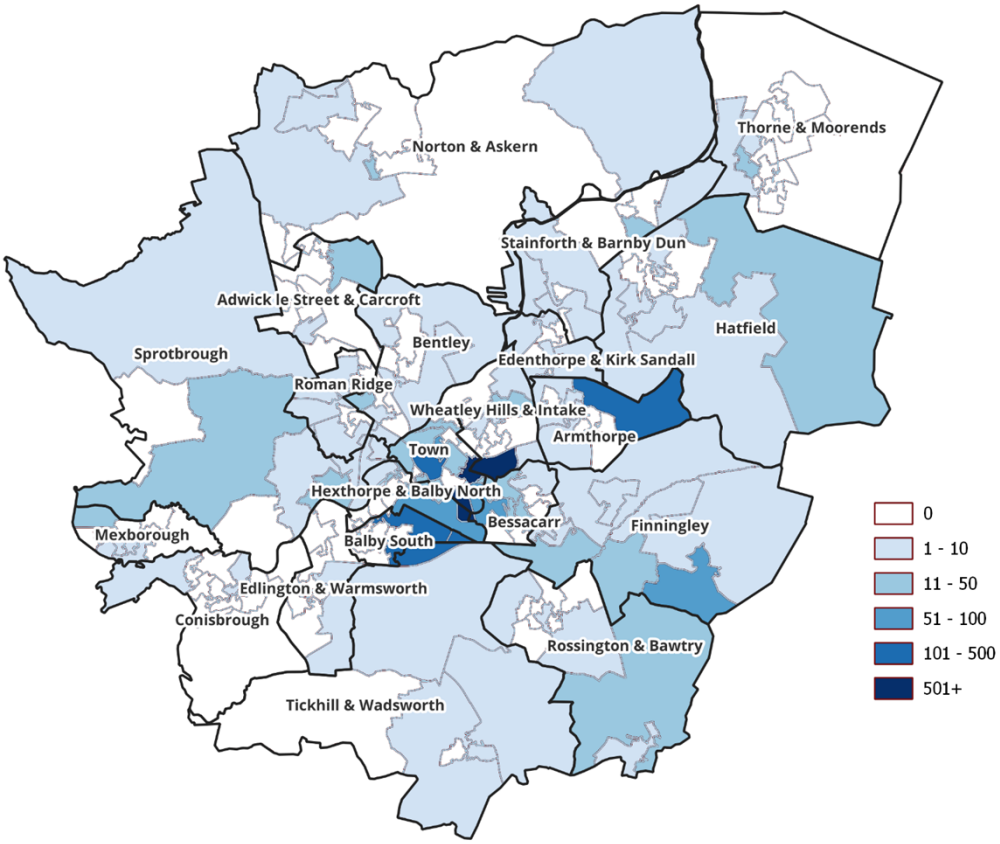
There were 555 Engineering & Technology workplaces in Doncaster in 2021, comprising 5% of all workplaces. The number of workplaces rose by 13% between 2018 and 2021, compared with a rise of 2% across Great Britain. Combined with reducing employment, this implies an increase in the number of smaller workplaces in Doncaster over this period.

Engineering & Technology remains a notable specialism in Doncaster, with an employment location quotient (LQ) of 1.61 (which is slightly below the level of 2018, 1.68).

However, as well as being a comparatively large specialism for the Doncaster economy in employment and workplace terms, the contribution made to economic output (GVA) and productivity levels is even more significant. Output totalled £587m in 2018 (the latest year for which figures are available), representing 9% of all economic output in the borough. GVA per employee is £64k p.a. which is 26% above the borough average. The sector therefore offers significant numbers of jobs at comparatively high skills levels and achieving higher productivity rates that other specialisms and sectors.

Figure 20 shows that there are low levels of Engineering & Technology employment across much of the borough, with a lack of jobs evident in rural areas in the north, north east and south west. Higher number of jobs are found in Doncaster itself, particularly in the centre and south of the city, including in deprived areas. There is also a concentration of Engineering & Technology jobs in the Armthorpe area, and to a lesser extent in the south east of the borough, likely to be associated with the airport.

Figure 20: Employment in Engineering & Technology



Source: ONS Business Register & Employment Survey 2021. Map data: Office for National Statistics licensed under the Open Government Licence v.3.0. Contains OS data © Crown copyright and database right 2022.

Doncaster can be considered to be an important hub of engineering activity within a wider UK strength. Other research indicates that the engineering sector makes a significant contribution to the UK economy with recent data from the Royal Academy of Engineering[12] indicating the profession generates £645bn gross value added (GVA) annually (32% of the UK's economic output) and employs over 8 million people. Figures for the Yorkshire and Humber region show £44bn GVA generated and over 500,000 people employed in almost 49,000 engineering firms. Note that the definitions used in that study and this are different and therefore comparisons should not be invited. However, the national data indicates the

[12] Royal Academy of Engineering, https://raeng.org.uk/news/a-hotbed-of-innovation-new-research-reveals-engineering-adds-up-to-an-estimated-645bn-to-the-uk-s-economy-annually

wider importance of the sector and therefore gives a sense of the economic opportunity that the specialism presents in Doncaster.

There are challenges facing the engineering industry that stem from the Covid-19 pandemic and the ongoing consequences of Brexit. These challenges include, increased costs, shortages of materials, more bureaucracy, skilled workforce shortages, and are affecting productivity with supply chain weaknesses exposed and restrictions within the labour market.

The Engineering sector can make a positive contribution to central Government priorities of achieving net zero and levelling up, along with Doncaster's Wellbeing Goals through improving skills and opportunities for local people and more sustainable practices and green innovation.

Skills is a key issue for the engineering sector with a recent survey by the Institution of Engineering and Technology (IET) reporting that half of new engineering recruits do not have the right skills.[13] Employers indicated that more support and funding to train and reskill staff in priority areas as well as more funding for apprenticeships were actions that would have the most impact on improving skills. Sustainability is one of the biggest areas that employees need additional skills in, and employers consider key to future growth. This is an area that Doncaster could make some real progress with, in terms of improving the employability and skills of local people as well as developing employees with the right skill sets to meet the needs of local employers.

Reshoring, or increased reliance on local production and supply chains, has been suggested as a way that the UK economy can become more resilient to future challenges as well as reducing the carbon impact of manufacturing and transportation.[14] There will be national and regional competition to attract, encourage and retain investment in these reshoring activities but it could be a way of strengthening and growing other industry sectors in Doncaster. Another opportunity relating to net zero will be the need to scale up the infrastructure and related roll out opportunities relating to low carbon hydrogen.

A more robust, vibrant manufacturing sector will be key to increasing investment and employment opportunities in Doncaster.

A global review[15] has identified important ways that engineering contributed to the Covid-19 response and its importance in building resilience to future challenges. This includes providing high-quality and timely data, innovating rapidly to provide novel health solutions and pivoting existing industrial capacity and building new capacity. The review did identify some vulnerabilities in the pandemic response and called for more investment in skills, training and capacity of engineers. This will be an important part of strengthening the skills and sustainability of the engineering sector in Doncaster as well as the resilience of the borough.

There are government funding opportunities to support innovation within the engineering sector. One example is the UKRI Made Smarter Innovation challenge[16] which "aims to deliver a resilient, flexible, more productive, and environmentally sustainable UK manufacturing sector". These aims align well with Doncaster's key priorities. Funded project themes include:

- smart connected factories
- connected and versatile supply chains
- adaptable, flexible manufacturing operations and skills
- new ways to design, test and make products.

[13] The Institution of Engineering and Technology (IET) skills survey (2021), see https://www.theiet.org/media/9235/2021-skills-survey-key-facts-and-recommendations.pdf

[14] Robotics and Automation: a New Perspective, Manufacturing Technology Centre (MTC), see https://www.the-mtc.org/media/bdba0ls0/automation-and-robotics-research-paper-a4-pages.pdf

[15] Engineering X, Global review of the engineering response to COVID-19, see: https://engineeringx.raeng.org.uk/pandemic-preparedness

[16] https://www.gov.uk/government/news/3d-printing-at-record-scale-and-ai-for-steelmaking-among-tech-awarded-share-of-14-million-government-funding

4.2.2 Rail

Rail is a challenging sector to define, particularly in Doncaster where an existing ecosystem is in evidence, containing end users, construction, engineering, consultancy, testing and innovation support. Whilst the transportation and construction elements are straightforward to isolate and analyse using the SIC system, other elements – engineering in particular – are more difficult to quantify.

Using an SIC-based definition, the analysis shows that Rail employed more than 1,700 people in Doncaster in 2021, 1% of all employment. Many of these jobs are located within the 'civil engineering' element of the specialism. Were it possible to include all elements of the specialism, it is likely that the scale of the sector would be more significant than these figures suggest.

Employment fell slightly in Doncaster between 2018 and 2021, by 1%, while growing by 9% across Great Britain. Nevertheless, Rail remains a major specialism in Doncaster, with an employment LQ in 2021 of 4.86 (down from 5.52 in 2018).

There were 110 Rail workplaces in Doncaster in 2021, comprising 1% of all workplaces. This was an increase of 10% since 2018, slightly slower than growth of 12% in Great Britain.

The value of economic output from Rail in 2018 was £135 million (2% of all economic output) and productivity is measured as £78k per annum, which is significantly higher than the borough average across the whole economy (54% above). This result reflects the wide range of comparatively high level of occupations offered by the specialism, from construction to engineering to controls and software.

Figure 21: Employment in Rail

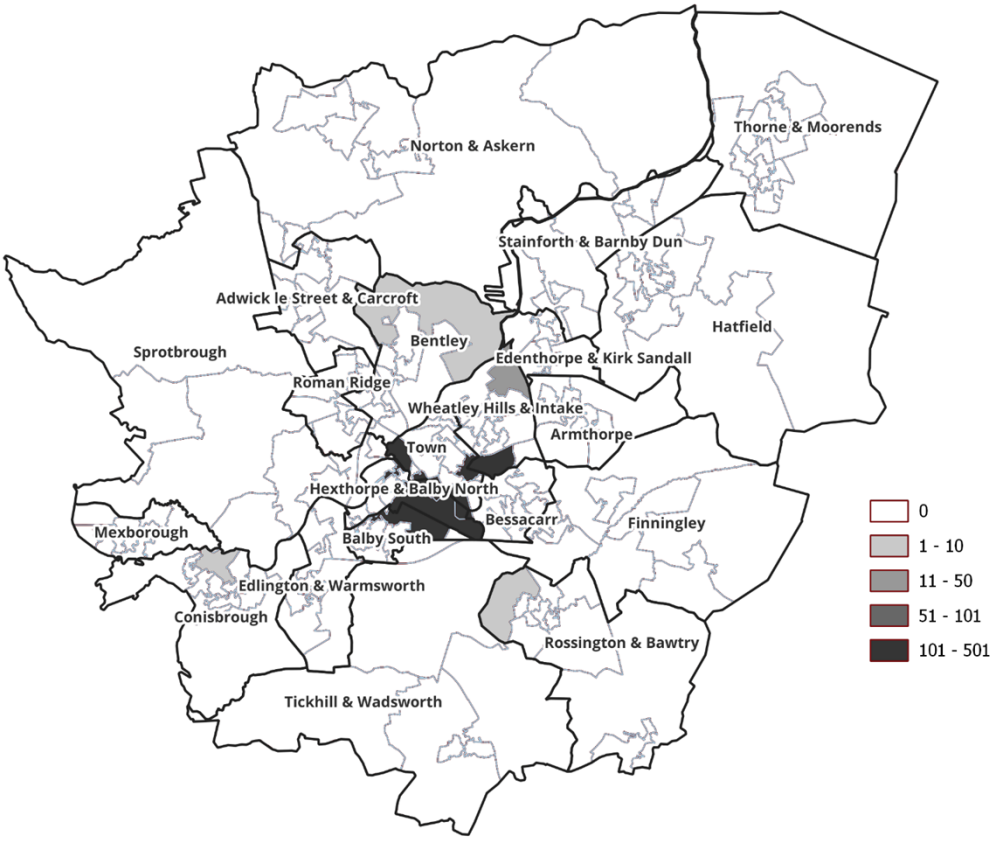


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Figure 21 shows that employment in Rail is concentrated in the city of Doncaster, in particular in close proximity to the railway's major engineering and freight facilities, and to the passenger rail station. There is a clear dependency between employment in this specialism and the physical infrastructure of the rail network in Doncaster.

The Railway Industry Association states that the UK's rail system:

- Contributes over **£36bn** annually to the UK economy (a greater economic impact than the food, drink and tobacco manufacturing and the chemical and pharmaceutical industries);
- Provides around **600,000** jobs (employing more people than the entire workforce of Birmingham);
- Generates **£11bn** annually in tax revenue; and
- Generates **£2.20 of income from every £1 spent** on the rail network[17].

Doncaster enjoys a national reputation as a centre for Rail based on a long history of prominence in the sector. More recently, investment in large infrastructure projects such as HS2 have stimulated demand for the goods and services provided by Doncaster firms. The sector contains a number of large, high profile companies, original equipment manufacturers (OEMs[18]) and operators and is supported by numerous important assets. These include the UK Rail Research and Innovation Network (UKRRIN) Technology and Innovation Hub, which is part of a £92 million academic and industry partnership programme and is located at Unipart Rail's headquarters in the city. The hub aims to "support the sector in translating academic research and innovation to solve strategic industry challenges and to enable and develop the next generation of products and services. The Hub will have a particular focus in supporting SMEs, both those established and new to the industry."[19]

Doncaster is also home to the National College for Advanced Transport and Infrastructure (NCATI) which delivers skills and training in areas related to the rail, transport and infrastructure sectors (e.g. engineering, project management, digital). Part of the University of Birmingham and with links to other Higher Education providers (such as Sheffield Hallam University), NCATI delivers education from level 2 up to level 6.

The Williams-Shapps Plan for Rail was published in May 2021 and sets out the Government's plans for altering the management of railways in Great Britain. One of the key promises made in the plan was to grow the rail network with investment in new lines, trains, services and electrification. Doncaster is on the shortlist to house the Great British Railways HQ, and if it is successful is expecting a considerable boost to the sector as well as other benefits (such as further regeneration of the town centre)[20].

However, local challenges include the creation of a pipeline of talent, particularly in engineering, to take up opportunities in the sector, the provision of suitable premises (including but not limited to grow-on space for SMEs) and uncertainty over the longevity of national investment programmes (including HS2 and Great British Railways).

4.2.3 Plastics & Materials[21]

Plastics & Materials employed 3,590 people in Doncaster in 2021, representing 3% of all employment. Employment levels have increased by 8% since 2018, contrasting with a fall of 7% across Great Britain, indicating that local employment trends in Doncaster are bucking the national trend.

There were 40 Plastics & Materials workplaces in Doncaster in 2021, a slightly higher number than in 2018 (35). These accounted for less than 1% of all workplaces. Across Great Britain, the number of Plastics & Materials workplaces fell by 4%.

Plastics & Materials is a major specialism in Doncaster, with an employment LQ of 3.87. This represents an increasing concentration of employment in Plastics & Materials in Doncaster compared with 2018,

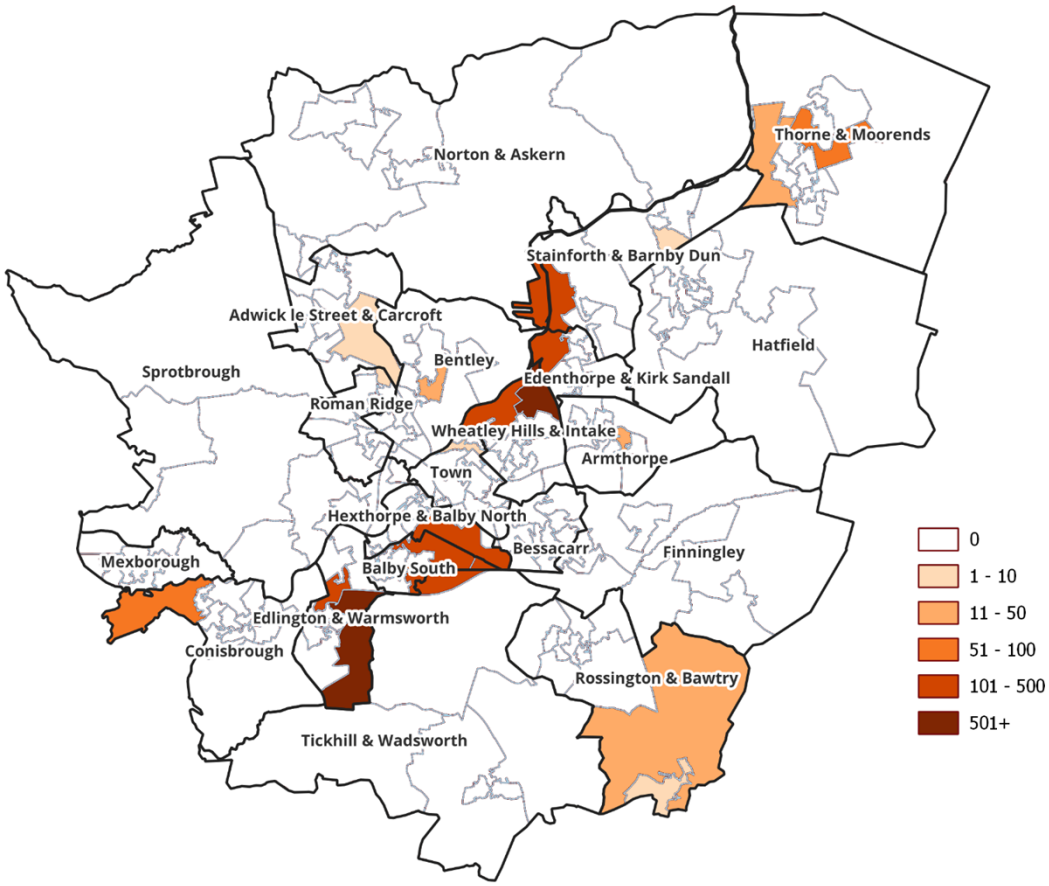
[17] Rail Industry Association, *The Economic Contribution of UK Rail,* 2018
[18] An OEM is typically a company that manufactures and sells products or parts of a product that their buyer, another company, sells to its own customers under its own branding or incorporates into its own products
[19] https://www.ukrrin.org.uk/ukrrin-launches-new-technology-and-innovation-hub-in-doncaster/
[20] https://www.doncaster.gov.uk/services/culture-leisure-tourism/great-british-railways-hq
[21] This specialism covers activities such as the manufacture and wholesale of rubber, plastic and glass as well as the manufacture/production of a range of metal products and products made from metal, rubber, plastic and glass.

when the employment LQ was 3.42. These results are reflective of a specialism that is dominated by a small number of comparatively large manufacturing businesses, such as Polypipe.

The Plastics and Materials specialism contributed £194m in GVA to the Doncaster economy in 2018 (3% of the borough total) and has productivity levels which are marginally above the borough average (£59k p.a., 15% above the average).

Figure 22 shows that employment in Plastics & Materials is concentrated in particular parts of the borough, including in the north east and south of Doncaster itself, in the New Edlington, Conisbrough/Mexborough and Thorne areas, and in the area south of the airport.

Figure 22: Employment in Plastics & Materials



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The Advanced Materials and Manufacturing sector is identified in the government's Innovation Strategy as 1 of 7 technology families that the UK has globally competitive R&D and industrial strength[22]. In the UK firms advanced materials-related activity contributes an estimated £14.4 billion in gross value added to the UK economy, equivalent to around £72,000 per employee (25% above the UK average)[23].

A recent call from the Department for Business, Energy and Industrial Strategy (BEIS) for evidence on UK Advanced Materials sector identified a number of challenges, including:

- Gaps in strategy and leadership
- Weakness in commercialisation of R&D and innovations

[22] BEIS, Advanced Materials, Call for Evidence, see: https://www.gov.uk/government/consultations/uk-advanced-materials-call-for-evidence

[23] BEIS, New Business Secretary announces £95 million funding for super-materials of the future to boost UK growth, see: https://www.gov.uk/government/news/new-business-secretary-announces-95-million-funding-for-super-materials-of-the-future-to-boost-uk-growth

- Funding and support gap for UK supply chain and late stage development and demonstration facilities
- UK lack of domestic carbon fibre supply in the context of global demand being expected to outstrip supply by 2025
- Skills gap in supply and issues in retaining talent in the sector and the need to maintain skilled labour force critical mass.

These challenges are alongside the Brexit related impacts of increased costs, bureaucracy, supply chain and constraints on labour supply.

UK has strengths in research and development in Advanced Materials. Government funding of £95 million recently announced[24] to further support the Royce Institute in Manchester which facilitates collaboration between academia and industry.

Advanced materials play a vital role in achieving net zero through the development of novel materials and processes – examples include light-weighting materials in transportation, new electrode materials in energy, biosensors in healthcare, metal-organic frameworks (MOFs) to remove pollutants from the environment, and materials for low-carbon production of hydrogen.

The advanced materials sector has huge potential for growth in the UK with the right support for innovation, commercialisation and skills. This sector could bring more high value jobs and support the wider supply chain in Doncaster, facilitating growth and innovation in other sectors and contributing to sustainability goals.

4.2.4 Mobility

Mobility is a very significant specialism in the Doncaster economy, employing over 18,200 people in 2021 and accounting for 14% of total employment. This was an increase almost one third since 2018 (32%), compared with growth of 8% across Great Britain.

There were 1,375 Mobility workplaces in Doncaster in 2021, representing 12% of all workplaces. The number of Mobility workplaces rose by almost one quarter since 2018 (24%), compared with an increase of 9% in Great Britain.

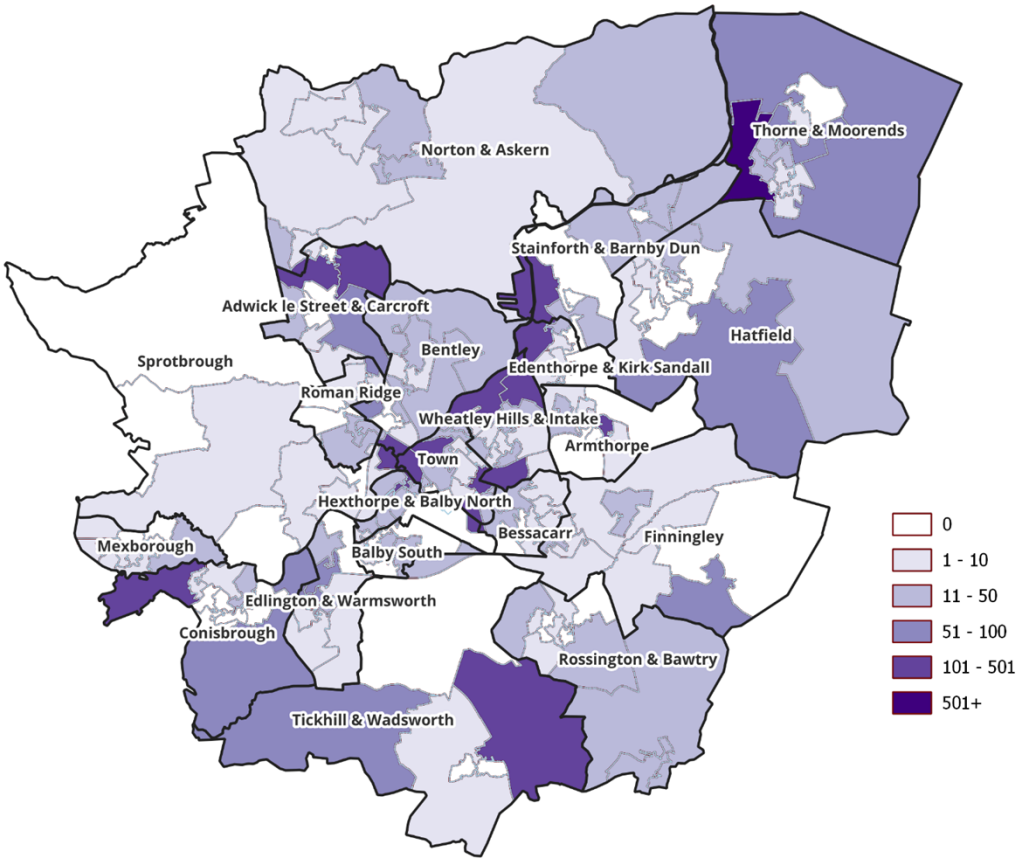
Employment in Mobility is highly concentrated in Doncaster, with an employment LQ of 3.53 in 2021. This represents an increasing concentration of employment in this specialism compared with 2018, when the employment LQ was 2.99.

Whilst it is broadly understood that some occupations within the Mobility sector are comparatively low paid, the analysis of productivity across the whole specialism indicates that Mobility has a comparatively high rate of productivity (£78k per annum)

Figure 23 demonstrates that the Mobility specialism employs people across large parts of the borough, with the greatest concentrations of jobs in areas close to major roads and motorways and the railway – though notably, the data do not reflect employment at the iPort logistics hub located at Junction 3 of the M18 (this is likely to be because employers such as Amazon and Lidl are classified as retail organisations). The distribution of jobs across the borough, including in some areas of relatively high deprivation, and the opportunities presented by the GatewayEast and Unity sites, suggest Mobility has good potential to support regenerative and inclusive growth by providing opportunities for Doncaster residents.

[24] BEIS, New Business Secretary announces £95 million funding for super-materials of the future to boost UK growth, see: https://www.gov.uk/government/news/new-business-secretary-announces-95-million-funding-for-super-materials-of-the-future-to-boost-uk-growth

Figure 23: Employment in Mobility



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Looking more broadly at the mobility specialism, which centres around the transportation of goods and people, it is widely known to be a key sector in the UK economy. The haulage and logistics industry alone employs 2.5 million people and the sector is the UK's fifth largest employer and is worth £124nn GVA to UK economy[25].

Covid-19 and Brexit have had an impact on all sectors but the shift in passenger habits alongside skills and supply chain issues has had a significant impact on the transport sector. That said, the pandemic had a significant impact on consumer buying behaviour, accelerating the shift to online shopping. This has proven to be a key driver for growth in the last two years, with Doncaster benefiting from the growth in packing and fulfilment operations including on key sites such as iPort.

The HGV driver shortage (partly attributable to Brexit, partly to the Covid-19 pandemic and partly due to a longer-term trend) has led to huge pressure on the sector.[26] In addition, the age profile of the industry is a key challenge; for example, 38% of transport managers in the UK are over 55. Evidence indicates that recruitment problems are almost ubiquitous; 96% of UK logistics businesses reported

[25] Road Haulage Association, Road Haulage Facts and Stats, see: https://www.rha.uk.net/News/Guidance/Road-Haulage-Facts-and-Stats

[26] Cogita Talent, Where has the talent gone? A breakdown of the UK's skills shortage in transport and logistics professions, see: https://cogitotalent.com/uks-skills-shortage-in-transport-and-logistics-professions/

problems recruiting HGV drivers in September 2021[27] whilst 13% reported severe to very severe problems recruiting warehouse staff.

There was a large decrease in passenger rail journeys during the pandemic. In 2020-21, the number of railway journeys in Great Britain was less than one quarter of the journeys made in 2019-20 and passenger revenue in 2020-21 less than 20% of that achieved in 2019-20[28] .

The number of freight trains running on the mainline networks has increased with 213,513 freight trains in April 2021 to March 2022 (12.7% higher than one year previously and 1.9% higher than two years previously), in contrast to many years of a downward trend[29].

The transport sector is fundamental to the journey to net zero as it is responsible for 27% of UK greenhouse gas emissions, with road transport responsible for almost all of this (91%)[30]. It is widely accepted that in order to achieve net zero UK transport needs to be decarbonised.

Technology is transforming transport with the electrification of vehicles (EVs) and alternative powertrains, connected and autonomous vehicles (CAVs) and Mobility-as-a-Service (MaaS). Estimates suggest that the autonomous vehicles sector will be worth £62 billion to the UK by 2035[31]. The sector is a key user of digital technology, and the density of local operators may represent an opportunity for cross-sectoral development between mobility and the digital sector.

There may also be important opportunities within the 'green tech' space. In order to achieve net zero there will need to be high levels of innovation and technology development in areas such as batteries, hydrogen and power electronics. These industries have the potential to provide large scale revenue and employment.[32] Local initiatives such as the potential for a hydrogen refuelling hub along with potential opportunities to utilise the local rail specialism to create an innovation hub focused on decarbonising the rail sector, could present exciting and unique opportunities for the local economy.

The ongoing shift to online shopping has increased demand for transport and warehousing services with a big rise in the construction of new warehouses. New warehouse projects were worth £5.6 billion in 2021 and 16% of this spend was on locations in Yorkshire and Humber[33].

4.2.5 Digital & Creative

The Digital & Creative specialism employed slightly fewer than 2,600 people in Doncaster in 2021, accounting for 2% of all employment. Employment fell by 13% between 2018 and 2021, compared with growth of 4% across Great Britain, though this follows a period of considerable growth between 2010 and 2018.

There were 555 Digital & Creative workplaces in Doncaster in 2021, an increase of 4% since 2018. Taking into account the fall in employment, this implies that the average size of workplaces has shrunk over this period.

Digital & Creative is not a demonstrable specialism in Doncaster, with an employment LQ of 0.31 in 2021. Employment is becoming less concentrated in Digital & Creative compared with 2018, when the

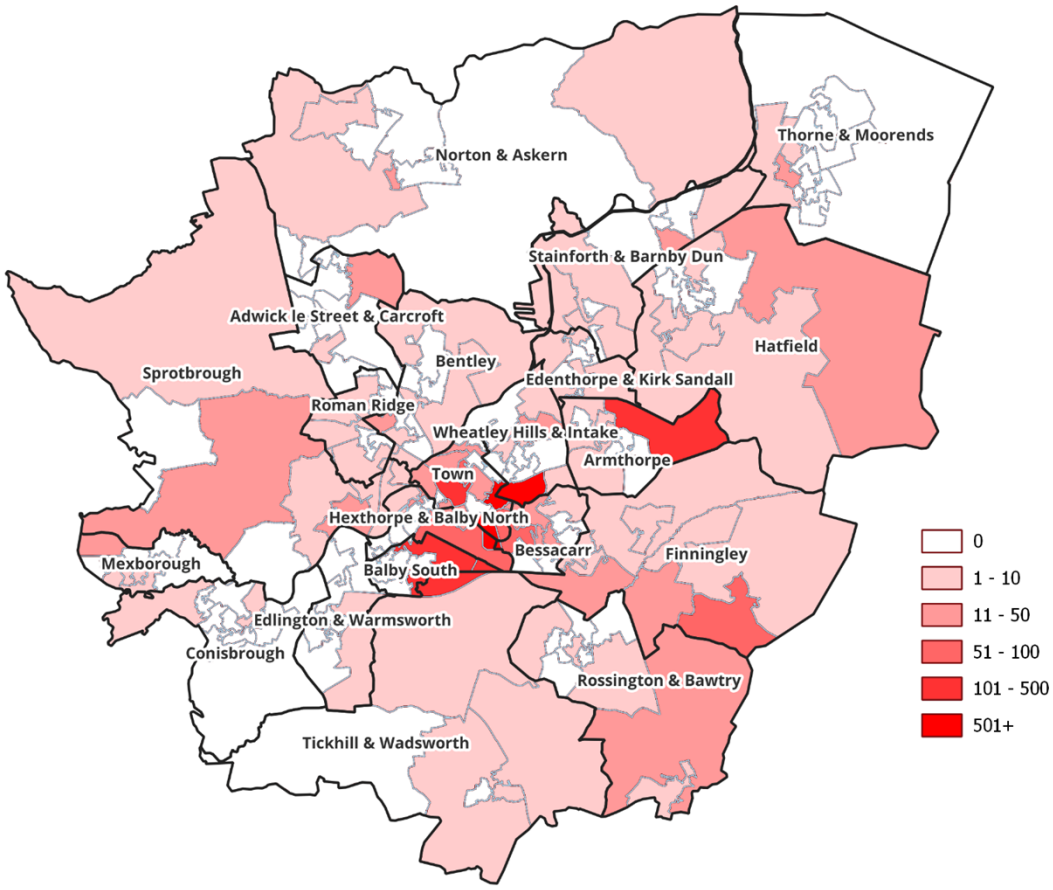
[27] Logistics UK performance tracker, see: https://logistics.org.uk/coronavirus/logistics-performance-tracker
[28] House of Commons Research Briefing, The Future of Rail (2022), see: https://researchbriefings.files.parliament.uk/documents/CBP-8961/CBP-8961.pdf
[29] Office of Rail and Road Freight rail usage and performance, see: https://dataportal.orr.gov.uk/media/2062/freight-rail-usage-and-performance-jan-mar-2022.pdf
[30] Connected Places Catapult, Speed up zero emission vehicle usage across cities or risk missing decarbonisation targets, see: https://cp.catapult.org.uk/news/speed-up-zero-emission-vehicle-usage-across-cities-or-risk-missing-decarbonisation-targets-report-urges/
[31] Innovate UK KTN, Autonomous Vehicles, see - https://ktn-uk.org/transport/autonomous-vehicles/
[32] Innovate UK KTN, Low Emission Vehicles, see - https://ktn-uk.org/transport/low-emission-vehicles/
[33] ONS, The rise of the UK warehouse and the "golden logistics triangle" (2022), see: https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/articles/theriseoftheukwarehouseandthegoldenlogisticstriangle/2022-04-11

employment LQ was 0.38. The contribution to economic output is also comparatively small (£164m, 3%) whilst productivity levels are just above the borough average (9% above at £56k per annum).

It should be noted that the definition of Digital and Creative used here includes some aspects of the associated 'cultural' sector (such as performing arts, venues and galleries) but not others (primarily heritage sites and properties).

As already commented upon, there are low levels of Digital & Creative employment across much of the borough. The spatial distribution is set out in Figure 24, which shows a sparsity of jobs evident in rural areas in the north, north east and south west. Employment is particularly concentrated in Doncaster itself, and in the Armthorpe area. This distribution is somewhat typical of digital clusters across the UK, with a preference for urban locations that provide access to amenities and services. The proximity of existing jobs to the City Centre and Lakeside sites suggests these might provide opportunities to develop clusters within the Digital & Creative specialism.

Figure 24: Employment in Digital & Creative



Source: ONS Business Register & Employment Survey 2021. Map data: Office for National Statistics licensed under the Open Government Licence v.3.0. Contains OS data © Crown copyright and database right 2022.

Looking more widely, the digital and creative sector is a key sector for growth in the UK economy. Pre Covid-19, the Creative Industries, including digital and contributed £116bn in GVA to the UK economy, growing at double the rate of the rest of the economy between 2011 and 2019[34]. Over 2 million people are employed in the Creative Industries, 32% of these are self-employed (compared to 16% of the economy as a whole) and 95% of creative businesses are micro-businesses. The North of England (North East, North West, Yorkshire and the Humber) has 15% of Creative Industries employment, 13% of

[34] PEC National Statistics on the Creative Industries, see: https://pec.ac.uk/news/national-statistics-on-the-creative-industries

businesses and 10% of GVA. Importantly, digital technologies are becoming increasingly important to all business activities, and therefore represent a key cross-sectoral opportunity in any local economy.

The Government published the UK Tech Competitiveness Study[35] in 2021 which identified a need to fill the skills gap in the sector with action needed at all education levels. There are significant digital skills shortages in areas such as data science and AI.

Prior to the challenges of Covid-19 and Brexit there were skills issues (shortages alongside a lack of the right skills) in over 40% of creative industry firms[36]. Yorkshire and Humber were one of the regions with the highest proportion of firms affected by this issue. Brexit in particular is reported to have increased bureaucracy, paperwork, costs and staff shortages in the sector.

At the national level, a Department for Culture, Media and Sport (DCMS) committee[37] has identified the need for targeted support, such as through VAT or business rate relief, to cultural, sporting and media organisations and the importance of addressing geographical funding imbalances for arts and culture in 'levelling up' the UK. This committee has recommended local communities and stakeholders have greater decision making influence, with local authorities "empowered" and bureaucracy reduced. Furthermore, the Creative Industries Policy and Evidence Centre recently published a briefing on what support the Creative Industries need[38] in order to support growth in the sector. This briefing included recommendations such as expanding the Creative Industries Clusters programme to support the Levelling up agenda and support for innovation in the sector by changing R&D tax relief.

Digital technologies played a vital role in managing the response to the Covid-19 pandemic with the rate of digital adoption across all sectors increasing massively. There will be further opportunities to develop and maintain that trend as behaviours and expectations have changed, with digital skills and technologies becoming more embedded across different sectors. This can be seen in the expanding adoption of AI, virtual reality and collaborative tools. Digital skills are also going to be essential in achieving net-zero according to the Intergovernmental Panel on Climate Change (IPCC)[39].

It is also important to recognise the wider potential benefit and impact of a focus on culture, creative and the digital sector. The Cultural, Arts and Heritage sector is important to the South Yorkshire Economy with a recent report finding that it contributes £200 million GVA and 6,400 jobs[40]. The wider economic and social benefits such as benefits supporting tourism, creative industries, health, education, community and individual wellbeing, contribute a further £170m to the local economy and £1.2bn in individual wellbeing.

The majority (85%) of cultural organisations in South Yorkshire are directly involved in wider community activities such as education and training and community support (e.g. schools engagement, classes, local community events). These activities are invaluable to inclusion and social cohesion in particular as they are often free and engage with often excluded parts of the community. The evidence also demonstrated the value of a strong cultural and heritage offer in attracting skilled workers, businesses and investment.

[35] DCMS, UK Tech Competitiveness Study (2021), see https://www.gov.uk/government/publications/uk-tech-competitiveness-study/uk-tech-competitiveness-study

[36] PEC The Migrant and Skills Needs of Creative Businesses in the United Kingdom, (2018), see: https://cdn2.assets-servd.host/creative-pec/production/assets/publications/The-Migrant-and-Skills-Needs-of-Creative-Businesses-in-the-United-Kingdom-REPORT.pdf

[37] House of Commons Digital, Culture, Media and Sport Committee, Reimagining where we live: cultural placemaking and the levelling up agenda (2022), see: https://committees.parliament.uk/publications/31429/documents/176244/default/

[38] https://pec.ac.uk/policy-briefings/three-ways-to-support-growth-in-the-creative-industries

[39] BCS, The Chartered Institute for IT, shares its top tech priorities for the new PM and team, see: https://www.engc.org.uk/news/news/bcs-top-tech-priorities-for-the-new-pm/

[40] ChamberlainWalker, Unlocking the Potential of Culture, Arts and Heritage In South Yorkshire (2022), see: https://southyorkshire-ca.gov.uk/getmedia/14bbecab-c978-4abd-8dfc-e4818efc4cd0/Sheffield-CR-Culture-Arts-and-Heritage-Report-final.pdf

The potential for culture and creativity to play a role in delivering some of the wider inclusivity and wellbeing goals that are contained with the Borough Strategy is therefore considerable.

4.2.6 Support Services

Support Services covers a range of local service activities such as business administration, employment agencies, building and industrial cleaning, rental and leasing activities, accounting, advertising and PR. This specialism employed over 11,500 people in Doncaster in 2021, accounting for 9% of all employment. Employment fell slightly between 2018 and 2021, by 1%, compared with growth of 4% across Great Britain.

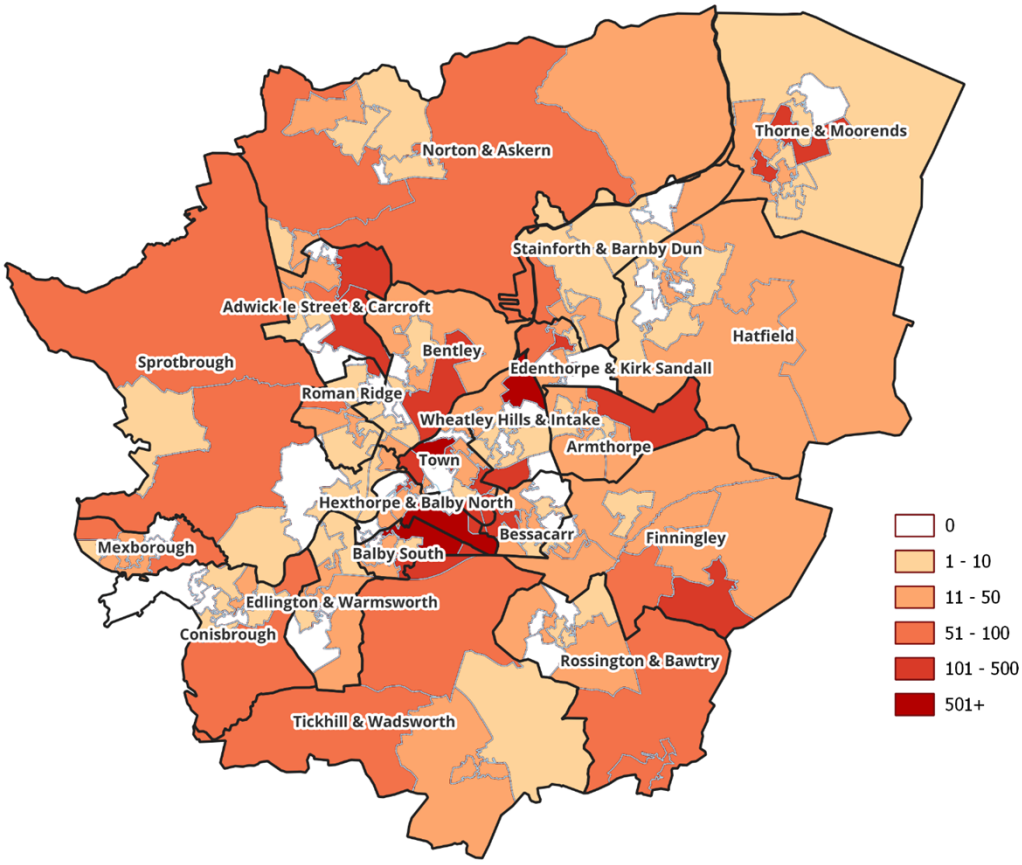
There were 1,575 Support Services workplaces (14%) in Doncaster in 2021, a fall of 4% since 2018. This was similar to the fall of 3% in the number of Support Services workplaces across Great Britain in this period.

Support Services is not a quantifiably important specialism in Doncaster; the employment LQ in 2021 was 0.73 slightly reduced from 0.79 in 2018, meaning that the number of jobs in this specialism relative to all jobs in the local economy is below the national average.

Productivity levels in Support Services are just 51% of the borough average (26k p.a. cf £51k p.a.) and this means that the proportion of local economic output derived from the sector (5%) is comparatively small relative to the number of jobs within the sector (9%).

Unsurprisingly, given its role in the economy, employment in Support Services is spread across the borough as shown in Figure 25. This shows that the greatest concentrations of jobs in those areas with the greatest concentration of businesses generally. The spread of jobs, including in areas of relatively high deprivation, suggests Support Services can make an important contribution to regenerative and inclusive growth by providing employment opportunities to Doncaster residents.

Figure 25: Employment in Support Services



Support Services are very much part of the local, foundational economy. They provide services to local people, local businesses and visitors and tend to be either office-based. Demand for these services tends to come from the local economy, though some firms – especially those that are larger – will attract demand from further afield. However, with local demand being a considerable factor in driving business performance in the sector, the density and performance of local businesses will be a significant driver for future growth. Support Services should be considered to be a set of activities which, whilst comparatively low value economically, provide important job opportunities for workers with a wide range of educational and skills levels, from the administrative/clerical, to the professional.

4.2.7 KIBS

Knowledge Intensive Business Services covers a wide range of professional, legal, financial and creative services. The sector employed slightly fewer than 8,200 people in Doncaster in 2021, accounting for 6% of total employment. Employment in Knowledge Intensive Business Services in Doncaster fell by 1% between 2018 and 2021, while remaining broadly unchanged across Great Britain. However, employment had been growing in the previous eight years (2010 and 2018).

There were 1,230 Knowledge Intensive Business Services workplaces in Doncaster in 2021, marginally below the number in 2018 (down 2%). This compares to a fall of 4% in Great Britain.

Knowledge Intensive Business Services is not a notable specialism in Doncaster, with an employment LQ of 0.45 in 2021. Furthermore, employment in Doncaster is becoming less concentrated in Knowledge Intensive Business Services compared with Great Britain; the employment LQ in 2018 was 0.47. In addition, analysis of output and productivity indicates that the sector contributed £291m to the Doncaster economy in 2018 (5% of all output) and a productivity level of £35k p.a. (70% of the borough average).

Figure 26: Employment in Knowledge Intensive Business Services

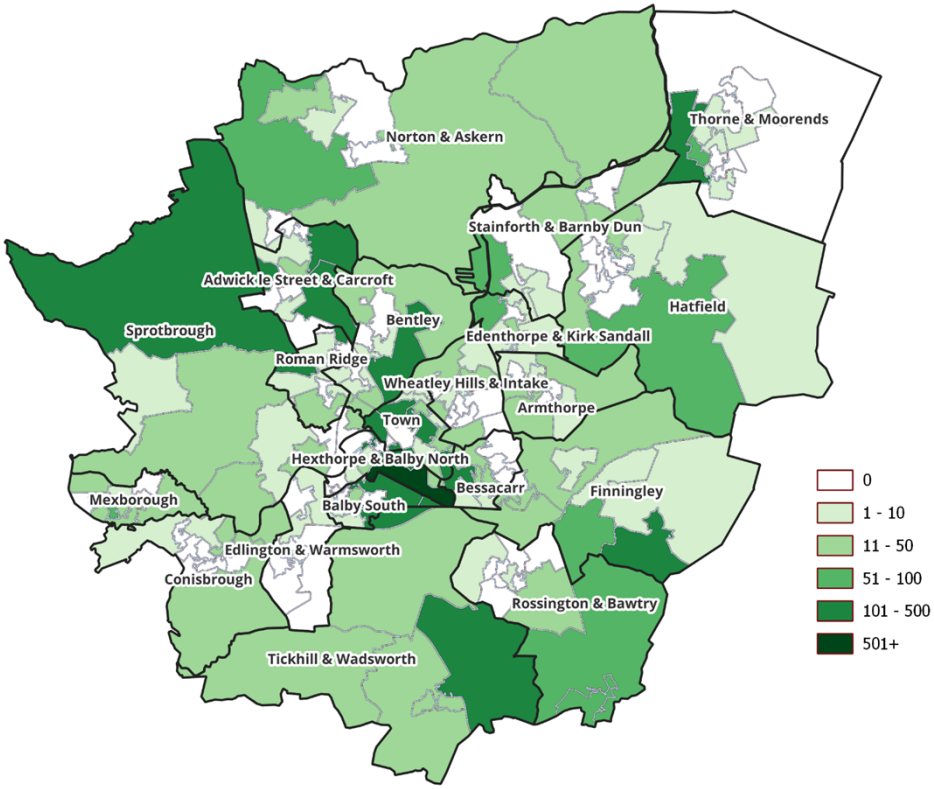


Figure 26 shows that there are low levels of employment in Knowledge Intensive Business Services across much of the borough, but in common with some other specialisms a lack of jobs is evident in rural areas in the north, north east and south west. The greatest concentration of employment is in the city of Doncaster itself, including in relatively highly deprived areas south of the city centre.

This specialism can be considered alongside Support Services as one which is highly dependent on demand from within Doncaster (primarily business to business rather than driven by resident expenditure). As an important part of the foundational economy, opportunities to develop the KIBS sector rest primarily through stimulating additional local demand (which relies on growth across the economy as well as increases in business and employment density) whilst also facilitating the expansion of ambitious SMEs via supplier relationships to other locations in the sub-region and beyond.

4.2.8 Education & Knowledge

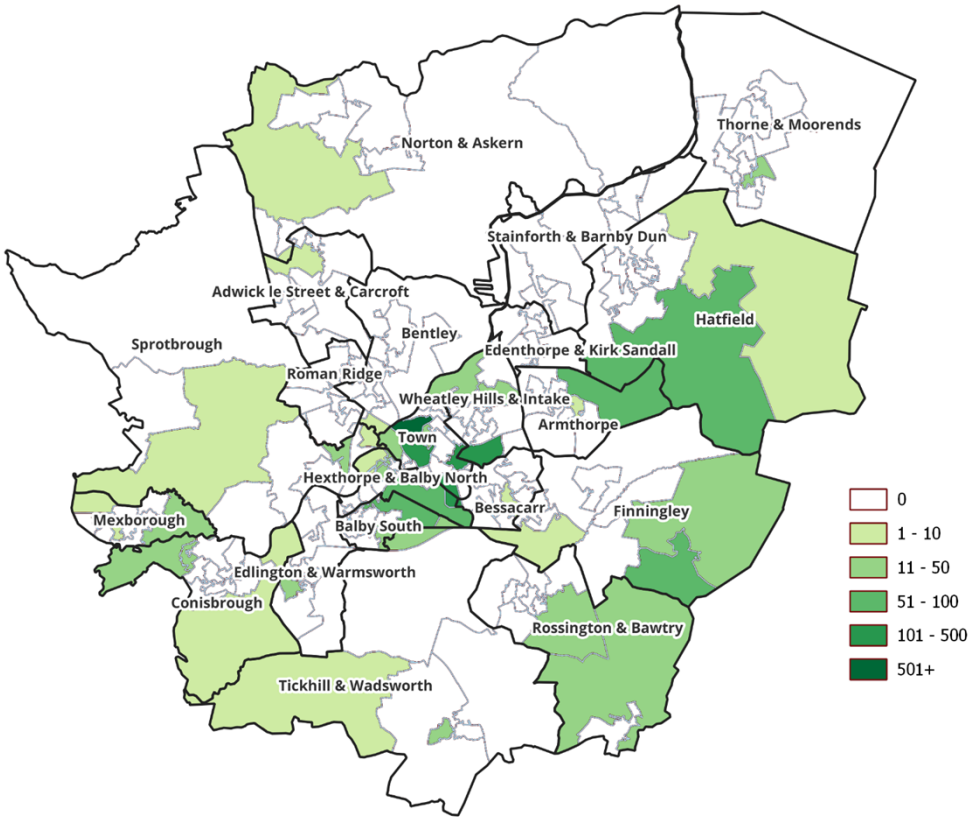
The Education & Knowledge sector (which covers research and development, post-secondary education and educational support services) employed 1,850 people in Doncaster in 2021, accounting for 1% of total employment. Employment in Education & Knowledge in Doncaster fell by 2% between 2018 and 2021, while growing by 6% across Great Britain.

There were 120 Education & Knowledge workplaces in Doncaster in 2021, a growth of 1% since 2018. This compares to a growth of 3% in Great Britain.

The sector had an employment LQ of 0.46 in 2021, meaning that such employment is not concentrated in the borough. Employment in Doncaster is becoming less concentrated in Education & Knowledge compared with Great Britain; the employment LQ in 2018 was 0.51.

Productivity levels are just below the borough average (£47k p.a. cf an average of £51k p.a.) and the sector contributed £89m in GVA output in 2018.

Figure 27: Employment in Education & Knowledge



Source: ONS Business Register & Employment Survey 2021. Map data: Office for National Statistics licensed under the Open Government Licence v.3.0. Contains OS data © Crown copyright and database right 2022.

Figure 27 shows that employment in Education & Knowledge is concentrated in relatively few parts of the borough, most notably in the city of Doncaster itself but also in a number of more rural areas outside the city. The City Centre & Waterfront site has provided good opportunities for this specialism. The relative concentration of employment around the airport suggests the GatewayEast site may present further opportunities.

Based on this analysis, Education & Knowledge cannot be identified as a specialism in Doncaster in terms of its depth and scale. However, it represents an important asset in relation to the ambition to move the Doncaster economy up the value chain. The sector should be seen to be important to and supportive of innovation and research and development. However, a considerably amount of such activities will also occur 'in-house', a good example being in sector companies that operate in Rail, Advanced Engineering and so on. The development of this sector to enhance the innovative capability of Doncaster, and therefore to improve the number and value of jobs locally as well as attract investment and to promote Doncaster as a place to start and grow innovative businesses, could present significant opportunities in response to the inclusivity and regenerative goals. New technology development in the field of 'green tech', for example, could build on a number of demonstrable local strengths whilst also creating new enterprise and growth opportunities across the economy.

4.2.9 Health & Care

Health & Care employed 19,150 people in Doncaster in 2021, accounting for 14.6% of all employment, meaning it is a very significant sector for local jobs. Employment increased by 14% between 2018 and 2021, compared with growth of 8% across Great Britain.

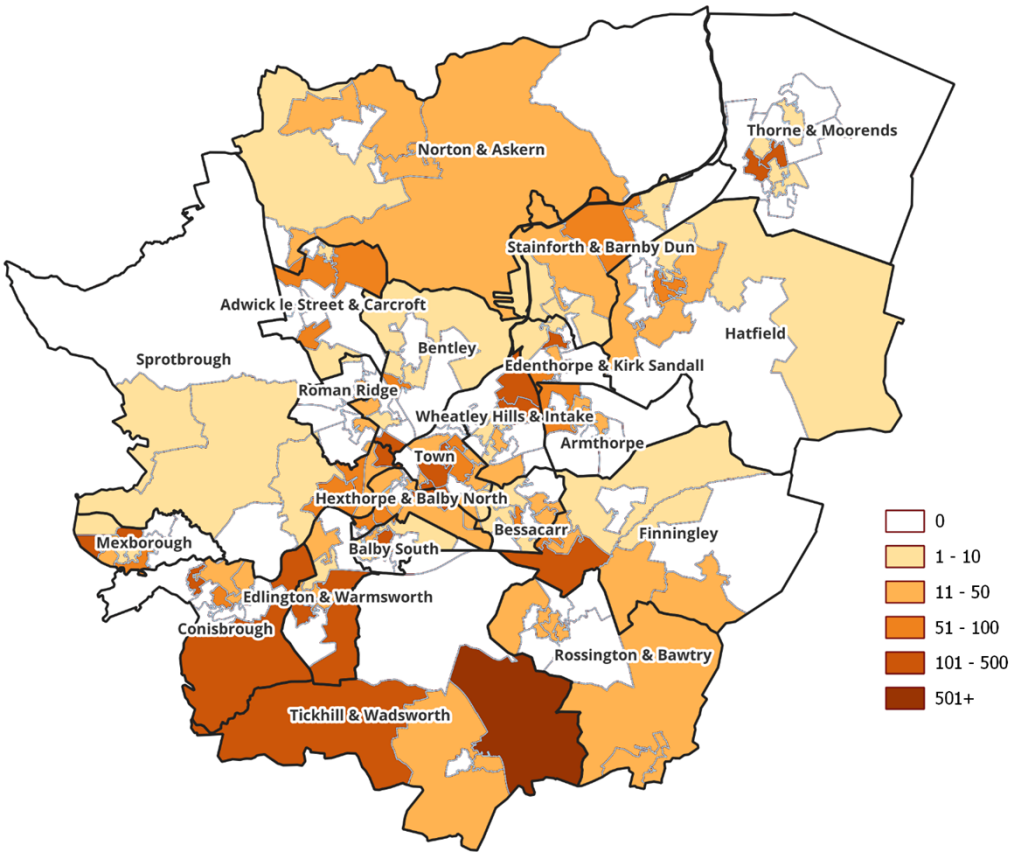
There were 450 Health & Care workplaces in Doncaster in 2021, a decrease of 9% since 2018. Taking into account the growth in employment, this implies that the average size of workplaces has grown over this period. Indeed, much of the employment growth was concentrated in hospital activities.

Health & Care can be considered somewhat specialised in Doncaster, with an employment LQ of 1.35 in 2021. Employment is becoming more concentrated compared with 2018, when the employment LQ was 1.32.

Productivity levels are below the average (£35k p.a. cf £51k p.a.) but the sector contributes £596m in economic output (9% of the whole local economy).

Figure 28 shows that employment in Health & Care is concentrated in particular parts of the borough, often outside the city of Doncaster itself and including some relatively deprived rural areas. In part, the distribution of jobs reflects the location of hospital facilities, and this is evident in concentrations of employment in parts of Doncaster and in Mexborough. The distribution of jobs in other parts of the borough suggest the Health & Care specialism can support regenerative and inclusive growth by providing employment opportunities for Doncaster residents in parts of the borough where other opportunities may be limited.

Figure 28: Employment in Health & Care



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It is widely understood that the Health and Care sector is an important part of the UK economy. On top of the scale and impact of the health sector including the NHS, primary care, hospital activities, dentists and other healthcare providers, the sector also covers social care.

The NHS employs 1.5 million people in England[41] and is one of the country's largest employers. Staff shortages are also a serious issue within the NHS, with vacancy rates around 8%. It is estimated that 4 in 5 nurse vacancies are filled by temporary staff resulting in disruption to care and a significant impact on staffing costs. Key factors behind the staff shortages are insufficient number of staff being trained and a reliance on international recruitment which has been adversely affected by Brexit, with more EU nurses leaving the NHS than joining it.

Skills for Care[42] estimates that 17,900 organisations were involved in providing or organising adult social care in England (2021/22). The sector contributes £51.5 billion GVA to the economy (up 2% from 2020/21). The total number of adult social care posts in 2021/22 was 1.79m with 165,000 vacancies. Vacancies are a significant issue, increasing by 52% in 2021/22 (rate of 10.7%), with recruitment and

[41] Nuffield Trust, The NHS Workforce in Numbers, see: https://www.nuffieldtrust.org.uk/resource/the-nhs-workforce-in-numbers

[42] Skills for Care, The state of the adult social care sector and workforce in England (2022), see: https://www.skillsforcare.org.uk/adult-social-care-workforce-data/Workforce-intelligence/publications/national-information/The-state-of-the-adult-social-care-sector-and-workforce-in-England.aspx

retention cited as the cause, resulting in increased competition for staff. Those employers that invest in high levels of learning and development, on average, had lower staff turnover.

The Government is running a campaign to encourage people to join the adult social care workforce[43] and health and care workers have been added to the shortage occupation list with visas available to overseas workers that qualify.

As well as the healthcare skills needed by the Health and Care workforce there is a growing requirement for digital skills. The benefits of digital skills to this particular sector include freeing up time for the healthcare professional (through remote consultation/communication with patients and digital record keeping) as well as broader skills development and increased job satisfaction[44].

The adult social care sector in particular has low wages and morale but delivering high quality skills provision in this sector could contribute to improvements in retention for employers and prospects for local people. Indeed, the inclusion of Health and Care as a focus within the thinking around Centres of Excellence for education and training. At the heart of the sector is the Doncaster and Bassetlaw Teaching Hospital.

[43] UK Government, Made with Care Campaign, see: https://www.gov.uk/government/news/made-with-care-campaign-highlights-opportunities-for-careers-in-care

[44] Edge Foundation, Skills Shortages in the UK economy (2022), see: https://www.edge.co.uk/documents/330/DD0878_-_Skills_Shortages_Bulletin_11_DIGITAL.pdf

5. Conclusions

Having considered the spatial and specialisms opportunities within the economy, this study draws the following conclusions:

- Given the current prevalence of low household incomes and employment in low wage sectors in Doncaster, the 'economic mission' for the Industry Specialisms should be to generate more highly-productive economic activity in Doncaster, including the creation of high-value, highly-skilled employment opportunities. The specialisms have a role to play in supporting a regenerative and inclusive economy in Doncaster, both through their own activities and through supply chain and employee spend in the foundational economy. But their primary role within the Strategy should be to accelerate a shift in Doncaster's economic structure towards higher value activity, so that a greater proportion of Doncaster's economic and employment growth is driven by high value sustainable economic activity, rather than the more extractive growth, and prevalence of lower paid employment than the regional and national average, which has been experienced recently.
- This study recognises the varied role that specialisms can play in achieving inclusive and regenerative economic goals, and also the need to focus on existing strengths, aspirational opportunities and support for the foundational economy (the 'everyday' economy, providing goods and services that people and businesses call upon continually). For this reason, the proposal for specialisms on which the economic strategy should focus upon is split into those three categories; strength-based specialisms, aspirational specialisms and foundational specialisms.
- The 'specialisms' that should be considered as priorities, based on this research study, are as follows the conclusion that the following should be pursued:
    - Strength-based specialisms:
        - Advanced Engineering and Technology. This specialism is based upon demonstrable concentrations of relevant firms and employment across Doncaster. There are shared labour pools and end-users markets across the firms operating in this specialism. Key issues include talent development and labour market supply, creating a deeper understanding of the key markets being addressed and future opportunities, enhancing innovative capacity through developing links to key innovation assets both within and outside the borough and ensuring that the sites and premises offer facilitates growth. Inclusive and regenerative goals that align well with this specialism include the creation of sustainable skilled jobs, potential to develop cross-sectoral opportunities (e.g. with digital), moving towards and innovation-led economy, improving productivity and providing fulfilling careers for local people.
        - Mobility. This specialism builds on both the key connectivity strengths of Doncaster; the excellent transport infrastructure and the historic sectoral strength in rail. Many of these strengths are impossible for competing locations to recreate, meaning Doncaster has a competitive advantage. Challenges include intense competition for labour, concerns about the precarious nature of employment and levels of pay on offer, the increasing application of technology which will limit job opportunities in the future. Inclusive and regenerative goals that align well with this specialism include the provision of large numbers of (comparatively accessible) jobs (currently), potential to develop cross-sectoral opportunities (e.g. with digital), and the existence of a local cluster that could provide a test-bed for innovation in green technologies.
        - Advanced materials. This specialism is demonstrably concentrated in Doncaster. The existence of a small number of large businesses represents both a strength

and also a risk to the local economy. The challenge is to create the conditions which mean that Doncaster is increasingly a location of choice for firms in this sector and to encourage the growth of innovative SMEs in order to mitigate such risks. Challenges include recruitment and retention of staff, developing a deeper understanding of the strengths and capabilities of firms in the specialism, enhancing collaboration and innovation opportunities for local firms and creating sustainable links to relevant research and development institutions.

- Aspirational specialisms;
  - Creative and Digital (to include Culture). This is an *aspirational specialism*. It is not currently a demonstrable strength in Doncaster but represents an important growth opportunity in a number of ways. Cultural development is important to social cohesion, community and personal wellbeing and in attracting people to live, work in and visit Doncaster. Services provided by creative and digital firms have a broad economic application, particularly with respect to digital technologies as a platform for innovation, efficiency and productivity improvements. Linking digital firms with other specialisms to develop stronger internal markets is an important goal in pursuing the inclusive and regenerative goals. Challenges include accessing key markets, developing the talent pipeline and addressing labour market challenges around recruitment and retention, and building a physical environment which is attractive to creative, digital and cultural organisations and firms.

- Foundational specialisms;
  - Health and Care. This specialism important local services to the people and communities of the borough (and beyond). The cluster is the largest of all those specified in this study and has grown considerably in employment terms in recent years. The Covid-19 pandemic as well as wider pressures in the healthcare and social care system have driven some significant challenges for the sector, including recruitment and retention of staff, the precarious nature of employment and low pay, and enhancing accessibility to the major employment sites. The key opportunities within the context of the inclusive and regenerative economy goals include the requirement for large numbers of staff and the opportunity to directly influence the health and wellbeing of local people and communities.
  - Support and Professional Services. This is not a demonstrable strength at present, but has shown promising signs of growth and development over the last decade (though these have tailed off in the most recent three years to 2021). This specialism is part-foundational and part-tradable, which means it offers a balance of opportunity linked to both the growth of the local economy and also growth in the sub-regional and even national economy. The professional services element should be seen to provide the potential to develop opportunities that link to other specialisms, for example in the field of consultancy, technical research and development. Key challenges include developing the property and premises offer, particularly for smaller offices, regenerating locations across the City to improve attractiveness, and elevating the profile of local support and professional service providers to improve local supply chain opportunities. This specialism can contribute to inclusive and regenerative economic goals through building and deepening business-to-business trading relationships, providing job opportunities across a wide range of occupations (from entry level to professional) and enhancing ecosystems development across all specialisms.

- The analysis of specialisms has also identified a number of market drivers and opportunities which are important to the Doncaster economy, and the specialisms outlines above in particular. These include green technology, rail, future mobility and advanced materials. These offer innovation and growth opportunities to local businesses, not only within individual sectors, but across the economy. For example, addressing opportunities within future mobility requires a combination of new materials, fuels, technology, digital platforms and services. The structures which emanate from the economic strategy should recognise both sectoral specialisms and niche market opportunities for Doncaster. This point is returned to in the final concluding point, below.
- A key facet of the approach to integrating a specialisms-based approach to economic growth must be avoid bounding policies, activities and initiatives by tight definitions. There is a risk of being 'over-specialised' in the approach, which could lead to interesting and valuable opportunities being overlooked because they do not 'fit' the template. A balance between focus and flexibility must be sought.
- Doncaster needs an innovation-led growth model which is appropriate to local economic circumstances. The concept of 'innovation-led growth' needs to be adapted to recognise Doncaster's starting point which includes a low skills base, a relative lack of innovation assets and organisations within the borough, and a limited property offer which does not meet the needs of desk-based innovation businesses. It should also maximise Doncaster's strengths, including connectivity to surrounding areas; the mix of urban, rural and industrial locations; and the availability of significant amounts of development land in key opportunity sites. Innovation should be considered in its broadest sense, including innovation in the delivery of public services, where Doncaster is already progressing new ways of delivering education and skills to generate a radical shift in skills levels. This step change in education and skills is fundamental both to the more inclusive growth which Doncaster wishes to generate, and to enabling innovation-led growth in the Industry Specialisms.
- There may be challenges in aligning the specialisms' different spatial needs and accommodation requirements with Doncaster's economic geography and distributed settlement pattern. There are advantages in clustering similar businesses and activity together, to encourage collaboration, create a sense of community and develop a magnetising effect which draws in other businesses. However, clustering activity in specific locations presents challenges in ensuring Doncaster's communities are able to sustainably access the opportunities they provide, given poor public transport links across the borough. The accessibility and connectivity of clusters with regional research and innovation assets outside of the borough should also be considered.
- The Creative and Digital specialism (including culture) requires city / town centre locations and suitable office accommodation in attractive and vibrant locations. This also applies to the Support and Professional Services specialism. The Health and Care specialism will see employment concentrated where key health facilities are located, with care activity distributed across the borough in line with population patterns. Businesses in the Advanced Engineering and Technology, Mobility (including Rail) and Advanced Materials specialisms require modern high quality accommodation on larger out of town sites, which are more difficult for Doncaster's people to access in a sustainable way.
- Joint working with South Yorkshire partners can add value to innovation-led growth in Doncaster, as priority sectors are similar across the sub-region and other Local Authorities have adopted different approaches which could provide useful lessons. However, Doncaster should not be constrained in identifying external partners to accelerate innovation-led growth, and should identify the most appropriate expertise to draw upon to support innovation in each of the Industry Specialisms.
- There are a number of levers which the Council can use to support and accelerate innovation-led growth in Doncaster:

- Convening role: bringing together like-minded businesses to discuss shared issues / challenges and identify areas for shared innovation activity.
- Partnership role: engaging external innovation / R&D partners and connecting them with Doncaster businesses who have identified innovation support needs.
- Coordination role: bringing together services which support innovation-led growth (e.g. education and training providers) to ensure provision is aligned with future needs.
- Community engagement role: raising awareness of the employment opportunities arising through the specialisms / innovation-led growth, and encouraging local people to take them up through outreach work and support programmes.
- Place-making role: creating appropriate spaces and an attractive environment for investment; influencing development through the planning system (including acting to deter development which does not generate high-value, high-skilled jobs to ensure that land / space is retained for innovation-led growth).

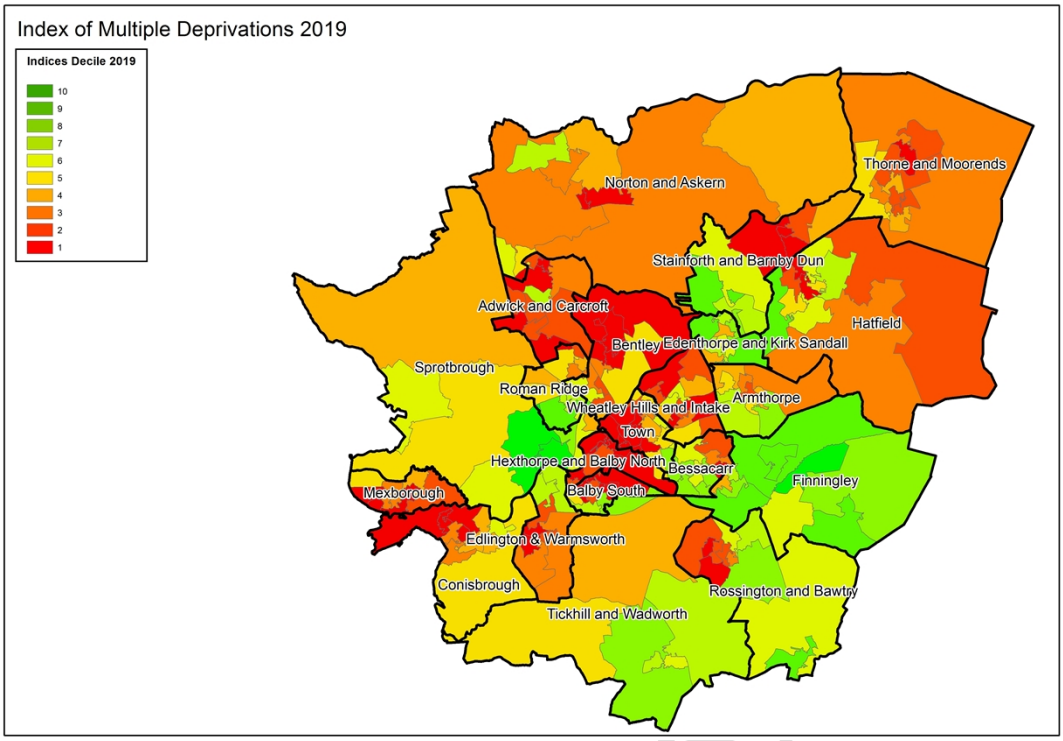
- The granting of city status provides an opportunity to enhance Doncaster's profile externally and create increased confidence locally. It also provides access to city-based networks which Doncaster could use to create new partnerships and collaborations.

- When it comes to articulating the strategy and developing structures, the objective of focusing on Industry Specialisms must be brought into line with existing ideas that flow from other strategies, primarily the Education and Skills Strategy 2030. Our recommendation for achieving this alignment is to adopt a model which combined sector specialisms, with niches drivers of opportunity, as outlined below. This provides for a focus on four 'sectors of opportunity', which all respond to four niche drivers that have been identified in this research study. This model simplifies the concept of Centres of Excellence and aligns them with sectors, but then aligns CofE activity to recognise, address and respond to the niche drivers (but not on an exclusive basis, as this would be too inflexible). This approach achieves the following objectives:
    - It ensures that the specialisms identified in this study are captured,
    - It identifies key niche opportunities that are also identified in this study
    - It maintains in large part the sectoral focus of the Centre of Excellence but redefines 'green tech' as a niche opportunity rather than a sector in its own right.
    - It reflects the need for flexibility in the delivery of the Centre of Excellence idea (built around the concept of Talent and Innovation Ecosystems) and cross-CofE working
    - It acknowledges the need to focus talent development and innovation support around the niche drivers that are of particular relevance to the Doncaster economy, but which may change over time.
    - It acknowledges the need to address niche opportunities through development across multiple sectors. For example, green tech presents opportunities for engineering, materials, professional services, digital and creative businesses, all aligned to technology and market development in the area of green technology.

6. Appendix

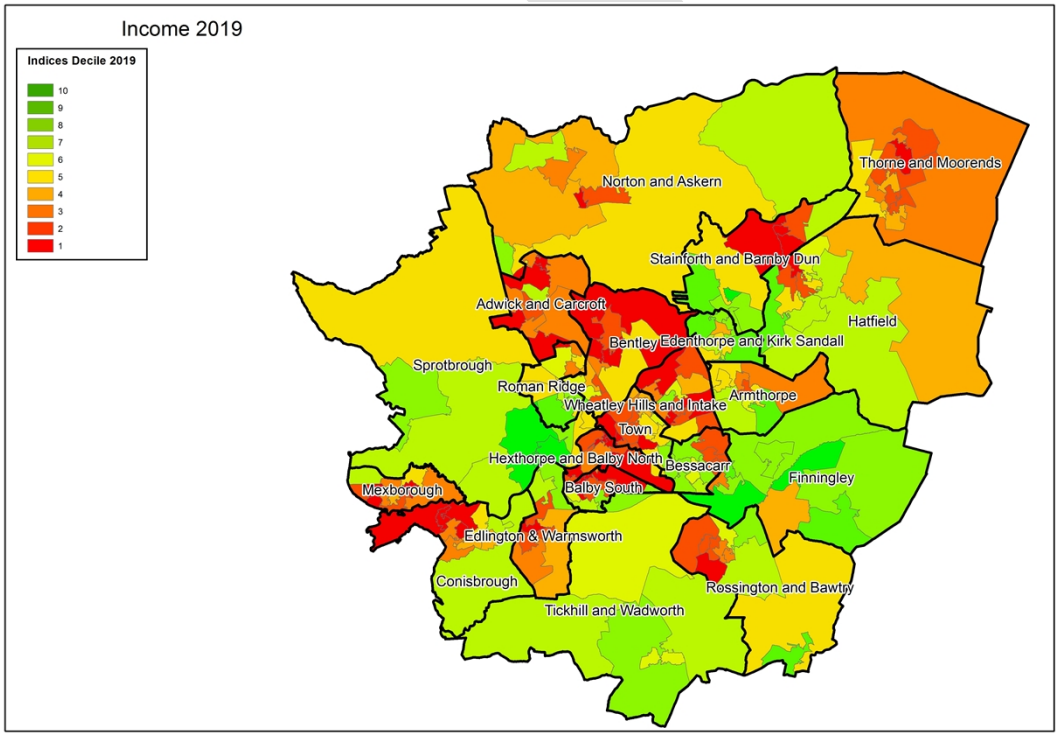
6.1 Appendix I - IMD Maps

Figure 29: IMD Deciles



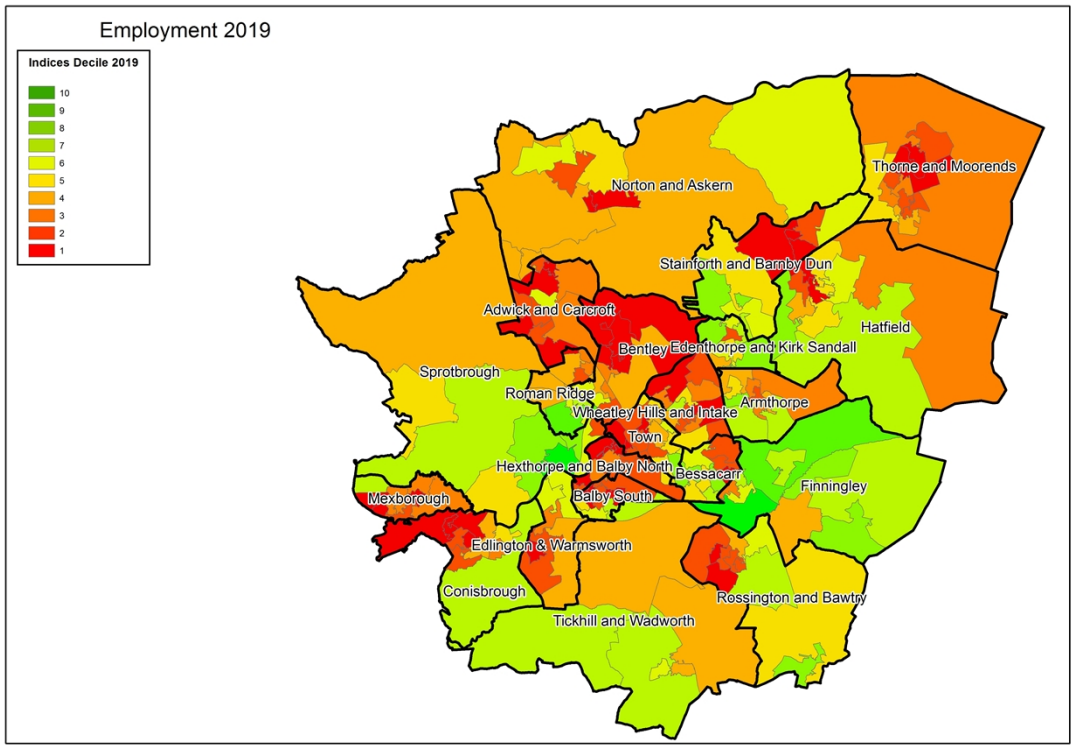
Source: HM Government, 2019 (via Doncaster Council)

Figure 30: IMD Deciles (Income)



Source: HM Government, 2019 (via Doncaster Council)

Figure 31: IMD Deciles (Employment)



Source: HM Government, 2019 (via Doncaster Council)

6.2 Appendix 2 – Specialism definitions

Table 12: Engineering & Technology

SIC 2007	SIC description
0910	Support activities for petroleum and natural gas extraction
0990	Support activities for other mining and quarrying
2221	Manufacture of plastic plates, sheets, tubes and profiles
2320	Manufacture of refractory products
2511	Manufacture of metal structures and parts of structures
2521	Manufacture of central heating radiators and boilers
2529	Manufacture of other tanks, reservoirs and containers of metal
2530	Manufacture of steam generators, except central heating hot water boilers
2540	Manufacture of weapons and ammunition
2562	Machining
2611	Manufacture of electronic components
2612	Manufacture of loaded electronic boards
2620	Manufacture of computers and peripheral equipment
2630	Manufacture of communication equipment
2640	Manufacture of consumer electronics
2651	Manufacture of instruments and appliances for measuring, testing and navigation
2660	Manufacture of irradiation, electromedical and electrotherapeutic equipment
2670	Manufacture of optical instruments and photographic equipment
2680	Manufacture of magnetic and optical media
2711	Manufacture of electric motors, generators and transformers
2712	Manufacture of electricity distribution and control apparatus
2720	Manufacture of batteries and accumulators
2731	Manufacture of fibre optic cables
2732	Manufacture of other electronic and electric wires and cables
2733	Manufacture of wiring devices
2740	Manufacture of electric lighting equipment
2751	Manufacture of electric domestic appliances
2790	Manufacture of other electrical equipment
2811	Manufacture of engines and turbines, except aircraft, vehicle and cycle engines
2812	Manufacture of fluid power equipment
2813	Manufacture of other pumps and compressors
2814	Manufacture of other taps and valves
2815	Manufacture of bearings, gears, gearing and driving elements
2822	Manufacture of lifting and handling equipment
2823	Manufacture of office machinery and equipment (except computers and peripheral equipment)
2824	Manufacture of power-driven hand tools
2825	Manufacture of non-domestic cooling and ventilation equipment
2829	Manufacture of other general-purpose machinery n.e.c.
2830	Manufacture of agricultural and forestry machinery
2841	Manufacture of metal forming machinery
2849	Manufacture of other machine tools
2891	Manufacture of machinery for metallurgy
2892	Manufacture of machinery for mining, quarrying and construction

SIC 2007	SIC description
2893	Manufacture of machinery for food, beverage and tobacco processing
2894	Manufacture of machinery for textile, apparel and leather production
2895	Manufacture of machinery for paper and paperboard production
2896	Manufacture of plastics and rubber machinery
2899	Manufacture of other special-purpose machinery n.e.c.
2910	Manufacture of motor vehicles
2920	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
2931	Manufacture of electrical and electronic equipment for motor vehicles
2932	Manufacture of other parts and accessories for motor vehicles
3011	Building of ships and floating structures
3012	Building of pleasure and sporting boats
3020	Manufacture of railway locomotives and rolling stock
3030	Manufacture of air and spacecraft and related machinery
3040	Manufacture of military fighting vehicles
3091	Manufacture of motorcycles
3092	Manufacture of bicycles and invalid carriages
3099	Manufacture of other transport equipment n.e.c.
3312	Repair of machinery
3313	Repair of electronic and optical equipment
3314	Repair of electrical equipment
3317	Repair and maintenance of transport equipment n.e.c.
3319	Repair of other equipment
3320	Installation of industrial machinery and equipment
3512	Transmission of electricity
4211	Construction of roads and motorways
4212	Construction of railways and underground railways
4313	Test drilling and boring
4614	Agents involved in the sale of machinery, industrial equipment, ships and aircraft
4651	Wholesale of computers, computer peripheral equipment and software
4652	Wholesale of electronic and telecommunications equipment and parts
4661	Wholesale of agricultural machinery, equipment and supplies
4662	Wholesale of machine tools
4663	Wholesale of mining, construction and civil engineering machinery
4666	Wholesale of other office machinery and equipment
4669	Wholesale of other machinery and equipment
4920	Freight rail transport
9511	Repair of computers and peripheral equipment
9512	Repair of communication equipment
9521	Repair of consumer electronics

Table 13: Rail

SIC	SIC description
4920	Freight rail transport
4212	Construction of railways and underground railways
4910	Passenger rail transport, interurban
3020	Manufacture of railway locomotives and rolling stock
4213	Construction of bridges and tunnels

Table 14: Plastics and Materials

SIC	SIC description
2211	Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres
2219	Manufacture of other rubber products
2221	Manufacture of plastic plates, sheets, tubes and profiles
2222	Manufacture of plastic packing goods
2223	Manufacture of builders ware of plastic
2229	Manufacture of other plastic products
2311	Manufacture of flat glass
2312	Shaping and processing of flat glass
2313	Manufacture of hollow glass
2314	Manufacture of glass fibres
2319	Manufacture and processing of other glass, including technical glassware
2320	Manufacture of refractory products
2441	Precious metals production
2442	Aluminium production
2443	Lead, zinc and tin production
2444	Copper production
2445	Other non-ferrous metal production
2451	Casting of iron
2452	Casting of steel
2453	Casting of light metals
2454	Casting of other non-ferrous metals
2593	Manufacture of wire products, chain and springs
4672	Wholesale of metals and metal ores

Figure 32: Mobility

SIC	SIC description
2822	Manufacture of lifting and handling equipment
2910	Manufacture of motor vehicles
2920	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers
3317	Repair and maintenance of transport equipment n.e.c.
4212	Construction of railways and underground railways
4520	Maintenance and repair of motor vehicles
4920	Freight rail transport
4941	Freight transport by road
5020	Sea and coastal freight water transport
5040	Inland freight water transport
5121	Freight air transport
5210	Warehousing and storage
5221	Service activities incidental to land transportation
5224	Cargo handling
5229	Other transportation support activities
7712	Renting and leasing of trucks

Figure 33: Digital & Creative

SIC	SIC description
2611	Manufacture of electronic components
2612	Manufacture of loaded electronic boards
2620	Manufacture of computers and peripheral equipment
2630	Manufacture of communication equipment
2640	Manufacture of consumer electronics
2680	Manufacture of magnetic and optical media
3212	Manufacture of jewellery and related articles
4651	Wholesale of computers, computer peripheral equipment and software
4652	Wholesale of electronic and telecommunications equipment and parts
5811	Book publishing
5812	Publishing of directories and mailing lists
5813	Publishing of newspapers
5814	Publishing of journals and periodicals
5819	Other publishing activities
5821	Publishing of computer games
5829	Other software publishing
5911	Motion picture, video and television programme production activities
5912	Motion picture, video and television programme post-production activities
5913	Motion picture, video and television programme distribution activities
5914	Motion picture projection activities
5920	Sound recording and music publishing activities
6010	Radio broadcasting
6020	Television programming and broadcasting activities
6110	Wired telecommunications activities

SIC	SIC description
6120	Wireless telecommunications activities
6130	Satellite telecommunications activities
6190	Other telecommunications activities
6201	Computer programming activities
6202	Computer consultancy activities
6203	Computer facilities management activities
6209	Other information technology and computer service activities
6311	Data processing, hosting and related activities
6312	Web portals
6391	News agency activities
6399	Other information service activities n.e.c.
7021	Public relations and communication activities
7111	Architectural activities
7311	Advertising agencies
7312	Media representation
7410	Specialised design activities
7420	Photographic activities
7430	Translation and interpretation activities
8552	Cultural education
9001	Performing arts
9002	Support activities to performing arts
9003	Artistic creation
9004	Operation of arts facilities
9101	Library and archive activities
9102	Museum activities
9511	Repair of computers and peripheral equipment
9512	Repair of communication equipment

Table 15: Support Services

SIC	SIC description
6910	Legal activities
6920	Accounting, bookkeeping and auditing activities; tax consultancy
7021	Public relations and communication activities
7022	Business and other management consultancy activities
7112	Engineering activities and related technical consultancy
7120	Technical testing and analysis
7311	Advertising agencies
7312	Media representation
7320	Market research and public opinion polling
7490	Other professional, scientific and technical activities n.e.c.
7731	Renting and leasing of agricultural machinery and equipment
7732	Renting and leasing of construction and civil engineering machinery and equipment
7733	Renting and leasing of office machinery and equipment (including computers)
7734	Renting and leasing of water transport equipment
7735	Renting and leasing of air transport equipment

SIC	SIC description
7739	Renting and leasing of other machinery, equipment and tangible goods n.e.c.
7740	Leasing of intellectual property and similar products, except copyrighted works
7810	Activities of employment placement agencies
7820	Temporary employment agency activities
7830	Other human resources provision
8110	Combined facilities support activities
8122	Other building and industrial cleaning activities
8211	Combined office administrative service activities
8219	Photocopying, document preparation and other specialised office support activities
8299	Other business support service activities n.e.c.
9411	Activities of business and employers membership organisations
9412	Activities of professional membership organisations
9420	Activities of trade unions

Table 16: Knowledge Intensive Business Services (KIBS)

SIC	SIC description
6530	Pension funding
8541	Post-secondary non-tertiary education
7010	Activities of head offices
6810	Buying and selling of own real estate
7120	Technical testing and analysis
6910	Legal activities
6492	Other credit granting
7112	Engineering activities and related technical consultancy
6832	Management of real estate on a fee or contract basis
7022	Business and other management consultancy activities
6419	Other monetary intermediation
6920	Accounting, bookkeeping and auditing activities; tax consultancy
7111	Architectural activities
6202	Computer consultancy activities
7810	Activities of employment placement agencies
6420	Activities of holding companies
6499	Other financial service activities, except insurance and pension funding, n.e.c.
6201	Computer programming activities
5829	Other software publishing
6430	Trusts, funds and similar financial entities
6311	Data processing, hosting and related activities
7320	Market research and public opinion polling
7312	Media representation
7311	Advertising agencies
6511	Life insurance
5821	Publishing of computer games
6411	Central banking
6491	Financial leasing
6512	Non-life insurance
6520	Reinsurance
8542	Tertiary education

Table 17: Education and Knowledge

SIC	SIC description
8541	Post-secondary non-tertiary education
8559	Other education n.e.c.
8560	Educational support activities
9101	Library and archive activities
7211	Research and experimental development on biotechnology
7219	Other research and experimental development on natural sciences and engineering
7220	Research and experimental development on social sciences and humanities
8542	Tertiary education

Table 18: Health and Care

SIC	SIC description
8720	Residential care activities for learning disabilities, mental health and substance abuse
8622	Specialist medical practice activities
4773	Dispensing chemist in specialised stores
8610	Hospital activities
8790	Other residential care activities
8730	Residential care activities for the elderly and disabled
8621	General medical practice activities
8623	Dental practice activities
8710	Residential nursing care activities
8690	Other human health activities