York and North Yorkshire Combined Authority

York and North Yorkshire's Local Growth Plan Consultation Draft

Economy worth £23bn in 2022
Home to 834,409 people
Covering ~6% of England
World-leading research universities
Visitor economy worth £6bn

Introduction

What is the Local Growth Plan?

All Combined Authorities across England have been tasked by central government with a statutory requirement to develop Local Growth Plans. The role of the Local Growth Plan is to unlock national growth by addressing regional inequalities in productivity and provide a framework that helps inform priorities for public and private investment and interventions to drive growth.

York and North Yorkshire's Local Growth Plan will set out a 10-year strategy to achieve economic growth which benefits our businesses, people and environment. Although it is a locally owned document, the development of the Growth Plan has been an iterative process with government, done at pace to support the National Industrial Strategy and other, relevant national strategies and policy levers. The close-working relationship, between local and central government, has enabled identification for collaboration and shared outcomes.

As part of the process of forming a Local Growth Plan, Combined Authorities were required to identify growth sectors, where they have particular USPs or opportunities to drive productivity. Based on our strategic strengths and asset base, quantitative data and research and engagement with businesses, the following sectors have been identified for York and North Yorkshire:

- Food and Farming
- Engineering Biology and Life Sciences
- Clean Energy
- Rail Innovation and Security
- Creative Industries and Heritage

Although the focus of the Growth Plan will primarily be on the growth sectors, where we see York and North Yorkshire as having a competitive advantage, we recognise there are other local strengths and assets that could be maximised further to unlock growth, including:

- Natural Capital
- Visitor Economy
- Manufacturing
- SMEs and Independent Businesses

The above priorities are not an exhaustive list of all the core sectors that play a role within our local economy (as shown on the graph on the next page). There are other sectors that are fundamental to any area being successful and thriving, such as retail, health and social care, education, professional services, construction etc. These are sometimes referred to as the "everyday economy". We would always support and encourage growth within these sectors, particularly through skills development.

However, the main role of this plan is to drive opportunities within our growth sectors. Consequently, this consultation is seeking views on the identified sectors and looking at how the public and private sector can work together to drive change.

York and North Yorkshire's Consultation Draft sets out the following:

Competitive Advantage Sectors

Maximising York and North Yorkshire's growth sectors provides an opportunity to accelerate sustainable economic growth and increase productivity. This section provides further detail on our identified growth sectors – why they're been chosen, our ambition for the sector and the key focus areas.

Local Assets & Strengths

Strengthening the local specialisms of York and North Yorkshire's economy, alongside growth, is essential to the local economic health and prosperity of the region.

Spatial Priorities

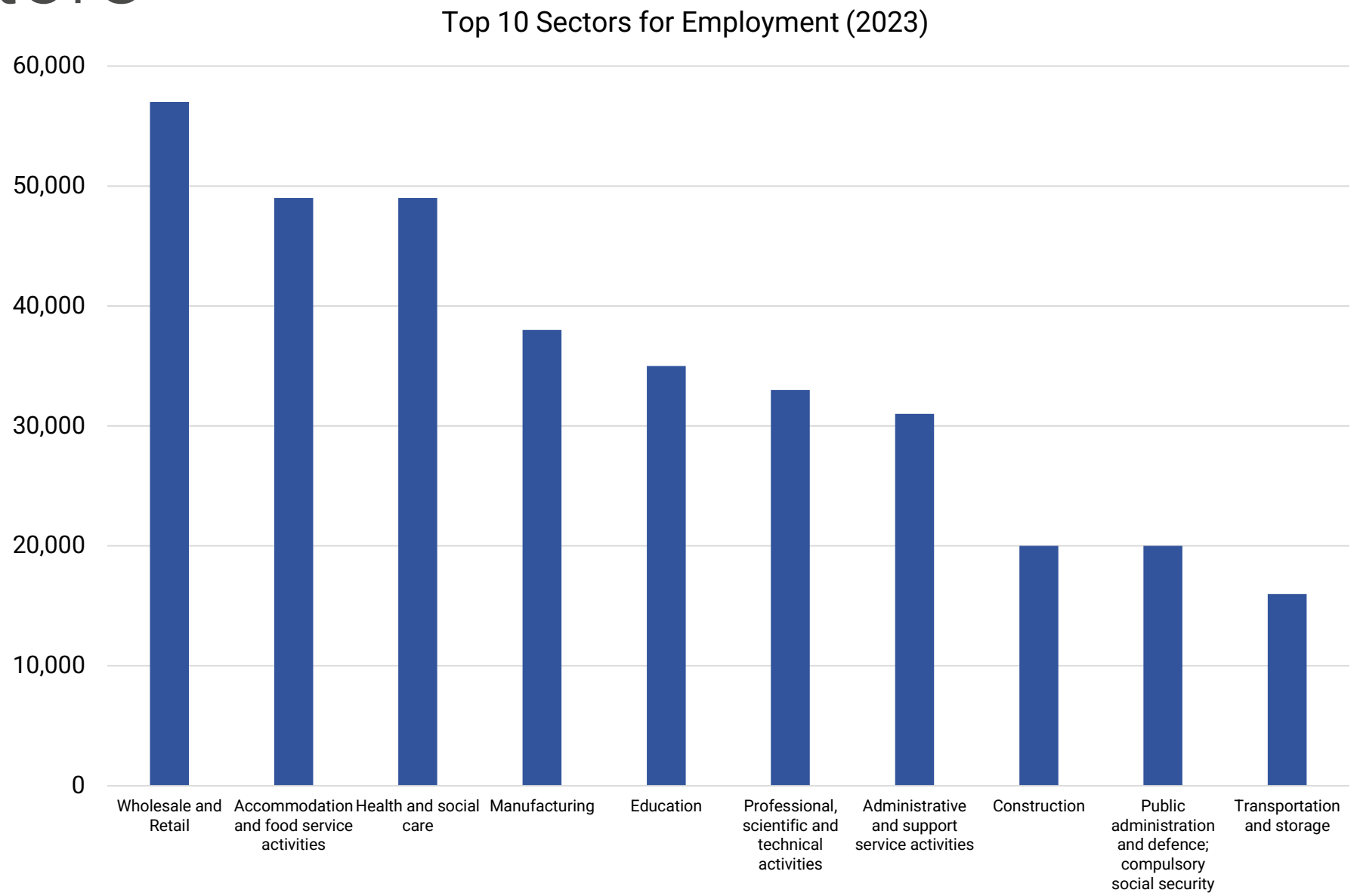
Recognising York and North Yorkshire's geographic diversity, a place-based approach will be taken to drive economic opportunities.

Strengthening the Foundations

Investment in digital connectivity, housing, transport, innovation, commercial development and skills will enable York and North Yorkshire to achieve its bold ambitions.

Core Sectors

We support and encourage growth across all our sectors, particularly through skills development. But the primary focus of the Growth Plan is on our competitive advantage sectors



Source: Business Register and Employment Survey, Offices for National Statistics

A Growth Plan Led by Innovation - *York and North Yorkshire is ready to build on its history of innovation and accept the challenge*

Analysis by The Rural Coalition reveals that bridging the rural-urban productivity gap in the UK, bringing it in line with Scandinavian countries, could contribute an additional £87 billion in GVA to the national economy. This would generate an estimated £19 billion in tax revenue, sufficient to fund 514,000 NHS nurses or 472,000 teachers. As a region characterized by a unique urban-rural mix, York and North Yorkshire Combined Authority is determined to tackle these challenges by building on the strengths of its urban centres and enhancing the economic potential of its rural areas, thereby positioning the region as a major contributor to the UK's journey achieving the highest sustained growth in the G7.

York and North Yorkshire already has a legacy of innovation that could be maximised further to reach those ambitions.

With decades of experience feeding the country, we will transform our food systems and support future resilience and national food security

York and North Yorkshire has an abundance of farming heritage, with some field systems dating back to at least the Bronze Age. The richness of the region's lowland farmland contributed to both the wealth of local landowners, and the funds and willingness to experiment in new techniques and technologies. For example, Leetham and Sons' flour mill was at the forefront of milling technology in Britain. Over the course of 70 years, the firm developed the Hungate works from a small operation using steam-powered millstones to a much larger enterprise that replaced older milling techniques with innovative grinding machinery in the form of automatic steel rollers. In recognition of their achievements and expertise, Sidney Leetham, a partner in the company, was made president of the Incorporated National Association of British and Irish Millers in 1900.

This pioneering focus continues with farmers exploring new methods, such as regenerative agriculture and Controlled Environment Agriculture, to reduce costs and build resilience and generate new income streams.

Food and drink manufacturing became most prominent in the Victorian era, with the likes of Rowntrees founded in York, which is now one of the world's largest confectionery factories under the ownership and investment of Nestle. Today, Nestle's global R&D site is still based within York with around 130 scientists, alongside a substantial manufacturing base that includes highly skilled people, driving forward innovation in products and processes.

In 2021, the Nestlé Product Technology, in collaboration with packaging experts at the Swiss-based Institute of Packaging Sciences, worked to innovate the packaging design of confectionery brand Smarties. Smarties became the first global confectionery brand to move to sustainably sourced and recyclable paper packaging.

McCain Foods, a pioneer in frozen food, created the first ever frozen chip and opened the first of its many UK French Fry production facilities in Scarborough in 1968.

The business base, supply chain and geology have made York and North Yorkshire the natural home to strong academic and innovation assets, including Agritech Centres within the University of York, Askham Bryan, a land-based college and Fera, to name a few.

The University of York's Centre for Novel Agricultural Products has recently been selected along with the University of Cambridge to represent the UK as one of only six global C-SPIRIT (Centre for Sustainable Plant Innovation and Resilience through International Teamwork) research centres funded by $82 million from the United States National Science Foundation. The University of York's focus is the global project looking at addressing urgent challenges such as crop resistance and providing more sustainable solutions for global agricultural challenges.

As the heart of UK rail, we will pioneer digital transformation and innovation to protect and secure transport connectivity into the future

The railway industry has been a key cog for the region, dating back to the 1840s, with York the home of George Hudson (commonly known as "The Railway King"), who played a significant role in connecting London to Edinburgh by rail. Outside of London, no UK city can match York as a major centre of railway operations and administration.

It was York which constructed some of the world's earliest electric trains. Today, it's importance remains, demonstrated by Network Rail's choice to locate their Railway Operation Centre in York over any other city. There is also a strong ecosystem with pioneering specialisms in digital, signalling, railway operations and automation.

York is a leading centre for autonomous research, hosting the University of York's Institute for Safe Autonomy. This world-class research facility is pioneering the mechanisms of deploying autonomous systems safely and ethically.

York is also home to the National Railway Museum, the largest museum of its type in Britain. The museum is more than a popular tourist attraction, with activity such as the WonderLab, which was established to foster key STEM skills.

Powering the past and future with bold ambitions to reach carbon negative, led by revolutionising our energy supply

In the 1980s, Selby was at the forefront of mining technology with the opening of a massive coalpit, often described as a “superpit”, as the largest and most modern in Europe. The scale of the mine is evident in its production – in the 1980s, productivity was 5 times the national average and, at one point, the mine was responsible for producing 10 million tonnes of coal.

To the South-West of Selby was Kellingley Colliery, which primarily supplied to Drax power station in Selby, and was one of the last deep mines in the UK.

York and North Yorkshire’s appetite to play a role in energy remains, supporting government’s ambitions to make the UK an “Energy Superpower” and increase energy independence. For example, opportunities are currently being explored near Pickering around the potential of geothermal power through both existing, redundant gas wells near the town as well as new boreholes.

York and North Yorkshire is responsible for powering the nation, with Drax Power Station powering most of London. Drax is also a leader in the production of electricity from sustainable biomass. BECCS, Bioenergy with carbon capture and storage, is an innovative technology developed to permanently remove carbon dioxide from the atmosphere. It provides negative emissions, as well as stable, renewable electricity from sustainable biomass and is seen as critical to achieving net zero targets.

The universities in the region have a key role to play in supporting a transition to clean energy. A project led by the University of York’s Biorenewable Development Centre has become the first in the UK to successfully produce hydrogen at scale through a biological process, whilst also capturing the carbon dioxide released to reduce atmospheric pollution. In a landmark achievement for the UK’s green energy sector, researchers are now looking to expand the potential of the new technology to support the UK's net zero ambitions. To produce ‘clean hydrogen’, experts have been investigating how to produce the quantities of gas needed whilst also capturing the carbon dioxide.

From distinct heritage assets to immersive and digital-led creative experiences

York and North Yorkshire is home to rich cultural heritage, from Viking and Roman to castles, abbeys, stately homes, museums, libraries, galleries and collections, the list goes on. But these assets aren’t just about a pleasant backdrop, they are part of forward-thinking, creative innovation opportunities.

Assets such as York Minster are capitalising on their global reputation and heritage expertise by establishing the Centre of Excellence for Heritage Craft Skills Technology Hub. This is set to become a world class campus facility for research, innovation, education and training in ancient craft skills, combining and continuing the craft of stonemasonry with cutting-edge technology. It will preserve ancient craft skills for future generations, as well as being a shining example of best practice in managing complex heritage estates. Not only will it support other heritage institutions in our region and the rest of the UK, but its work extends around the world.

Added to this is the R&D facilities and capabilities of two York universities, and the growing number of businesses in York and North Yorkshire who are pioneering the use of digital technologies to innovate in heritage research, policy, and practice.

York is also establishing itself as a global player in the creative industries and digital media. This creative momentum is underpinned by York's UNESCO City of Media Arts status, awarded in 2014, one of the first 26 cities worldwide, and still the only one in the UK, recognized for excellence in film, TV, gaming and immersive technology.

Innovating for the greater good with leading health and wellbeing research and international businesses based here

The Retreat, based in York, revolutionised approaches to mental health, building on Quaker principles of compassion and respect. This radical approach began a series of reforms and greater understanding in mental health in the 19th century.

Charles Booth in London and Seebohm Rowntree in York conducted research into the causes of poverty. Rowntree conducted research in York between 1899-1901, concluding that 30% of people in York lived in poverty due to their low wages and that the main causes of poverty were illness and unemployment.

The research by Booth and Rowntree completely altered public opinion around the causes of poverty. Seebohm isn't the only pioneering Rowntree – Joseph Rowntree led housing innovation, particularly around the quality of homes. The first council houses were built in Tang Hall (in York) for homes for heroes.

York was also the birthplace of John Snow, a leader in early germ theory, due to his work in tracing the source of a cholera outbreak in London's Soho.

York and North Yorkshire's contributions to health and medicine are not solely within the past. Labcorp Early Development Laboratories has been in Harrogate for 50 years as a Contract Research Organisation and the expertise in North Yorkshire has supported the development of all 50 current top selling prescription drugs in the world.

The University of York has been ranked in the Top 12 nationally for Biological Sciences and Chemistry and both universities conduct important research in this area, with York St John operating a Health & Wellbeing research group, for example, and York University's Health Science research income exceeding £8m / year.

City region Rural powerhouse

Summary of the Growth Plan

York and North Yorkshire Combined Authority

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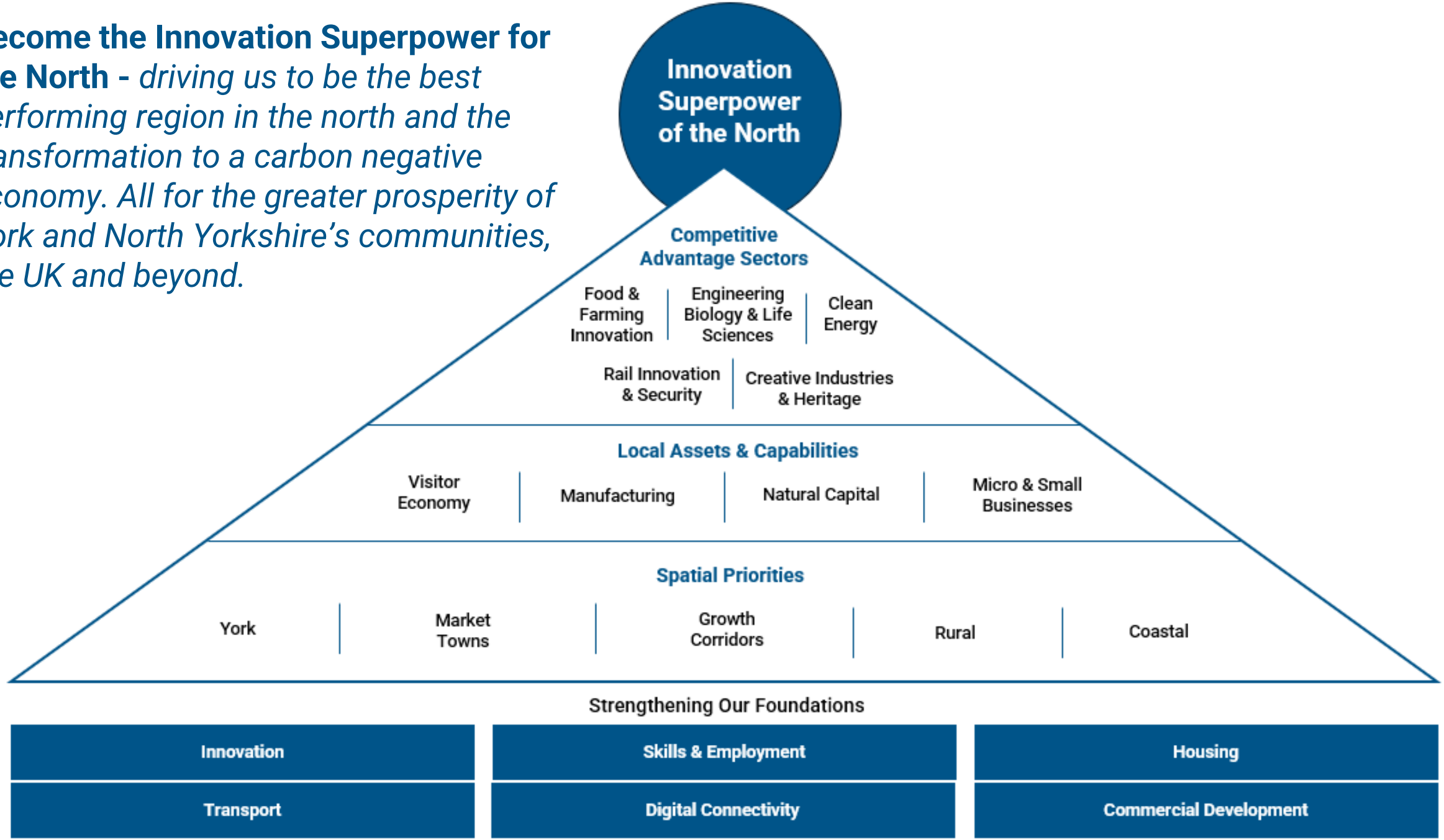
Become the Innovation Superpower for the North - *driving us to be the best performing region in the north and the transformation to a carbon negative economy. All for the greater prosperity of York and North Yorkshire's communities, the UK and beyond.*



City region Rural powerhouse

York & North Yorkshire's Baseline

York and North Yorkshire Combined Authority

While the region has a diverse economy with a number of growth areas, there are challenges around productivity and the pace of growth, which lags the national.

GVA

In 2022, the York and North Yorkshire economy was worth £23bn. Although this performance may be low compared to other areas (mostly skewered by London and large urban centres), this is stronger or at least in line with other largely rural geographies.

GVA performance has differed widely across York and North Yorkshire. York's GVA growth has been influenced by economic shocks with a substantial impact from the 2008 financial crash. Despite some recovery, its GVA growth during the 2010s failed to return to its earlier trajectory and was further disrupted by the significant economic challenges posed by the COVID-19 pandemic.

North Yorkshire exhibited more stable growth patterns and a stronger post-pandemic recovery. North Yorkshire demonstrated consistent growth from £7.4 billion in 1998 to £18.1 billion in 2022, representing an impressive 145% increase over the period. It's post-2008 recovery was steadier than York's, with moderate but sustained growth through the 2010s.

However, England's GVA growth was consistently higher over the period at a 153% increase between 1998 to 2022.

Productivity

York and North Yorkshire's GVA per hour worked in 2022 was 7% below the national average but above comparator regions like the North-East, North-West and Yorkshire and the Humber.

York's productivity performance has historically been stronger than North Yorkshire. In 2022, York's GVA per hour worked (£39.3) positioned it as one of the most productive areas in the region, comparable to Manchester and ahead of Leeds and Sheffield.

Although lower, North Yorkshire (£36.8) exceeded regional averages for Yorkshire and the Humber (£34.8) and the North-East (£34.0), reflecting strong rural productivity.

Both York and North Yorkshire outperform nearby areas like Tees Valley and Durham and Barnsley, Doncaster and Rotherham, with York nearing the national average (£40.3). This highlights York as a regional leader in economic output, complemented by North Yorkshire's robust rural economy, presenting opportunities for targeted investment to further enhance productivity.

Annual Earnings

All regions show steady growth in median annual earnings over the period of 2008 to 2024, with an acceleration post-2020, likely reflecting inflationary pressures, wage adjustments, and economic recovery from the COVID-19 pandemic. York consistently outperforms North Yorkshire and the broader Yorkshire and The Humber region, reflecting its higher-wage urban economy and stronger productivity. North Yorkshire maintains a steady upward trajectory, remaining above the Yorkshire and The Humber average but below the England median.

The largest gap with England is for the highest earners within York and North Yorkshire. The 10% of lowest paid earners in York and North Yorkshire earn up to £21,417, whilst for England it is £22,762. The gap widens as earnings increase, with a difference of approximately £2,000 above the 60th percentile between York and North Yorkshire and the national average. This indicates that while the poorest 50% of earners in York and North Yorkshire are comparable to the national average, higher earners in the region are not as well off as their counterparts across England.

There has been a steady increase in percentage of those living below the living wage from 2022 to 2024, with figures at 12% in York, 20% in North Yorkshire compared to 16% of those in England.

North Yorkshire residents who work outside the region earn more than those who work within North Yorkshire, suggesting lower-wage opportunities within the patch. Comparatively within York, the opposite trend materialises. Those who work in York earn comparatively more than those who live in York. This may indicate that those who live in York have lower spending power than those who solely work there. This is also likely a sign that those who live in North Yorkshire often commute into York for work.

Generally, for York and North Yorkshire, those who live in the area earn more than those who work there.

Demographics

834,409 people live in York and North Yorkshire, with 206,780 in York and 627,629 in North Yorkshire. York has a significantly larger share of young adults (18.6%) compared to North Yorkshire (9.5%) and England (12%), driven by its large student population. England has a higher proportion of working-age individuals (19.3%), followed by York (18.9%), with North Yorkshire at (16.1%). North Yorkshire has the

highest proportion of older residents (13%), well above England (10.4%) and York (3.3%), highlighting its ageing population.

York sees a significant net inflow of individuals aged 15-19, reflecting the influx of students likely attending its universities. However, there is a substantial outflow in 20–34-year-olds, suggesting graduates and young professionals are moving away to opportunities elsewhere.

North Yorkshire experiences a steady net inflow across most age groups, especially in 35-49 and 50-64 year olds, indicating its appeal to middle age professionals and future retirees seeking a rural lifestyle, and possible the capability to remote work.

The ageing population combined with a decline in young people poses challenges for the availability of labour, meaning growth in a York and North Yorkshire context is not solely about job creation.

Deprivation

Although York and North Yorkshire has lower levels of deprivation compared to other areas, partly northern counterparts, prosperity in the region is a mixed picture. There are isolated pockets and a large concentration of deprivation along the coast.

The Index of Multiple Deprivation (IMD) is the official measure of relative deprivation for small areas in England, combining data across seven weighted domains, including income, employment, education, health, crime, housing, and the living environment, to rank areas from the most to the least deprived.

York and North Yorkshire rank among the least deprived areas in England according to the Index of Multiple Deprivation 2019. York is positioned 143rd and North Yorkshire 127th out of 151 Upper Tier Local Authorities, indicating the relatively low levels of deprivation compared to other areas across England.

Where York and North Yorkshire's performance is weakest is linked to education and housing.

Skills Attainment

York and North Yorkshire has a high proportion of residents with Level 4 qualifications or above, reflecting higher educational attainment. Over 40% of residents in the region have Level 4+, slightly above the national average. The percentage of residents with no qualifications in York and North Yorkshire is below the national average.

The region has a slightly higher proportion of individuals with apprenticeships compared to England, whilst individuals with Level 2 and 3 qualifications is broadly similar to national levels.

York and North Yorkshire may have a strong base of grade 4 attainment, but there are lower levels of entry into further and higher education in some locations.

Unemployment

The unemployment rate (and claimant rate) in York and North Yorkshire highlights strong performance, although there is variation across the region. Unemployment is nearly 2% below national levels. Greater levels of employment deprivation are experienced in Scarborough, to the North-East of York, close to the centres of Selby, Skipton and Ripon.

However, slightly lower economic activity rates and a higher percentage of people not in education, employment or training (NEETs) compared to the national average suggest areas for targeted intervention are needed to boost workforce participation and youth engagement.

The age groups with the lowest levels of employment in York and North Yorkshire are 16-19 year olds (35%) and 50-64 year olds (74%). This may indicate ongoing education and early retirement.

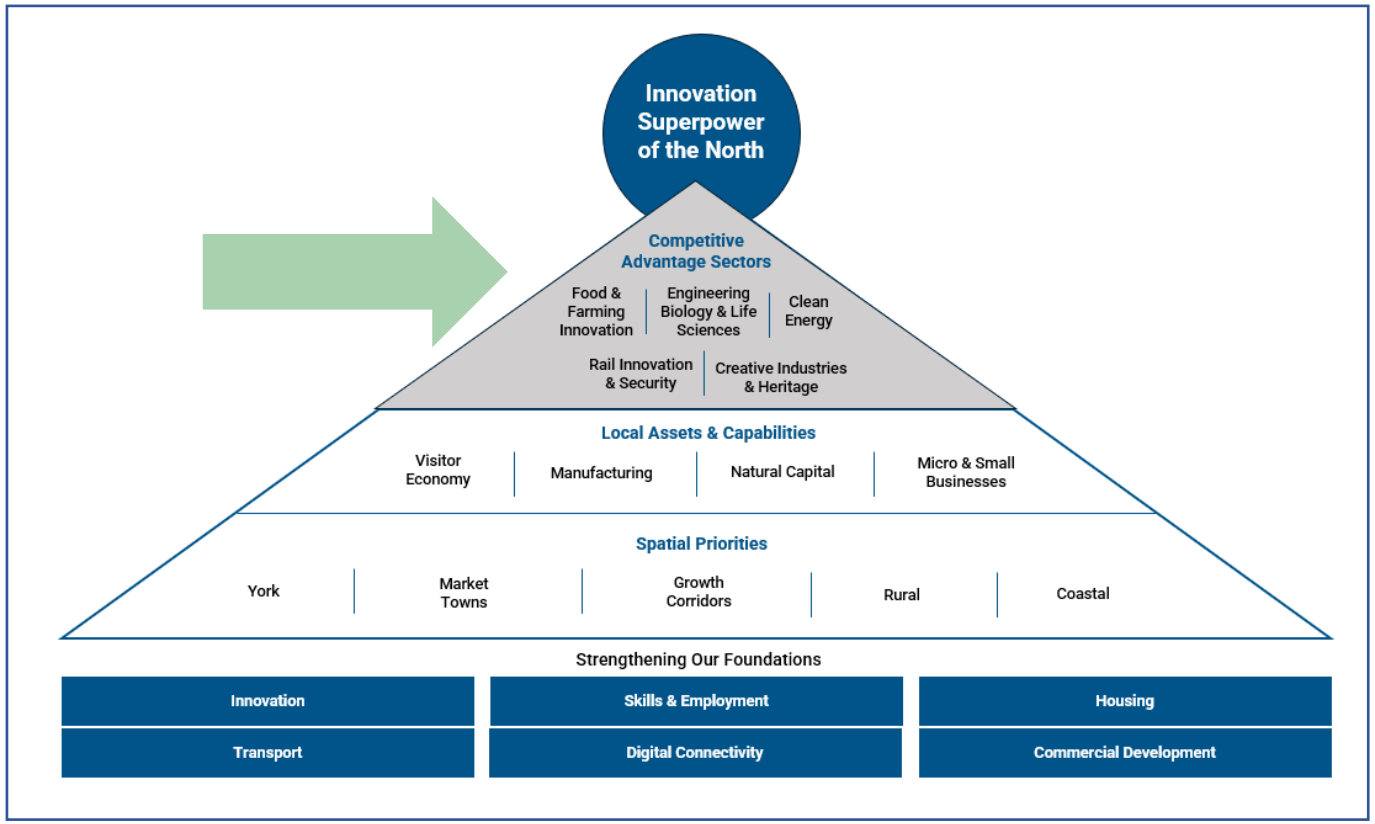
Housing

The 2021 Census defined as deprived in the housing dimension if the household's accommodation was either overcrowded, in a shared dwelling, or had no central heating. Housing deprivation is concentrated in urban areas, where a higher number of households are affected. Surrounding suburban areas generally experience lower levels of deprivation. Some rural areas in North Yorkshire, while generally better off, contain concentrated pockets of housing deprivation. Coastal communities on the East Coast experience higher levels of housing deprivation compared to other rural parts of North Yorkshire, reflecting specific challenges in these areas.

Competitive Advantage Sectors

Competitive Advantage Sectors

The Competitive Advantage Sectors are the sector priorities where York and North Yorkshire is best positioned to accelerate economic growth and productivity at a local and national level. In each of these sectors, York and North Yorkshire has a USP, particularly linked to our innovation, academic and R&D assets, alongside business clusters and anchor organisations. These sectors aren't always the largest employers within the region, but they present an opportunity to unlock growth. These sectors have been identified and refined via quantitative, desk-based research and engagement with a range of stakeholders, both public and private sector.



Food & Farming Innovation

The proportion of agriculture businesses based here is 4 times the level in England

Food and drink production is the largest manufacturing subsector in terms of economic value

Strong “Made in Yorkshire” brand for the food industry

Global names are based here – Nestle, McCains, Heineken and Taylors of Harrogate

Significant asset base of innovation, skills and R&D – UK Agritech Centres, FERA, Agricultural Colleges

Recognised by the Department of Business and Trade as a High Potential Opportunity for Controlled Environment Agriculture

61% of the York and North Yorkshire region is agricultural land

Food & Farming Innovation

Ambition: Increase sustainable productivity and innovation within Food & Farming to support national efforts to strengthen food security.

Key Focus Areas:

- Increase the **economic & environmental sustainability of farming** through innovation in farm practices, such as regenerative agriculture
- Increase the productivity of **food & drink manufacturing** through technology and digital improvements
- Increase productivity and resilience through **Controlled Environment Agriculture and** explore opportunities for further carbon capture linked to this sector

Outcomes

- Increase the no. of farms utilising regenerative agriculture practices
- Reduce the level of emissions produced through farming
- Increase the use of technology within the sector
- Increase the no. of Controlled Environment Agriculture businesses and those employed in the sector
- Increase the productivity of the food and farming sector
- Increase food security

York and North Yorkshire has significant and unique assets across the whole food ecosystem, making it a perfect trailblazer to lead on the food security agenda. The CA will work with York and North Yorkshire's Food and Farming cluster, including its research and development and academic assets, to increase sustainable productivity and support national ambitions for food security through innovation in food production, technological improvements, increased trade and export, and skills and training.

Economically & Environmentally Sustainable Farming

Now more than ever, transformation of the UK's food systems is needed. Recent supply chain shocks caused by the Ukraine/Russia war, ever-increasing disruptions caused by climate change (e.g. greater flooding) and the rise in food prices all threaten food security. Change needs to take place. But it's not all doom and gloom – there are opportunities for the food and farming sector to rise to the occasion, especially as localness becomes more and more important, both for resilience and for consumers.

Covering a variety of agriculture and aquaculture, York and North Yorkshire is primed to be the testbed for transformation within farming and to drive this change.

Regenerative agriculture could provide the change that is needed. As noted in a joint report between McCains and DEMOS, "while there is no one definition of regenerative farming, it most commonly refers to methods that minimise soil disruption, reduce reliance on synthetic inputs, and expand use of non-synthetic inputs (like plants, livestock and non-synthetic fertilisers) to rehabilitate natural ecosystems."

Often regenerative agriculture methods are associated with environmental benefits, including soil health, reduced emissions, higher biodiversity etc, but it can also support economic resilience. Some of the research is mixed around outcomes, but there is evidence that suggests possible increases in long-term yields and increases in long-term profitability (partly linked to a decrease in inputs).

Addressing environmental and economic sustainability in farms is part of the solution for food security. Without action, climate change, soil degradation and biodiversity loss will only exacerbate the issue. Focusing on regenerative agriculture and more sustainable and technology driven practices is a step in the right direction to strengthen the UK's food security.

Growth Constraints

- **Financial concerns** – investment is often a significant risk for farms, particularly as certain regenerative agriculture practices can risk yield reductions in the short-term. Limited business skills and cashflow (e.g. business plans) also hinder some farms from accessing different financial support. A balanced approach is needed. Farmers are also "price-takers", operating on a global market, and unable to influence the price of their product. With rising input costs, which are not being matched by the prices paid to farmers, profit margins are being squeezed.

- **Competing land-use demands** – pressures on land from food and energy security, alongside need for housing and employment land. Lack of a framework for how land should be best used leading to competition between renewable energy and farming which reduces willingness of farms to invest. Also, planning system is viewed as a blocker on farms diversifying and investing in development.

- **Lack of standardised methodology** – due to a lack of standardisation, farmers may struggle to set an accurate baseline around their current emissions and be unable to track accurate progress around reducing this. Different baselining methodologies and calculators used by retailers and supply chain to monitor sustainability of farms. Similarly, regenerative agriculture is not well-defined, and people have different understandings of this.

- **Environmental threats / climate change** – farmers are under greater pressure due to challenge and variable weather patterns, e.g. limitations caused by wet planting times.

- **Distrust towards the public sector** – the policy landscape kept changing after Brexit and many farmers likely found it difficult to keep track and have grown weary of government support. Many could be missing out on support opportunities and have less appetite for investment due to policy changes (e.g. inheritance tax). Need for more joined-up/one-stop shop interface for government agencies (DEFRA, RPA, EA, Farm Resilience Fund advisors) to interact with farm businesses.
- **Availability of skills labour** – implementing new equipment and technology changes requires the right skills, but many small family farms struggle to access this. Greater collaboration between universities and businesses is needed.

Food & Drink Manufacturing

York and North Yorkshire has a long history linked to food and drink manufacturing, tracing back to the Victorian era. The sector continues to be well-established with many global brands making their home here, including: McCains, Heineken and Taylors of Harrogate. There are food manufacturing clusters at Leeming Bar Industrial Estate and in Malton. Tadcaster has major breweries, Samuel Smiths, Heineken-owned John Smiths and Molson Coors. Masham is also home to two nationally renowned breweries, Theakston's and Black Sheep.

Other businesses include: Cooplands, Seagrown, Quorn, Heck! Foods, Masons Gin, Wensleydale Cheese – to name a few. The list goes on! Alongside these larger businesses, the smaller food and drink producers also play a significant role within York and North Yorkshire with 61% of businesses classified as micro (0 to 9 employees) and 20% considered small (10 to 49 employees).

Locally and nationally, food and drink is the largest manufacturing subsector in terms of economic value. However, historically, the sector has not been recognised by Government as a strategic advanced manufacturing sector, which has meant limited funding and support has been geared towards food and drink. For example, a Food Security report from the Policy Exchange highlighted: "Government contributed 0.3 per cent (£3m) to [food and drink] R&D Spending, whilst the automotive and aerospace sectors received respectively 1.0 per cent (£38m) and 15.8 per cent (£322m)."

To drive forward growth in this sector and support food security, digital and technological transformation will be needed, alongside increased trade opportunities and skills support.

Growth Constraints

- **Huge cost implication for automation** – there is an upfront cost for equipment, but also the sector is highly regulated so the kit needs to be tested and meet strict regulations (which can create further cost burdens).

- **Regulation burdens** – labelling and reporting requirements for food safety with environmental legislation and regulation.

- **Supply chain risks** – e.g. Ukraine/Russian war.
- **Significant costs across all areas of production** – energy represents a significant proportion of operating costs, alongside pressures from ingredients and packaging to labour, transportation and logistics.
- **Negative perceptions on food manufacturing** – the current food industry reputation needs to change to engage more young people.

Controlled Environment Agriculture

York and North Yorkshire is a nationally important location for Controlled Environment Agriculture and has been identified by the Department for Business and Trade as the region best placed to welcome controlled environment agriculture and horticulture businesses looking to invest and extend operations within the UK and Europe.

This recognition is due to the region's extensive research and development capabilities, access to over 30 distribution centres servicing the UK retail market, and upstream and downstream supply chain connectivity.

Our current business base is clustered around Selby, which is home to Perfectly Fresh, APS Salad and Phytoponics – this is primarily due to close connectivity to energy assets.

Controlled Environment Agriculture is not about replacing our high-quality arable land and losing sight of our rich agricultural heritage, but it's about adapting to future needs and building resilience in our food supply. Good quality agricultural land does not need to be converted for Controlled Environment Agriculture – urban areas, particularly close to carbon-intensive businesses (as CEA can take waste heat energy and waste carbon), are preferred. The ability to sequester the carbon from other sectors will be in massive demand, especially as the level of Data Centres (which are carbon-intensive) will need to increase to cope with advancements in AI and technology.

Data centres could be seamlessly integrated with next-generation glasshouses, creating a harmonious blend of technology and sustainable food production. This approach not only optimises land use and energy efficiency, it will also enhance the nation's food security and resilience. By embracing this forward-thinking initiative, the UK can pave the way to becoming a global leader in AI infrastructure, provide highly skilled data centre roles that co-exist with Agritech job opportunities and nurture a sustainable and prosperous future.

Regulatory changes requiring businesses to report on scope 3 emissions will put greater emphasis on local supply chains, but the UK has a gap around fruit and veg production. The UK imports around £6.6bn of fruit and vegetables per year, many of which can and used to be grown in the UK.

Equally, the increased demand for food combined with the dietary demands of a growing global middle class are contributing to a global agricultural productivity gap. Total food production needs to increase by 30% to meet the world's requirements, and part of the challenge is that we need to do more with less (particularly balancing land tensions with housing and energy needs).

Controlled Environment Agriculture provides an opportunity to improve UK food security, reduce carbon emissions from transportation, processing and refrigeration, increases shelf life/in-home life of products and reduce waste, reduce and recycle water used in crop growth, with little to no use of chemicals or pesticides applied to the crops produced, reduce packaging due to a much shorter supply chain.

Growth Constraints

- **High costs** – key problems remain around energy, power (for heat and light) and water consumption - all of which affect economic viability, especially when these inputs change significantly.
- **Lack of appropriate sites** – due to the high energy usage, businesses often struggle to find appropriate sites, as they need to be based around energy sources, particularly clean energy supply.
- **Limited investment** – pre-covid, there was significant interest in the expansion of Controlled Environment Agriculture in the UK, but post-covid, private equity and foreign direct investment in this area has decreased as energy prices rose.
- **Lack of carbon production** – reducing carbon production is the right and necessary thing to do, but growers can't get enough carbon. With more carbon, they could potentially double their yield. Positively, there is an opportunity for this sector to be based close to carbon-intensive businesses and capture their CO2 for CEA processes.

- **Labour shortages** – seasonal agriculture workers can't be obtained within the UK and this challenge is being faced globally. High levels of automation are needed to resolve this (horti-tech opportunities are often overlooked for agri-tech). Reducing the seasonality would attract more people to the sector and provide an opportunity to employ more people locally.
- **Carbon taxation** – if CEA businesses capture carbon from other businesses, they are currently taxed as having high carbon processes.

Interconnected Strategies

- Grow Yorkshire Delivery Plan

Engineering Biology & Life Sciences

Leading edge research at the University of York – ranked 4th in England for Bioscience research

Home to major international brands such as health technology company Tunstall and Labcorp

Leading research assets in health – York Biomedical Research Institute, Skin Research Centre

World-class scale up facilities at the Biorenewables Development Centre

Engine for Net Zero bio-based products & the transition away from Fossil fuels & petrochemicals

Regional neighbour to two major UK industrial clusters – Tees Valley & the Humber

Surrounded by the Northern Life Science and Health Clusters

Engineering Biology & Life Sciences

Ambition: Maximise our science, knowledge, innovation and research strengths to drive growth in an Engineering Biology & Life Sciences northern cluster

Key Focus Areas:

- Unlock our Science Superpower capabilities within **Engineering Biology** to drive growth in Industry and Agriculture.
- Strengthen collaboration between our research capabilities and resources within **Life Sciences** to combat global health challenges.
- Increase collaboration across the sector's **northern cluster** to unlock shared benefits such as innovation.

Outcomes

- Increase commercialisation – more start-ups, spin-outs and scale-ups
- Increase inward investment
- Create new jobs

York and North Yorkshire is well-positioned to become the Science Superpower of the North, utilising our Engineering Biology expertise to reduce reliance on fossil-fuel based products and materials and within Life Sciences, harnessing our research expertise to combat global health challenges. York and North Yorkshire will support expansion of the Engineering Biology and Life Science northern cluster by working with its science, knowledge, innovation, and research strengths and close collaboration with neighbouring regions, to ensure innovation in the lab translates to a commercial opportunity, with increased spinouts, scale ups and more science-based, higher wage job opportunities.

Engineering Biology

York and North Yorkshire is a Science Superpower behind Engineering Biology due to extensive research and development assets. From the University of York as one of only 6 global research centres working on sustainable plant and crop resilience, the internationally renowned Fera Science Ltd, to the open-access research facilities at the Biorenewables Development Centre, and home to the UK Agritech Centres (Innovate UK)

Government defines engineering biology as 'as the design, scaling and commercialisation of biology-derived products and services that can transform sectors or produce existing products more sustainably. It draws on the tools of synthetic biology to create the next wave of innovation in the bioeconomy.'

Engineering Biology provides us with the ability to manipulate chemistry affects every aspect of our daily lives – from food security to new materials. Today many of these derive from oil and gas products. As the UK Government has committed to 80% of fossil fuel-based products or plastics being replaced by a bio-based or waste-derived alternatives by 2035, there is a huge market opportunity for engineering biology.

York and North Yorkshire's strengths in this area include:

- High-value bio-renewables – development of bio renewable material with high economic value, focusing on applications across multiple industries. Research capabilities in bioplastics, alternative biomaterials, and bio-based chemicals to replace fossil fuel derivatives.
- Low-Value, High-Volume Bio-Renewables: Production of bio-based materials in large volumes, aimed at reducing carbon footprints in industrial processes. Potential applications include large-scale biomass utilization and energy generation.

- Biorefining: Transformation of biomass into fuels, power, heat, and value-added chemicals. Leverages research from the University of York and collaborations with industrial clusters in Tees Valley and the Humber.
- Waste Valorisation: Turning industrial and agricultural waste into usable products or energy. Focus on circular economy solutions and creating closed-loop manufacturing systems to minimize waste.

Health & Life Sciences

York and North Yorkshire's Life Science sector is primarily centred around strong academic resources, which includes an emerging thriving Life Science sector within the region.

The research strengths within our region are renowned, such as the Skin research Centre located at the University of York to Bioscience Technology Facility providing access to state-of-the-art bioscience technologies for academic and commercial purposes. A leading strength is the interdisciplinary capabilities of the research centres at the University of York, for example The Centre of Assured autonomy Advancing safety assurance of autonomous systems, AI, and robotics across the globe. Their research is aimed to support the safe introduction of autonomous technologies into health and social care covers underlying technical research and work from demonstrators on areas such as assistive robots and ambulance response. York St John University's The Institute for Health and Care Improvement and The Centre for Applied Innovation (CAI) is another example of our region's experts driving to be leaders in applied innovation, driving breakthroughs in technology and addressing critical societal needs.

The industry is developing and concentrated in a few core areas of Biopharmaceuticals, Omics and MedTech and HealthTech. The cluster is more complex than others in the North, but it presents an important growth opportunity in the region. The business base ranges from global brands, such as LabCorp and Scapa Healthcare to smaller scale such as Labskin and Abington Health at York Biotech campus to Spin outs in the region such as Mesenbio.

Society needs new, high-quality research which expands the knowledge base of life science and their potential real-world applications. There are deep health inequalities and significant pressure on NHS budgets and a national imperative to address the UK's productivity problem through the creation of high value jobs and innovation-led growth.

There is significant potential for growth in this sector by building on the extensive research and development assets, innovation health networks and system partners combined with graduates exiting our regions universities with high valued skills in the field.

Cross-Cutting Growth Constraints

- **Lack of investment**: Funding favours the Golden Triangle of London, Oxford and Cambridge. It's challenging for start-ups to access funding through the "valley of death". International investment is an important enabler. There are also funding gaps for early-stage research.
- **Skills gaps**: Academic founders tend to be experts on subject matter and technical aspects with little or no formal commercial training, meaning that they often do not have the necessary non-technical skills to create a spin-out on their own. Engineering biology is inherently multidisciplinary and therefore creates a complicated training and skills challenge. Technical, entrepreneurial, and scientific skills are all needed. Graduates leave York and North Yorkshire, further constraining this challenge.
- **Lack of lab space**: There is a lack of appropriate space for start-ups in the region at an affordable cost. For early development, this means accessing specialist facilities to test whether a new tool or product works at the smallest scales. These facilities need to keep pace with the latest innovations to maintain efficient product development cycles.
- **Lack of incentivisation compared to neighbouring areas**: Competition with surrounding areas that have investment zones or other incentives, which are not available within York and North Yorkshire. This primarily impacts inward investment opportunities.

Northern Cluster

York and North Yorkshire is well-positioned at the heart of a northern cluster, linked to both engineering biology and life sciences. York and North Yorkshire is neighbour to two of the UK's major industrial clusters, Tees Valley and the Humber. By collaborating with our regional neighbours, York and North Yorkshire could support development of a golden triangle for engineering biology in the north of the UK.

Developing a cluster around these sectors is a necessary requirement for growth and attracting talent. Businesses have struggled to attract talent up north as we don't have well-developed ecosystems in the same way that the south does.

Growth Constraints

- **Lack of investment** - private sector capital and supportive networks are concentrated elsewhere in the North.
- **Labour shortages** – many people don't know about the opportunities that available to them and businesses struggle with attracting talent, particularly as areas down south have greater brand recognition for these sectors and well-established clusters already in place.
- **Silos between businesses** – it has been flagged by businesses that up north, there is a lack of collaboration and that creating a cluster and ecosystem is important to address this.
- **Cost of fossil-fuel based products** - Scale-up is the challenge as the products are more expensive than fossil-fuel based products. There needs to be a driver to encourage the market to make the shift.

Clean Energy

Home to the Innovate UK funded £3.3m Retrofit One Stop Shop for York project

York and North Yorkshire is currently investigating the potential to create a model to accelerate decarbonisation and invest in clean energy through a Department of Energy Security and Net Zero funded replicator of the Bristol City Leap project

Two Local Energy Advice Demonstrator (LEAD) programmes focused on hard to treat and hard to reach homes

Clean Energy

Ambition: Create economic opportunities through the need to transition to Clean Energy

Key Focus Areas:

- Harness York and North Yorkshire's **natural capital** to produce clean energy
- Accelerate the **decarbonisation of industry and buildings**, utilising our supply chain and academic and innovation assets
- Maximise **emerging technologies and innovative approaches** to energy

Outcomes

- Increase in renewable energy generation
- Increase in low carbon heating
- Increase in the no. of community owned energy projects & renewable energy projects that benefit communities
- Improved energy efficiency
- Create strong local supply chains within installation and maintenance

York and North Yorkshire will ensure the scale of decarbonisation needs for the area's energy systems translates into an economic opportunity and benefits local communities, alongside supporting national ambitions to boost energy security. This will be achieved through engagement with industry to develop innovative energy solutions, delivering skills and training such as retrofit, increase investment and become an exemplar for green finance.

Natural Capital

With two national parks, three National Landscapes and a vast coastline, York and North Yorkshire

The North-East and Yorkshire have unique geological advantages for geothermal energy. The region has numerous communities in fuel poverty and hard to decarbonise buildings, making it essential to explore low-carbon alternatives like geothermal energy, where appropriate, supporting these challenging areas. In York and North Yorkshire, we have a head-start in heat decarbonisation via geothermal wells, being the location of the country's first demonstrator project converting a redundant gas well into a geothermal well (in Kirby Misperton). Feasibility work is underway on a number of other redundant gas wells, with the potential to provide heat to nearby leisure centres, businesses and residents.

The Combined Authority is also in the process of seeking funding for research to create a blueprint that can be applied across the region, and enable trials in York and North Yorkshire to demonstrate the viability of geothermal systems in decarbonising schools, public sector and historical buildings and communities, amongst various building configurations. This will support the development of a pipeline of geothermal projects in the region that will be complementary to the regional efforts in the transition to clean energy .

Decarbonisation of Industry and Buildings

Drax Power Station, based within Selby in North Yorkshire, is the UK's largest biomass power station playing a central role in producing the UK's electricity and exploring bioenergy with carbon capture and storage. Around 8% of the UK's renewable electricity is produced within Selby. Outside of Selby, the renewable capacity in York and North Yorkshire is modest. This must expand very rapidly to support the transition to clean energy. Drax plays a key role in that decarbonisation journey.

Emissions from buildings account for 23% of total emissions in York and North Yorkshire, with two thirds from domestic buildings. The region has a higher than average proportion of homes off the gas network, a large proportion of detached homes and a higher proportion of pre-1919 homes, resulting in 68% of homes and 62% of non-domestic properties with an EPC rating below C. Yorkshire and the Humber also has the second highest rate of fuel poverty in England.

The supply chain is not currently able to respond to the pace and scale of retrofit needed for net zero by 2034 and beyond. There are approximately 300 retrofit businesses in York and North Yorkshire, with a labour force of approximately 500 people, mostly centred around Harrogate and York. To deliver all the required retrofit measures by 2034, the peak labour requirement is 13,000 people in 2031, currently leaving a large gap in capacity, particularly within insulation businesses.

There are potentially 25,000 employees identified from other industrial groups with similar skills profiles, such as electricians or plumbers that could be reskilled to deliver these requirements.

Growth Constraints

- **Reliance on short-term funding**
- **Constrained supply chain and shortage of skills**
- **Lack of consumer demand, understanding and support**
- **Lack of cohesive data across the region**

Emerging Technologies & Innovative Approaches

York and North Yorkshire has the potential for energy independence, generating all the energy to power the region within its geographic boundaries.

Battery Energy Storage Systems are potentially an option for balancing grid requirements, including investigating alternatives to Lithium Batteries, and inter-seasonal/long-term energy storage.

Work is underway across several workstreams to explore the possibility of Community Energy, whereby the community may have a financial stake or vested interest in an energy project. Through innovative technologies and a systems thinking approach, there a very real possibilities to solve some of the energy challenges of rural areas or areas with fuel poverty. It is imperative to have communities at the heart of such projects.

Through the Bristol City Leap replicator project and alongside the region's established environmental delivery, projects have been delivered and are being developed to decarbonise the public assets in the region. From electrifying council vehicles, to generating power on waste land, from retrofitting existing buildings to implementing solar panels onto schools, the work being done aims to harness innovative technologies and build more resilient energy pathways.

Growth Constraints

- **Lack of investment** - High project costs coupled with the low maturity of the sector make it difficult to attract investment. There is a lack of funding for project development (including feasibility studies) and a lack of commercial investment in development and delivery into energy projects.
- **Less commercially viable in rural areas** - due to the dispersed nature of many rural properties and residents, there are often higher upfront costs associated with energy projects in rural areas, along with a smaller number of “beneficiaries”. This means commercial returns on projects are often less favourable.
- **Planning, land use & heritage constraints –** food and farming is a key growth sector that has been identified, so we don’t want to lose high-quality arable land, but there are parallel needs to increase our clean energy supply and increase house building.
- **Infrastructure constraints** – there is a lack of grid capacity, particularly in rural areas and industrial parks which limits the transition to clean energy. There is not enough physical grid capacity to accommodate supply and demand connections. There is network instability as it is geared toward fossil fuels and unprepared for intermittent power sources (such as wind and solar).
- **Cost comparison between gas and electricity** - Gas is currently far cheaper than electricity and as long as that stays the same way, it is far harder economically to switch to electricity or heat pumps (that rely on electricity). In any other market, where the government wants to discourage consumers from purchasing a product, they would tax it until it was unattractive (e.g. cigarettes, alcohol etc.) but gas remains incredibly cheap in the UK (far cheaper than virtually all other European countries) and so it is far harder for consumers and businesses to justify a transition.

Rail Innovation & Security

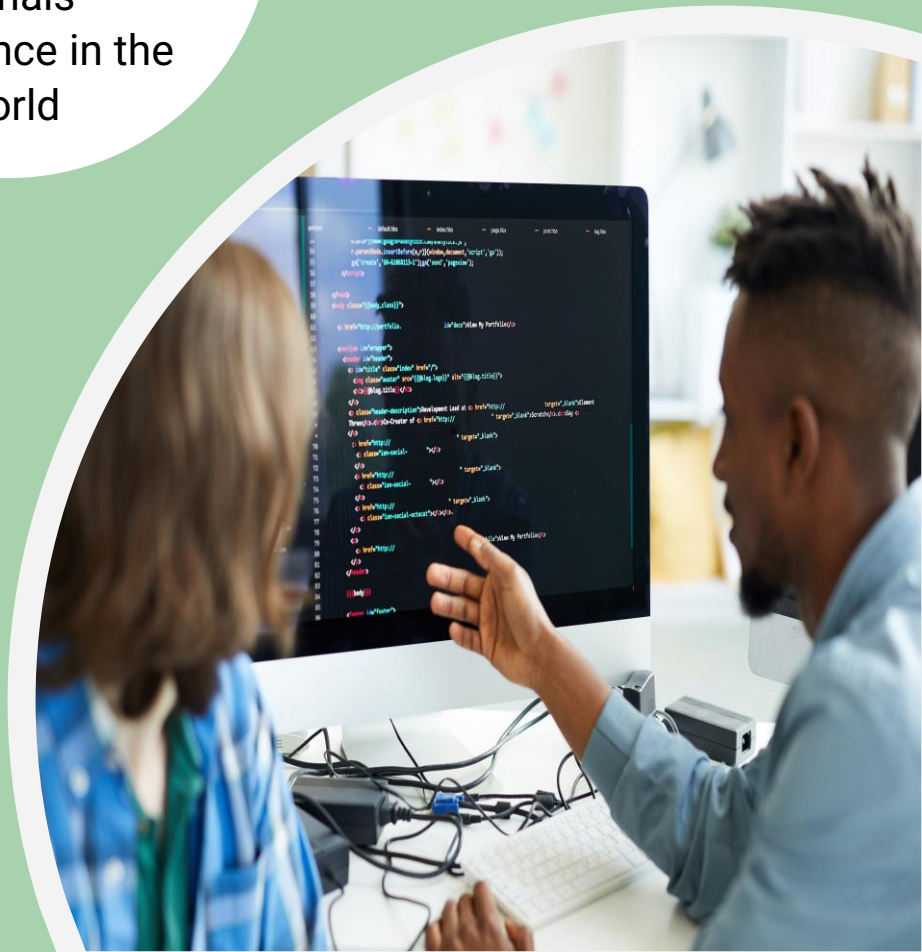
160-year history of providing rail technology, infrastructure and education

A UK hub for rail excellence – Network Rail, Siements, Ricardo Rail, Arup, Mott MacDonald, Amey Consulting…to name a few

GCHQ based in Scarborough - the longest continuous serving site for signals intelligence in the world

Ecosystem connected to 13 rail education institutions

Institute for Safe Autonomy is the only research institute in the world dedicated to safe autonomy, artificial intelligence and machine learning



Rail Innovation & Tech Security

Ambition: Be at the forefront of Rail Innovation and automation, and harness local specialisms in AI and cyber security

Key Focus Areas:

- Maximise the emerging technologies within **Rail Innovation**, including AI and quantum communications, to drive high quality jobs, increase security within the rail sector and increase productivity.
- Working with anchor institutions and academic assets, unlock the economic potential of local specialisms linked to **AI and cyber security**.

Outcomes:

- Increase the value of the sector
- Create new jobs
- Product / service development
- Increase productivity

Rail Innovation

From the earliest days of steam to the sustainable solutions of tomorrow, York and North Yorkshire remains the driving force behind UK rail innovation. With a 160-year history of providing rail technology, infrastructure and education we have the experience and expertise to deliver global solutions across every aspect of the rail sector.

Serving as a pivotal hub, York hosts a dense concentration of railway organisations, spanning from independent consultants to the esteemed Network Rail Eastern region operations centre, cementing its position as a key node in the intricate network of the national rail system.

Fostering this environment further is the emergence of a burgeoning digital rail innovation and transport dynamic cluster, buoyed by the support of a tech accelerator backed by Barclays Eagle Labs and the Institute for Safe Autonomy. As the world moves inexorably towards a digital future, the Global Digital Railway Market anticipates significant expansion, with projections indicating a size reaching £64.2 billion by 2028, experiencing a notable market growth of 9.2% during this period, as per insights provided by Research and Markets.

The region boasts 13 prominent rail education providers, contributing to a location quotient of 6, indicating a notably higher concentration of rail skills compared to the national average.

At the local level, the prowess of rail tech companies shines through, having achieved notable successes in AI advancements, seamlessly weaving together disparate data sets and harnessing train positioning data with unparalleled precision. This heralds a new era of real-time insights extraction from aggregate data, powered by AI algorithms and tailored for dissemination to pertinent user groups.

Indeed, the digital rail opportunities available represent a tangible growth prospect for York and the region's rail companies, poised to propel them towards new frontiers of innovation and prosperity.

Growth Constraints

- **Ageing workforce** - Upskilling and reskilling is needed to retain employees for longer. New entrants are important but the current workforce can't be overlooked – they need to be encouraged to retire at a later stage, or stay in the sector for longer in a new role. There is a major opportunity around upskilling and retraining, including through an apprenticeship route and encouraging transferable skills from other sectors, particularly as the labour shortages are happening now and are not simply a potential, future risk.

- **Perception around job roles –** lack of awareness of the career opportunities and the skills required for new and growing roles, particularly linked to sustainability and digitisation. More can be done to engage younger people, women and minorities, promoting the benefits of a career in rail, such as stable income, development opportunities and career progression, including the variety of roles.

AI and Cyber Security

There are a number of opportunities within York and North Yorkshire that could be unlocked around AI and Cyber Security to drive economic growth.

The presence of GCHQ and the National Cyber Security Centre in Scarborough present an opportunity in the growing Cyber sector particularly when linked to defence assets such as Catterick Garrison and RAF stations at Menwith Hill and Leeming.

Our region's wealth of expertise and R&D capabilities received a major boost in 2023 with the establishment of the Institute for Safe Autonomy (ISA). Housed in a £15million purpose-built facility at the University of York, the ISA offers unrivalled opportunities for collaborative R&D, through sponsored collaborations and offering expertise on funding proposals.

The ISA facility enables testing to move in phases from a highly-controlled laboratory setting, to shared indoor office environments, and eventually to semi-controlled and open outdoor spaces. Home to over 100 independent experts across multiple sectors, the ISA will ensure a safety critical design, development and deployment of autonomous systems.

Creative Industries & Heritage

York's UNESCO City of Media Arts status – one of only 26 cities in the world

1500+ businesses in York and North Yorkshire are operating in the creative & digital sector

Globally-operating businesses, such as Viridian FX which creates high-end visual effects for film, TV and screen media. Based in York, the agency's clients include Netflix, HBO, Paramount and Apple TV.

Centre of Excellence for mixed reality based at Askham Bryan

Harrogate & York recognised as one of the three innovation led clusters in the whole Yorkshire region

XR Stories, a partnership between the University, the British Film Institute and Screen Yorkshire contributed to the economic growth of the region's screen industries

Creative Industries & Heritage

Ambition: Maximise York and North Yorkshire's Creative and Heritage assets to drive growth in emerging immersive technologies and build national and global recognition

Key Focus Areas:

- Build on York and North Yorkshire's strengths in **Media Arts**, including UNESCO-recognition, and entrepreneurialism to drive growth through job creation, start-ups and scale-ups.
- Increase the economic opportunities of York and North Yorkshire's **heritage assets** through innovative new uses and creative approaches, such as immersive experiences.

Outcomes:

- Create new jobs
- Increase start-ups and scale-ups

York and North Yorkshire has a wide variety of businesses operating within the Creative Sector, including multi-media installations, digital storytelling, VR and interactive media – the list goes on! Where the region is unique in this sector is the entrepreneurialism of our SMEs, their ambition and willingness to collaborate and grow which needs to be harnessed further.

Creative Entrepreneurialism

York and North Yorkshire are at the forefront of digital and creative innovation, evidenced by the quality of the businesses and organisations based here. We have excellent facilities and R&D capabilities in immersive, mixed reality, both at the University of York and York St John and within the college sector – most notably Askham Bryan's award-winning Centre of Excellence for mixed reality.

The University of York is leading on R&D through CoSTAR (Convergent Screen Technologies And performance in Realtime) Live Lab, one of 3 regional labs which, along with the national lab, is backed by government to the tune of £75.6m

The facilities delivered through CoSTAR Live Lab will offer the creative industries in York and North Yorkshire a long-term infrastructure to build new capability for our region in Creative Innovation and Research. CoSTAR will also be incubating start-ups, training future technologists and empowering diverse voices and new talent across the sector.

York is one of only 26 cities in the World - and the only UK city – to have been designated as a UNESCO City of Media Arts (which includes communication through photography, film, video, audio, computer or digital arts and interactive media – e.g. gaming) and with companies across the region delivering world-class content from VFX to BAFTA-qualifying film festivals and installations seen at Global events. Our region's creative industries have impact locally, nationally and globally.

With York, the most visited UK destination after London and Edinburgh and renowned destination towns of Harrogate and Scarborough, through rural creative hotspots like Ryedale and Skipton; cathedral centres like Selby and Ripon and across to the '"creative coast" , York and North Yorkshire's combination of urban, rural and coastal places sets it apart from other areas. Each place has its own creative network and strengths, and by connecting these networks together we can forge a regional narrative to drive growth, raise the profile and increase opportunity.

Growth Constraints

- **Perceptions of the sector** – we need a shift in perception so that our young people see creative careers as viable (that they can be creators of content and not purely consumers) and a recognition of the economic impact of the creative industries as well as the economic impact of the wider 'creative economy' (i.e. creative jobs in non-creative sectors).

- **Lack of skills / people** – a decline in young people constrains the available labour market, and, linked to the above, the sector needs to be seen as a viable career path and accessible.
- **Lack of investment** – seed-funding is needed to support start-ups and scale-ups.

Heritage

York and North Yorkshire is a region blessed with an abundance of natural and built heritage, from prehistoric, Roman and Viking, but this is more than a pleasant backdrop that makes York and North Yorkshire an attractive place to visit and live.

Our Heritage underpins a number of our key sectors. With internationally-renown sites, such as the Studley Royal and Fountains Abbey World Heritage Site, it is fundamental to our tourism sectors. Technology is critical to unlocking further benefits for the sector. We have the expertise and ability to use digital and immersive technology to protect, preserve and present that heritage for current and future generations.

York Minster's Centre of Excellence for Heritage Craft Skills features a state-of-the-art Tech Hub that utilises the latest technology to enhance and safeguard the future of centuries old creative skills and is pioneering a new approach to heritage preservation.

Local Assets & Capabilities

Local Assets & Capabilities

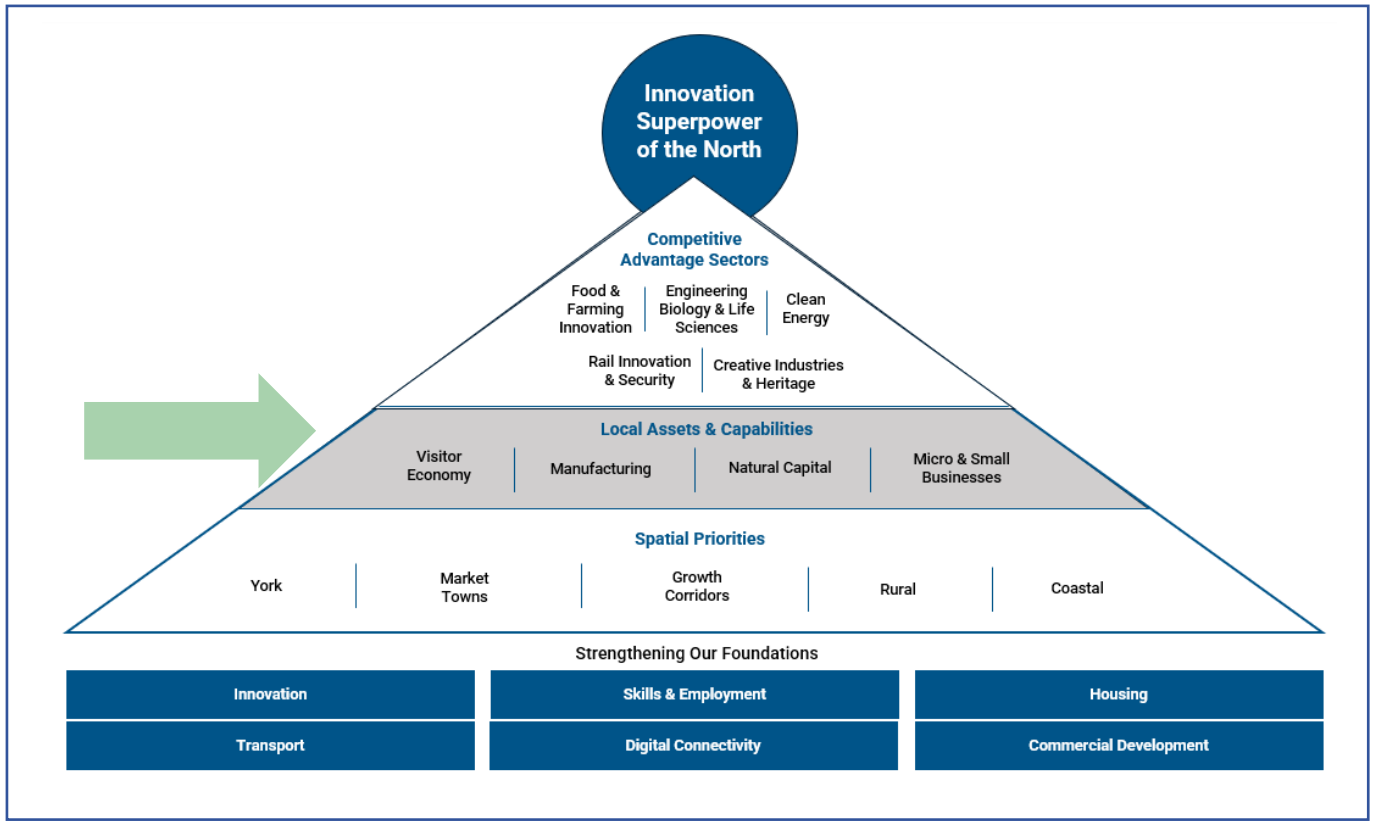
Whilst the sectors of competitive advantage (identified in the previous chapter) are where the most economic growth will take place, the CA will also put in place measures to ensure that key local assets can continue to advance which will stimulate the economy on a broader basis.

The following have been identified as key local assets, given their significance in either scale, employment, business numbers, or supply chain contribution to our growth sectors:

- Visitor Economy
- Manufacturing
- Natural Capital
- Micro & Small Businesses

Less engagement has taken place on these priorities, so further views will be sought as part of the consultation process.

Other sectors are fundamental to the success of our economy, such as professional services and health and social care. Although these are not the focus of the Growth Plan, the CA will continue to continue to support their growth and resilience, primarily through the Growth Hub's business support and skills development.



Natural Capital

Ambition: Enhance and invest in York and North Yorkshire's expansive natural capital to unlock economic benefits and increase natural carbon sequestration

Key Focus Areas:

- **Maintain and improve the natural landscape** to increase the resilience of our growth sectors, create new jobs and reduce carbon emissions.
- Develop **adaptation** strategies to ensure resilience of our region, while supporting emerging economic opportunities from natural capital, such as carbon credits.

Outcomes:

- Create new jobs
- Increase start-ups and scale-ups

Natural Capital

The natural beauty of York and North Yorkshire is one of our most distinct qualities. We have two national parks (North York Moors and the Yorkshire Dales) and three National Landscapes (Howardian Hills, Nidderdale and the Forest of Bowland), alongside strong marine opportunities from our coastline.

But the landscape is more than an attractive asset, it plays a significant economic role. Food and Farming is reliant on high-quality land, whilst our Creative sector has an opportunity for product development and innovation that encourages more usage and enjoyment of our natural capital, benefitting our tourism businesses, and protection and maintenance of our landscapes provides new "nature-based" jobs (e.g. from tree planters and peatland ecologists to green finance).

There are also significant decarbonisation benefits from natural capital through sequestration and carbon capture as natural carbon sinks. Restoring and protecting these assets, including tree planting, increasing hedgerows and increasing bioenergy crops, could help us to decrease our greenhouse gas emissions, creating a healthier environment for our residents, and, consequently, creating a strong and productive workforce. Tree planting for carbon sequestration also supports climate change resilience by providing natural flood risk management, water security and shading benefits.

We are 1 of 4 pilot places that are part of DEFRA's Local Investment in Natural Capital, developing and testing approaches to leverage private sector investment to to enhance our natural capital, improve carbon sequestration and boost biodiversity. These projects illustrate how our net zero ambitions can yield economic benefits for landowners, farmers, and coastal communities.

York and North Yorkshire is primed to be a pioneering area for natural capital, including the development of a carbon credits standardisation and working closely with our science and academic asset base.

Interconnected Strategies

- Local Investment in Natural Capital

Visitor Economy

Ambition: Build on the strengths of our Visitor Economy to further increase the value of the sector and share economic benefits more widely across the region

Key Focus Areas:

- Increase the value of the sector through **sustainable and regenerative tourism**, encouraging visitors to further explore and spend more in the region, particularly through transport enhancements.

Outcomes:

- Increase the economic value of tourism and hospitality

Visitor Economy

York and North Yorkshire has a vibrant and successful visitor economy, worth more than £5.86bn to the region. Attracting over 40 million visitors and supporting over 54,000 jobs, the visitor economy plays a significant role in the wider economy.

From the iconic York Minster and cobblestone streets of the Shambles in York, which has the most attractions per square mile in the UK; to the historic spa town of Harrogate and its maintained Roman Baths; to our distinct coastline, including Scarborough and Whitby, the latter which is home to Whitby Abbey and popular Dracula and Goth festivals; alongside the vast and beautiful countryside across North Yorkshire. The tourism offer is both diverse and widespread.

The sector has strong assets to build on and opportunities for growth. But growth story is not just about increasing the number of tourists, it's about increasing the value of tourism through new approaches, such as regenerative tourism.

Regenerative tourism is about visitors having a positive impact on their holiday destination – whether that's through supporting local economies, preserving culture and heritage, or respecting and enhancing the natural environment. It also encourages visitors to stay for longer but travelling in a sustainable way and discovering new places. For example, if visitors came to York for the day, could they be encouraged to book a hotel for longer, explore the city centre, then utilise public transport to go explore further – like jumping on the train to Harrogate or Scarborough.

Alongside these opportunities for growth and development, the sector is exposed to many threats – overly saturated locations, staff shortages, domestic and international competition and increasing pressures for sustainable tourism, to name a few.

Interconnected Strategies

- York and North Yorkshire's Local Visitor Economy Partnership Framework

Manufacturing

Ambition: Increase the resilience and growth of our core manufacturing subsectors through high value job creation and productivity improvements

Key Focus Areas:

- Support sustainable growth in the **global bus and vehicle assembly** through skills development and technology enhancements.
- Increase manufacturing capacity within **future engineering materials** to further strengthen and localise supply chains.
- Explore **emerging growth clusters** within manufacturing (such as security and defence).

Outcomes:

- Increase productivity
- Increase GVA of the sector
- Create jobs

Manufacturing

Manufacturing is a significant asset in York and North Yorkshire, particularly as it's heavily interconnected to other sectors as part of the supply chain. The combined GVA of manufacturing in York and North Yorkshire is £9.6b with over 1,700 companies employing around 45,500 people.

Our main subsector is food and drink production, which is addressed via our competitive advantage sectors, which looks at the full food ecosystem, from farm to fork.

York & North Yorkshire is home to a cluster of innovative businesses creating buses fit for the needs of today's commuter. Switch Mobility, a manufacturer specialising in the creation of lightweight, electronic buses have made their base in our region. We're also proud to be home to the UK's largest bus assembly company, Alexander Dennis.

These and other manufacturers in our region know they can rely on a strong motor vehicle component supply chain industry in the region, comprising more than 100 manufacturers of all aspects of vehicle component parts.

Engineering is the biggest employment sub sector with 18,000 people working for nearly 1,000 businesses with a combined turnover of £2.5b. This subsector has UK and global leading specialists making machinery, vehicle and construction components and chemicals and packaging.

Increasing manufacturing capacity in the York & North Yorkshire area will help those investors who want to localise their supply chains and minimise the impact of future crises.

Moreover, considerable opportunities are emerging in new technologies, materials and low-carbon processes. Manufacturing can use innovative technologies and methodologies to enhance productivity and competitiveness.

York & North Yorkshire has a great manufacturing story and expertise to tell the world. But there are challenges facing the sector – high costs across materials and utilities; a lack of transport connectivity affecting the movement of goods and access to labour; unaffordable housing near employment sites; and a lack of confidence in the medium to long-term.

SMEs & Independents

Ambition: Support the entrepreneurialism and start-ups, alongside resilience and sustainability of SMEs

Key Focus Areas:

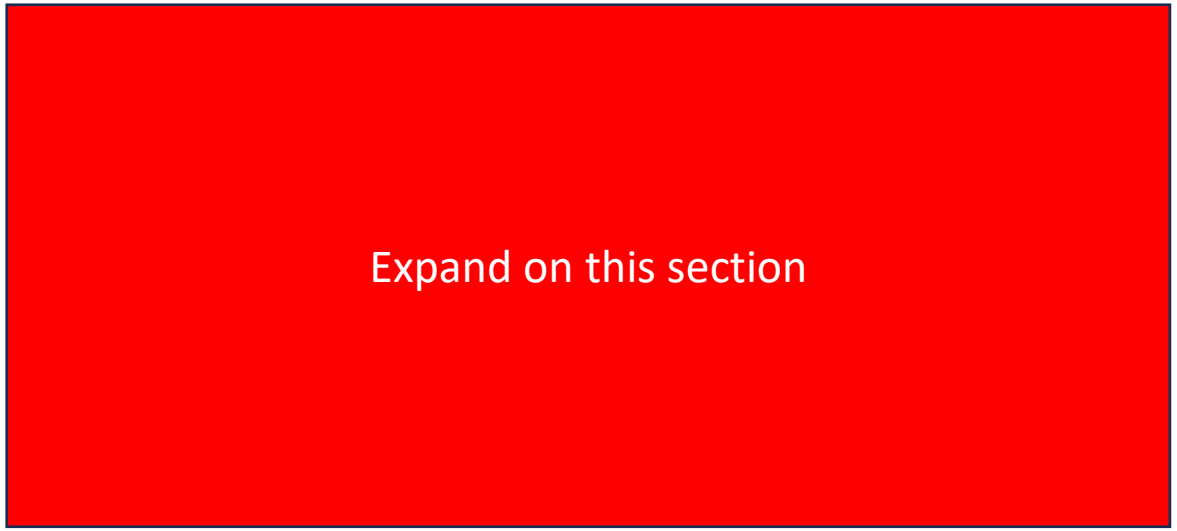
- Support **entrepreneurialism, greater resilience and growth opportunities within our SMEs**
- High street focus?

Outcomes:

- Increase the no. of start-ups
- Increase survival rates
- Create new jobs

SMEs & Independent Businesses

York and North Yorkshire's economy is dominated by smaller sized businesses, with 89% classified as micro (having up to 9 employees). Larger businesses are less than 1% of the business demographic (although this should not diminish their significance in terms of economic contribution and employment). This is largely reflective of England; however, business births lag nearly 20% behind.



Spatial Priorities

Spatial Priorities

Our region's distinctive mix of rural areas, vibrant towns, and the historic city of York positions it as an ideal region for addressing rural productivity challenges and fostering sustainable development. But this diverse geography also means that a 'one size fits all' approach may not be appropriate.

We want all communities in York and North Yorkshire to benefit from this Local Growth Plan and ensure that economic growth and wealth creation is distributed across our large and varied geography. In recognising that the economy and geography of York and North Yorkshire is diverse and unique, different approaches will need to be undertaken in order to make sure that the benefits are shared. Whilst no specific locations have been identified at this stage, the following high-level splits are being proposed.

Emerging Spatial Priorities

York – a key economic hub that is the largest urban area within York and North Yorkshire and home to two of our universities (University of York and York St John), alongside a number of key innovation and R&D assets. Not only is the city significant to the region, but it has a national role, particularly its position on key rail networks and strong connections to London (less than two hours on the train). York Central at 45ha is one of the largest mixed-use regeneration projects in the UK, and, as the name suggests, is at the centre of York, alongside its rail station and core employment sites. This provides much needed modern office space (raising floorspace for this use from 13 to 16%), residential, a new public square, and 18 acres of public realm. The development is a transformative project set to deliver over 2,500 new homes, with at least 20% designated as affordable housing.

Regional Centres & Market Towns – aside from York, the historic spa towns of Harrogate and Scarborough, and the cathedral city of Ripon, the region's principal settlements are market towns. For example, Knaresborough, Selby, Skipton, Malton, Northallerton and Richmond (to name a few). Integrated closely with the York and West Yorkshire economies, Harrogate is the second largest population area. Development of a new village (Maltkiln) is underway, connected to Harrogate by the A59 and served by the existing rail station at Cattal, which proposes 4,000 homes.

Coastal - York and North Yorkshire has an incredible coastline with a strong maritime history, a buoyant visitor economy, manufacturing base and emerging offshore renewables sector. Scarborough is one of our largest coastal communities. Middle Deepdale expansion is a major residential development in North Yorkshire, delivering over 1,350 new homes as a sustainable urban extension to Scarborough. Spanning 90 acres, the project includes homes for sale and rent, extra care housing, community facilities, a school, retail outlets, and public open spaces.

Rural – with two National Parks (North York Moors and Yorkshire Dales) and three National Landscapes (Howardian Hills, Forest of Bowland and Nidderdale), the majority of York and North Yorkshire is defined by rurality and smaller settlements. This rurality brings both opportunities and challenges. For example, research shows that rural residents typically spend around £1,500 more a year on transport than urban households. Many areas across North Yorkshire – even those within the central north-south transport corridor, such as Richmond, Northallerton and Ripon – have poor public transport links which make major employment areas accessible only to nearby communities or those driving to their place of work.

Growth Corridors – recognising the relationships between places/areas in achieving growth, the Growth Plan may identify interconnected 'Growth Corridors', which could support future requirements for the CA to produce a Spatial Development Strategy. At this point, we are not seeking to agree these locations, but examples could include:

- City to Coast / York to Scarborough
- A1 Corridor / East Coast Mainline (Northern border of the region, including Richard and Catterick, running through Northallerton, Thirsk, through to York and to the Southern border, including Selby)
- A59 Corridor or West to East Corridor (Skipton, Harrogate, York, through to the coast)
- M62 Corridor (Selby to the East Coast)

(Note: the above examples are for demonstrative purposes and are not the agreed approaches.)

Strengthening the Foundations

Strengthening the Foundations

York and North Yorkshire Combined Authority will work with a number of partners, both local, regional and national, to ensure the right mechanisms are in place for our businesses, communities and environment can thrive. This will include:

- Strengthening the **Innovation** Ecosystem to improve productivity, bring new products to market and increase the value of our growth sectors.
- Ensure the right **skills and employment** support is in place to unlock business growth and encourage more people into the labour market.
- Accelerate place-based sustainable development and create new growth opportunities through investment in **housing**.
- Increasing **digital connectivity** to enable technological transformation,
- Unlock **commercial development** to support growth and inward investment,
- Improve **transport** connectivity to ensure businesses have access to a diverse labour market.

Innovation

Innovation is doing something different to create value. It might be transforming creative ideas into new product solutions. It can also be about changing processes or approaches to improve efficiency, productivity and profitability. An increased focus on delivering innovation can be a catalyst for growth and an opportunity to gain competitive advantage. At a time when technological advancements are rapid and the economic landscape constantly shifts, innovation is critical for survival and success.

York and North Yorkshire has a dynamic innovation ecosystem, including world-class education (including three universities), science and Research and Development assets (e.g. National STEM Learning Centre, the Agri-Tech Centres (CHAP and CIEL), Institute for Safe Autonomy) and sectoral clusters (Food & Drink corridors, BioYorkshire).

However, we need to increase the translation of innovation into industry and encourage greater collaboration between the innovation ecosystem and businesses. While the region supports a strong level of innovation – with broadly comparable research funding and a higher level of 'innovation active' businesses compared to the national average – this regional strength does not translate into business growth.

Innovation also can't just take place at our urban centre. We need the benefits of these assets to be felt more widely, particularly as our cluster strengths are often dispersed and reflect the widely rural nature of York and North Yorkshire.

Interconnected Strategies

- Innovation Action Plan (in collaboration with Innovate UK)

Emerging Support Needs

- **Innovation Ecosystem –** high quality lab space, "hub and spoke" models,, cluster development, ambassadors/champions for innovation.
- **Increase collaboration between industry and academia** – Knowledge Transfer Partnerships
- **Investment for Commercialisation –** proof-of-concept, early-stage or scale-up investment, increased support for commercialisation within the universities.
- **Technology Adoption** – Made Smarter programme approaches, investment and skills support.
- **Investment for Innovation Pilots & Feasibility** – emerging sector development, particularly energy opportunities and ensuring viability.
- **Regulatory Changes** – R&D tax support/relief.

Skills and Employment

York and North Yorkshire performs strongly in terms of its qualification profile, with York having the highest skills levels of any city in the North of England. But these skills don't always address the needs of industry and changing trends mean upskilling and reskilling is needed.

The skills system needs to be able respond to a range of demands - from specialist and technical skills; to supporting residents to progress from basic level skills through to higher level skills. Transferable skills will be increasingly important for those transitioning into emerging sectors or for those displaced from contracting sectors.

The transition to carbon negative offers the opportunity of new jobs (e.g. in renewable energy sector) and new skills (e.g. retrofitting requirements for the construction sector). New technologies and increasing digitalisation are transforming the world of work. Digital skills are very much a core skill, equivalent in importance to literacy and numeracy and needed for most jobs.

York and North Yorkshire has low levels of unemployment, but an ageing population and decline in young people mean there is a constrained labour market. Where growth leads to the creation of new jobs, there may not be the people available to fill those roles. Of those economically inactive, 14.4% do want a job, which equates to around 13,500 people – there could be an opportunity to better utilise our inactives.

Interconnected Strategies

- Skills Strategy

Emerging Support Needs

- **Increase entrepreneurial and commercial skills**
- **Career Pathway Development** – utilise the Careers Hub and engagement with schools to target younger people
- **Centres of Excellence Models**
- **Digital Skills Development**
- **Wider Labour Market Support –** Inactives Trailblazer

Housing

Unlike many Northern counterparts, York and North Yorkshire has challenges around unaffordable housing, which pushes many young people out of the area and prevents key workers from living here, all of which contributes to a constrained labour market and limits future economic growth. Average rents in the city centre of York much closer reflect the prices within the South-East. High rental costs mixed with low wage levels means that rented accommodation is equally unaffordable for residents.

Affordability is heavily impacted by the number of second homes and holiday lets in our most popular tourist spots, together with the high cost of delivering new affordable rural homes means that ensuring a supply of new homes is vital to the sustainability of our rural communities.

There are significant requirements to increase housing supply, further encouraged by Government's recently increased housing targets. York and North Yorkshire sees the greatest increase in housing targets under the new method of all Combined Authorities, second only to the Tees Valley. However, for York specifically the target increase is 19.3%, whereas for North Yorkshire it is 199.5%.

There will be a large demand for retrofitting within York and North Yorkshire due to its current housing stock and this need applies to all tenures. Improving the efficiency of our homes creates an opportunity for the construction sector from both a skills and employment perspective and means more comfortable homes and reduced costs for our residents.
Increasing housing is not just about quantity, but also quality, affordability and sustainability.

Interconnected Strategies

- York and North Yorkshire 10-Year Housing Strategy
- Spatial Development Plan (future requirement)

Emerging Support Needs

- **Investment to accelerate stalled sites –** Brownfield Housing Fund, Revolving Investment Funds or Flexible Infrastructure Fund
- **Future land and redevelopment –** One Public Estate, MoD opportunities
- **Investment for Retrofit Delivery** – Devolved funding

Digital Connectivity

For broadband, North Yorkshire lags behind the national average, with coverage just above 50%. This indicates a significant gap in gigabit broadband access, which may reflect challenges in deploying infrastructure in rural areas.

York has higher coverage than North Yorkshire, with over 70% of premises having access to gigabit broadband. This is closer to the national average and highlights York's better connectivity.

The national average for 5G coverage is around 75%, sitting between York and North Yorkshire

York has the highest 5G coverage, with nearly 100% of its area covered by at least one mobile network provider. This demonstrates excellent connectivity, likely driven by its urban nature and focus on digital infrastructure.

North Yorkshire has significantly lower 5G coverage, at around 60%, reflecting the challenges of rolling out 5G infrastructure in a predominantly rural area.

Emerging Support Needs

- **Improve broadband infrastructure**
- **Pilot innovative solutions to address growth sectors**

Commercial Development

Several large-scale housing and regeneration projects are set to reshape the region. York Central, a 45-hectare site, is one of the UK's largest mixed-use regeneration projects, incorporating modern office space, residential developments, and public realm improvements.

North Yorkshire is in the process of developing a comprehensive Local Plan to guide development over the next 15 to 20 years. A call for sites has been run and there are significant opportunities identified along the A1 corridor running North to South, to the North West of York and a concentration of potential sites around Selby which would increase density and be well placed for the new Selby gateway development which will support travel around the region and into West Yorkshire.

Other key commercial projects create opportunity and demand for housing delivery in the nearby areas, including the redevelopment of Kellingley Colliery into a 64-hectare mixed-use site, Olympia Park in Selby focusing on industrial and renewable energy development, and Gascoigne Interchange, a major logistics hub with significant economic potential.

Emerging Support Needs

- **Incentives for inward investment –** investment zone approaches, although this would need to be managed with displacement challenges.
- **Viability** – removing viability challenges to accelerate commercial development.

Transport

York and North Yorkshire is well located to take advantage of key transport connections to other major economic centres and markets. York is directly connected by rail to 150 cities, towns and villages across the UK and is within a 2-hour journey to London. We have excellent North-South connections by both road and rail and on the Transpennine route across to Leeds and Manchester. Our region is also close to 3 international airports at Manchester, Leeds/Bradford and Tees Valley.

Our key strategic transport assets are the East Coast Main Line (particularly our national railway hub at York), the Trans Pennine rail route and the A1, A19, A66, A63 and A59 road corridors, as well as the connection to the M62.

However, there are limitations to the connectivity within the region. Poor public transport links mean that most major employment areas are accessible only to nearby communities, restricting opportunities for workers from further afield.

The reliance on localised rail and bus services creates isolated commuting zones, making it difficult for people to travel efficiently between towns and cities within York and North Yorkshire.

This lack of regional integration in the public transport network limits labour market mobility and economic interaction between urban centres, contributing to fragmented development across the area.

Connectivity is much stronger across the geography when driving, especially compared to public transport, with the only major barriers being the region's National Parks. Despite the wider accessibility offered by driving, there is still a lack of connectivity between the northern, coastal, and southern parts of York and North Yorkshire.

Coastal areas, in particular, are isolated, with their commuting zones not extending significantly inland or connecting with central and southern areas.

Driving a car or van is the most common mode of travel in North Yorkshire (53%) and York (41%), both exceeding the England average (37%).

The high reliance on cars in North Yorkshire reflects its rural nature and limited public transport options. York has public transport use equivalent to the national average, whilst North Yorkshire has lower levels.

The current transport system is not working for some people, in urban areas buses are trapped in congested streets and in rural areas residents are stranded by irregular services.

Interconnected Strategies

- Strategic Transport Plan

Emerging Support Needs

Rural, coastal and urban transport innovation – adapting services and infrastructure in order to connect our rural communities to economic opportunities and expertise, particularly within our urban centres such as York, and expand labour market accessibility.