The Role of Housing in the Northern Powerhouse

An analysis of the housing required to unlock the benefits of transport investment in the North of England

A Cebr/Quod report for Homes for the North | **July 2019**

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About Homes for the North

Homes for the North is an alliance of 17 of the largest developing housing associations in the North of England. In January 2016, we launched in Parliament, in order to bring the large regional providers together to help develop policy solutions to the housing crisis in the North.

Homes for the North members currently provide a third of all social rented homes in the North and are planning to build over 20,000 new homes over the next three years. This will add to our current stock of around 500,000 homes. Our work and investment provides a significant contribution to local economic growth, adding up to £2.5bn per year to the Northern economy.

Foreword

'The Northern Powerhouse is a vision for joining up the North's great towns, cities and counties, pooling their strengths, and tackling major barriers to productivity to unleash the full economic potential of the North'. This is the introductory sentence to the Government's 2016 Northern Powerhouse Strategy. The message sets out a clear ambition for the North of England to play a key role in the UK economy by building a better connected North. At Homes for the North, we work collectively, developing policy solutions enabling the North to build the homes we need to support economic growth.

Since the publication of the strategy, Transport for the North has become England's first Sub-national Transport Body, charged with planning and prioritising long term infrastructure investment across the North. This culminated in the publication of Transport for the North's Strategic Transport Plan, which outlines how up to £70 billion of investment to 2050 will contribute to an additional £100 billion in economic growth. This bold and ambitious strategy will only be fully realised by working in partnership across sectors, driven by long term and collaborative thinking.

The vision for a thriving pan-northern future is led by investment in infrastructure – but infrastructure is about more than just transport. Creating better access to work, leisure, and business will undoubtedly be a driver for growth. However, of equal importance to building a prosperous North, is investing in other core sectors such as science, technology, healthcare, education and housing. This report outlines the central role that housing must play as part of infrastructure investment if we are to transform the North's potential into reality.

For the last three years, Homes for the North has campaigned to bring housing to the forefront of rebalancing the UK's economy. We recognise that the North has a wealth of untapped growth potential that needs to be developed, but to unlock that potential, people need homes to live in, homes they can afford and homes in places where they want to live. That's why this report has explored in depth, the number, type and distribution of new homes we need to support a transformed northern economy.

This report highlights the importance of the integration of housing, infrastructure and economic growth. The housing market needs effective intervention now to work in the long term for local people and for people who will be local, joining us in the revitalisation of the North. The time to address our future housing needs is now to ensure we build a future that works not just for the North, but for the nation.

Bronwen Rapley, Chief Executive, Onward Homes

Executive Summary

The Northern Powerhouse Independent Economic Review (NPIER), published by Transport for the North in 2016, sets out a transformational vision for shifting towards more productive industries with more highly skilled jobs. Driven by investment in infrastructure and skills, it is forecast that the Northern Powerhouse could generate a £100bn boost to the economy, support 850,000 additional jobs in the North by 2050, and rebalance the economy between North and South.

This report shows achieving that vision is dependent on building enough homes. An integrated approach to housing supply could unlock growth, but if housing is not included as part of the infrastructure of future development, the lack of suitable housing could act as a brake on economic growth.

> "Building the right homes in the right places will require both pan-Northern and national collaboration."

> "A further two million homes will be needed across the North by 2050."

Housing unlocks Northern growth: we need to build two million homes

Delivering the Northern Powerhouse will require careful planning. Transport investment is vital, and as the North grows, the demand for jobs will grow with it. In order to fulfil this economic potential and accommodate the North's future workforce, a further two million homes will be needed across the North by 2050. This breaks down to around 50,000 a year up to 2027, then an increase in pace of delivery to around 70,000 per year until 2050. Action will also be needed to upgrade existing housing, which is not always fit for purpose.

Failing to provide the right housing in the right places will inhibit economic growth. A strong local housing offer is critical to attract and retain highly skilled workers. History has shown that housing will not 'follow' high pace growth organically, and markets have failed to deliver until prices have risen and affordability suffered. Government intervention to correct housing market failures over many decades proves that housing should not be treated as an afterthought. Intervention is also required to ensure that lower skilled workers can contribute to and benefit from this growth.

Housing must, therefore, be treated as a core part of infrastructure. This means taking an integrated approach to strategic planning and investment and acting collaboratively to understand emerging opportunities and choices.

Overcoming the shortage of brownfield land needs pan-Northern strategic investment

As transport links improve, more workers will be able to travel between, not just within regions. It is therefore feasible that smaller sub regions and towns could build a higher proportion of the homes needed for people working in locations where there is higher demand but less land available.

We have identified brownfield capacity for around 300,000 new homes (around five years supply) across the North, but such sites can take many years and large scale investment to unlock. Land constraint is particularly acute in those city regions anticipated to have significant additional net housing requirements.

There is a strong rationale for an integrated approach. Transport investment can link up inaccessible, lower demand towns with economic opportunities. Local economic development, alongside investment in housing supply and quality, can increase the desirability of such areas, bringing economic opportunities back to those same towns.

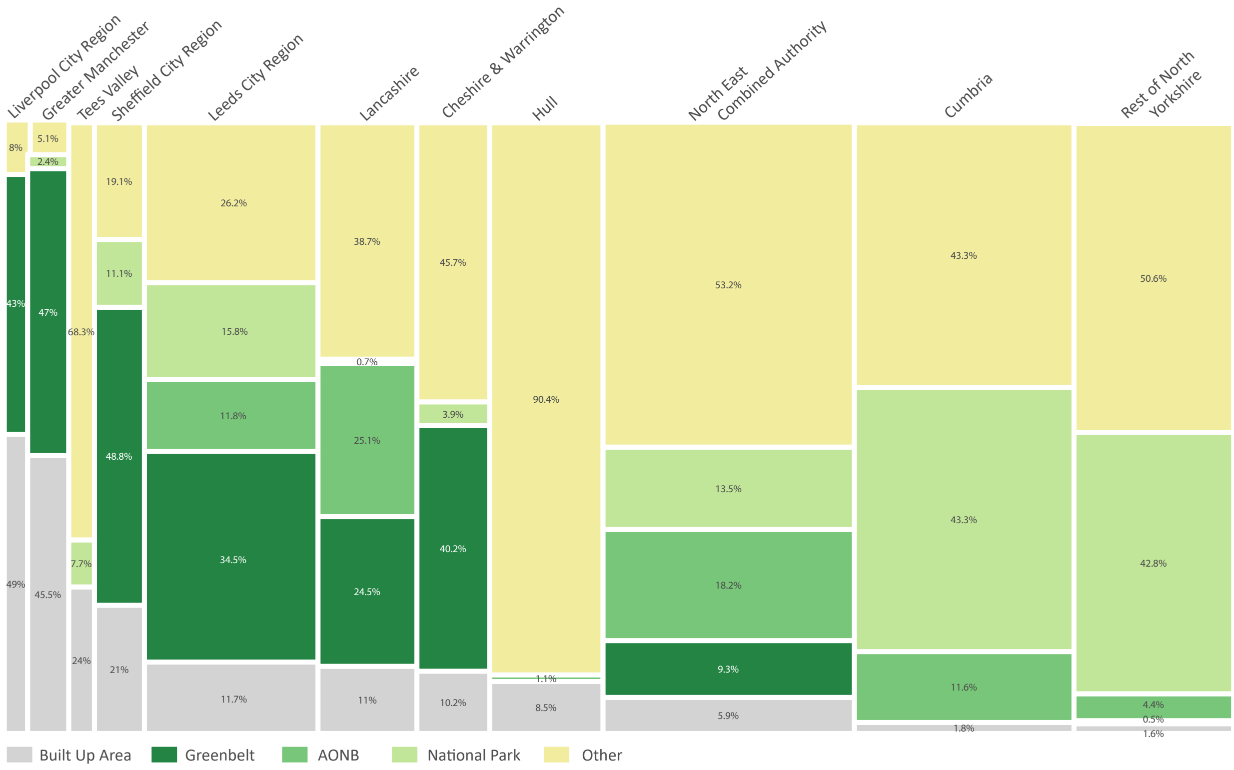
The North must play the right role in national growth strategy

Policies of successive UK governments have responded to high levels of demand driven by strong economic growth in the South and South East in particular to mitigate the effect of demand outstripping supply. National planning policy could now act as a brake on northern housing investment.

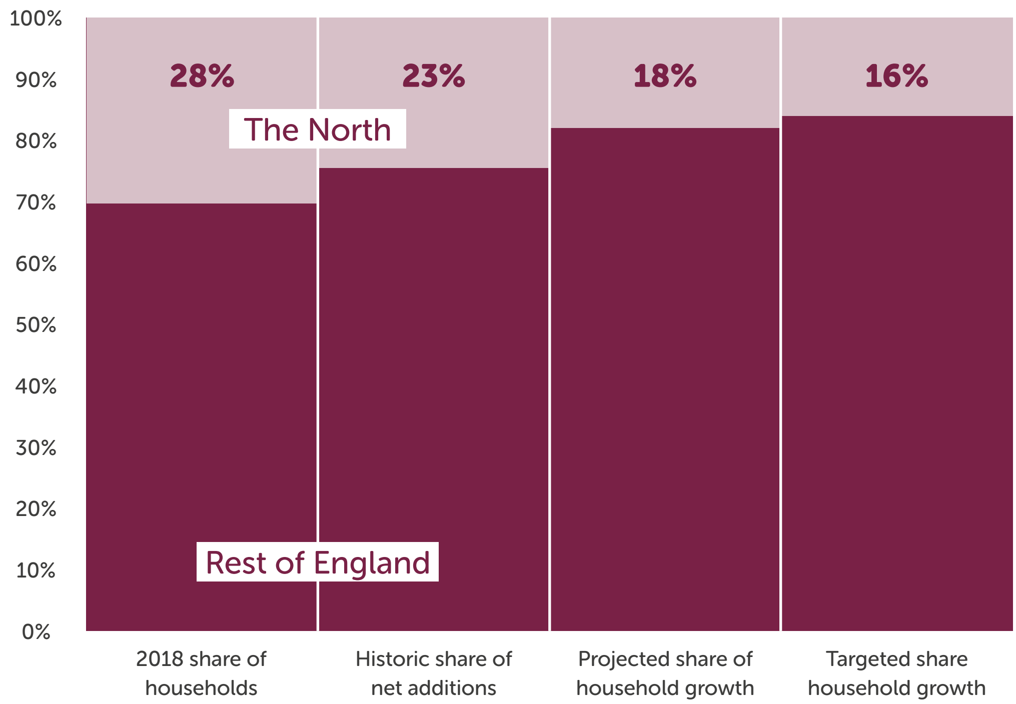
We propose an approach that would encourage sustainable and inclusive economic growth across the nation. There is huge untapped potential and capacity in the North, closing the productivity gap not only brings benefits to the North, but to the whole country.

"We have identified brownfield capacity for around 300,000 new homes across the North."

Land use by sub region



Baseline Northern household growth vs. the rest of England



Key Recommendations

To make this vision a reality, we need action:

- Housing will be a key enabler, alongside transport and skills, in unlocking northern economic and social potential and therefore needs to be recognised as essential infrastructure;
- For future investment in infrastructure, replace backward looking demand and affordability criteria with a more planned, long-term approach aimed at achieving sustainable economic growth;
- Social and private housing developers must work across the North to deliver the homes required to support this vision of an economic powerhouse;
- Pan-Northern collaboration across sectors will ensure integrated planning and investment.

Above all, the key message of this report is that if we are to succeed in transforming the North's economy, jobs, transport and housing will need to be planned together, in a collaborative way.

1. Research context: unlocking Northern potential

1.1 The North has unfulfilled growth potential

The North is home to around 1.1 million businesses, more than 7.7 million jobs, and over 15 million people, with population growth of 6.7%. The North's economy is around £343 billion, 19% of the UK total. If the North were a country, it would be the 27th largest in the world. However, despite these resources the North suffers from poor connectivity and this has left overall productivity trailing behind the UK average. For the last 30 years, the North's economic value per person (measured as GVA) has been consistently around 15% below the average for the rest of the UK. Most recent data reveals that gap has widened further, with the economic value (GVA) per person in the North now 18% below the UK average.

The success of the UK in the global marketplace and the success of the Government's Northern Powerhouse Strategy and Industrial Strategy depends upon transforming the economy of the North and building the right homes for future generations.

The 'Northern Powerhouse' initiative aims to address a set of long standing issues associated with persistent economic under-performance in the North of England. Impressive progress has been made in analysing the nature and causes of the productivity gap between the North and the rest of the country[1], particularly through the work done on the Northern Powerhouse Independent Economic Review (NPIER), as well as beginning to set out the strategy and investment needed to address this.

At the heart of strong regional economies, are strongly performing towns and cities. The benefits of a large economy are only achieved when combined with the concentration of economic activity in specific places, such as towns and cities. Therefore, the fundamental challenge for the North's economy is to improve the economic interaction between the key economic assets and clusters of the North to improve the sharing of knowledge, supply chains, resources, and innovation to drive agglomeration benefits and productivity.

1 The Northern Powerhouse Independent Economic Review, SQW Cambridge Econometrics, 2016

“If the North were a country, it would be the 27th largest in the world.”

Northern city regions have succeeded in developing dynamic, knowledge-based economies in and around their city centres and there are further areas of strength in a range of sectors across the rural North. A particular problem in many parts of the North, however, is poor connectivity, which has constrained access to employment, educational, leisure and social opportunities, particularly in ‘left behind’ northern towns. This has reduced the quality of life these areas offer and their attractiveness as places to live and work. In some cases this has contributed to a vicious circle of low investment, economic decline and sometimes severe social challenges.

Even the more successful parts of the North remain significantly less productive than London and their better-connected continental peers. In part, this is a result of northern labour markets remaining relatively small and fragmented, which is a legacy of their industrial history and chronic under-investment in infrastructure. Transport investment can begin to address these issues by growing the city regions’ effective labour market catchments and improving access to employment and other opportunities in the surrounding towns.

The Northern Powerhouse vision has identified a distinctive and coherent future northern offer, building on existing areas of economic strength, with clear sets of ‘prime’ and ‘enabling’ capabilities concentrated in different locations. The intention is to change the structure of the North’s economy through higher and better co-ordinated investment across a range of policy areas, and to increase overall employment – the trajectories for employment implied by the NPIER’s two scenarios are shown in Figure 1. This will help bigger, more integrated labour markets develop in the North and it is clear that this will have geographical implications upon where people will live and work and also therefore for patterns of daily movement.

Moving the North towards a more highly-skilled mix of employment is fundamental to improving productivity and strengthening the ‘prime’ and ‘enabling’ capabilities. Figure 2 shows the change in number of jobs by skill level (high, medium, and low) for each Northern region to 2050 under transformational growth, plus high-skilled workers as a percentage of total workers in 2050. All regions see major growth in high-skilled workers, with low-skilled employment falling in most Northern sub-regions.

Figure 1: Employment trajectories for the North under the Business as usual and Transformational scenarios of the NPIER

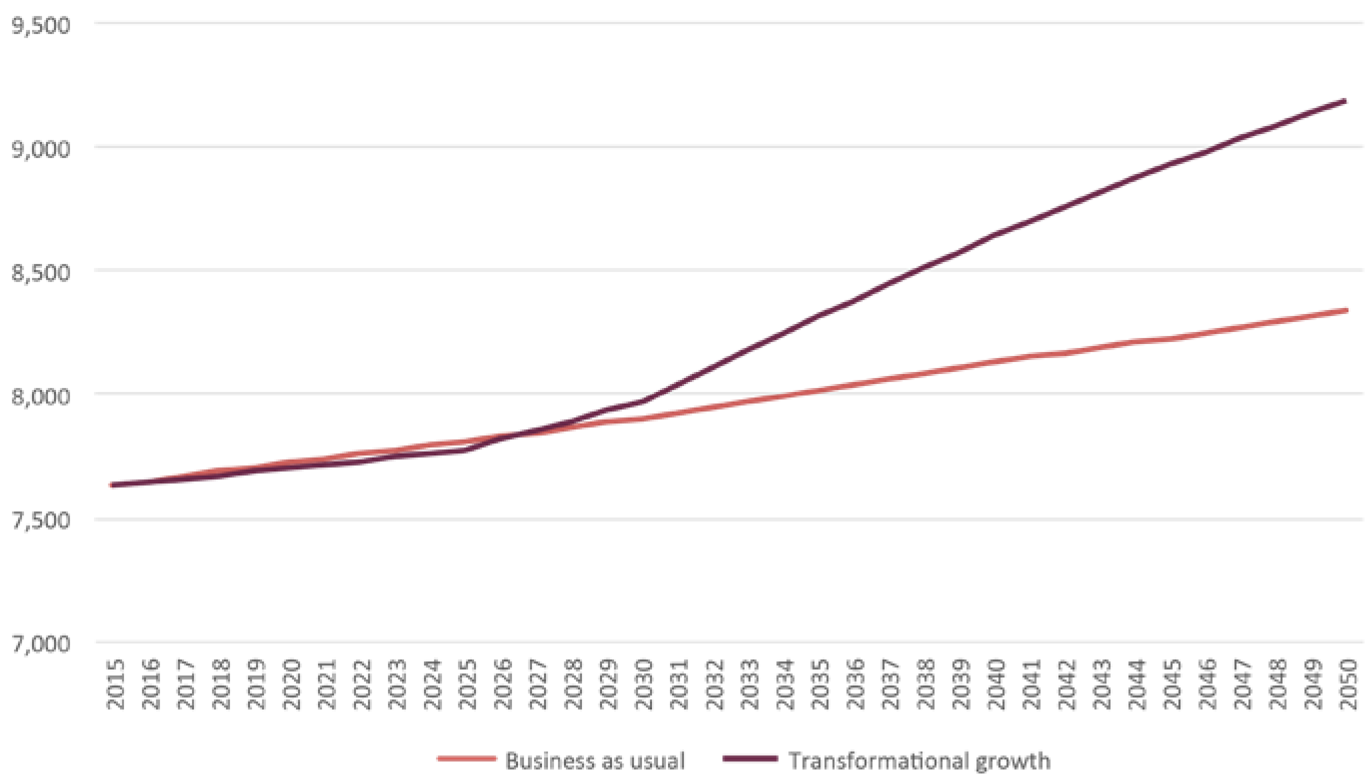
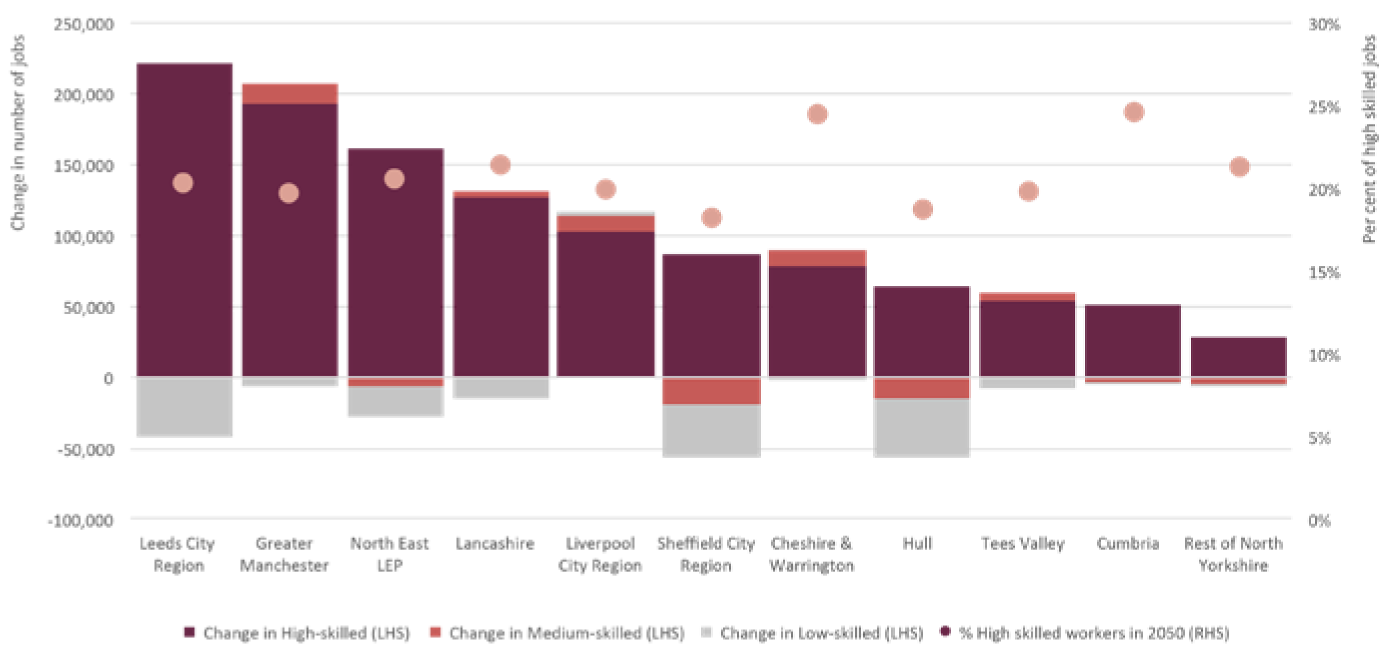


Figure 2: Change in employment by skill level and region, % high-skilled workers in 2050, Transformational growth



1.2 Transport for the North Strategic Transport Plan

Transport for the North (TfN) is the first statutory sub-national transport body in England, a partnership of 20 local transport authorities. In February 2019 it published its Strategic Transport Plan, an ambitious 30-year, £70 billion framework for transport investment to support inclusive, sustainable and transformative economic growth across all parts of the North through a more efficient, reliable, integrated, and resilient transport system.

An effective, efficient Northern transport network is a fundamental requirement for everyday life – connecting people and communities to jobs, health, education and leisure opportunities, connecting businesses to each other and employees; and allowing the efficient movement of goods and services.

Better connections at a pan-Northern level, particularly between the North's existing and future economic assets, will create jobs and generate growth. To realise the benefits of agglomeration, the North requires its networks of railways and major roads to provide effective, resilient and reliable connections. These connections should meet a series of conditional outputs or standards of journey time and frequency set by the North. Sufficient capacity will also be required to accommodate the increased passenger and freight travel demand that growth will bring.

Evidence shows that a step-change in economic growth in the North can only be achieved through significant improvements in transport connectivity between labour markets and economic assets, combined with increases in the skill level and productivity of the North's workforce. It will take a joint effort across public and private sectors to achieve its ambition of a transformed economy, but TfN is building a better understanding of current and future labour market and supply chain trends and how these will impact on transport demand.

Transport for the North's Strategic Transport Plan sets out an ambitious vision for how transport can support transformational, inclusive growth in the North of England through to 2050. The accompanying Investment Programme comprises TfN's advice to the Government on the long-term, multimodal priorities for enhanced pan-Northern connectivity. TfN recognises that it is the whole 'door-to-door' journey that matters. For the North's transport systems to work efficiently and effectively, it is crucial that pan-Northern road and rail networks are well integrated with local roads and public transport, recognising the continued important role local transport authorities play.

In order to meet the North's strategic transport needs and successfully deliver the Strategic Transport Plan, significant capital investment will be required between now and 2050. Recognising that further work is being undertaken on each of the TfN work programmes, delivering the interventions set out in the initial Investment Programme at current estimates will require a funding envelope of £60-70 billion. This scale of the investment is in line with the fiscal remit for the National Infrastructure Commission set by HM Treasury, which is benchmarked against other countries' commitment to strategic infrastructure, as set out in the National Infrastructure Assessment.

1.3 Putting housing at the heart of the Northern Powerhouse

The principle of joined-up planning for new homes and infrastructure has long been acknowledged at a national level and is mentioned as a key element of the Government's Industrial Strategy. This challenge is underlined when considering that projections for the North, which underpin the Government's housing need methodology, are significantly short of the transformational growth scenario set out in the Northern Powerhouse Independent Economic Review, which is underpinning the transport demand analysis and interventions within the Investment Programme.

TfN wants to continue to work collaboratively through existing partnerships and networks, such as in developing a Great North Plan, to ensure that there is long-term and co-ordinated strategic infrastructure investment in the North linked to these spatial planning priorities and associated infrastructure needs. TfN will also work with its partners to use the Strategic Transport Plan to support the case for strategic and local investment and how it supports priorities set out in spatial plans.

Part of the success of the Strategic Transport Plan and the Investment Programme will be how it supports sustainable settlement patterns and urban forms, and contributes to the creation of inclusive, healthy and productive spaces and places.

The success of delivering the pan-Northern transport objectives, which have non-transport elements and outcomes, depends on collaborative working. TfN will also provide its evidence base and Northern Economy and Land-Use Model (NELUM) model, as set out in the Analysis and Appraisal section of the Strategic Transport Plan, to support Local Planning Authorities as they develop their local plans and strategies. TfN also hopes there will be alignment with the implementation of the Strategic Transport Plan and the delivery of the Investment Programme. TfN currently has a remit to influence and promote strategic transport interventions, with the spatial development locations requiring joint working with combined authorities and groups of co-operating authorities as they develop Statements of Common Ground.

TfN's Strategic Transport Plan is central to realising the growth potential identified in the NPIER. It is clear, however, that if the full benefit of this investment is to be realised, people and places will need to be in a position to respond to it. For example, the workforce will need to up-skill, while investment in places will be needed so they can cater to a growing and more demanding population and workforce. Ensuring there is an attractive overall housing offer is an integral part of this response. Intervention is needed in housing markets to improve social and economic outcomes, and this should be a vital consideration for national and regional policy makers.

1.4 This research project

Homes for the North recognises that housing is an enabler in unlocking northern economic and social potential. This research was commissioned to investigate the role of housing in facilitating and unlocking the North's plans for higher economic growth and in particular the implications of the planned strategic transport investment. The aim is to provide a serious contribution to the evolving policy debate and help galvanise a coherent and integrated approach to strategic decision making at national, regional and local levels that will support the North in reaching its full economic and social potential.

We have built on both the NPIER and TfN's labour market analysis to estimate the nature and scale of additional housing required in the North, supplementing this with analysis using a range of sources including various demographic and labour market indicators, bespoke Census data on household composition and data on housing quality. We have provided our results at both a pan-northern level and broken them down to 11 sub-regions based on the main city regions and larger, more rural areas broadly corresponding to some of the larger existing counties. We have also analysed land supply constraints at these levels of geography.

"A series of nine stakeholder events were held to inform the research. These were attended by representatives of housing associations, developers, employers, and local government. Structured discussions provided valuable insights into local housing markets, economies, and growth aspirations. This perspective helped develop a view of housing requirements that is sensitive to more localised circumstances, rather than a 'one size fits all' approach."

2. The role of housing in unlocking growth

2.1 The inseparability of jobs, transport and housing

The realisation of an ambitious transport vision would expand the labour markets of major employment centres and the employment opportunities that can be accessed from presently poorly-connected locations. A transformational shift in employment, and in particular the growth in high productivity sectors, will shake the foundations of housing markets in the North. More people and higher incomes will represent an opportunity to investors, competition for aspiring first time buyers and even a threat to low income households who risk being 'priced out'.

Jobs, transport, and housing are fundamentally linked to one another – high employment densities and the agglomeration economies they support can only be achieved if workers are able to live within a reasonable commuting distance of employment centres. Transport connectivity shifts housing demand by allowing access to a wider range of locations that would otherwise be too remote, and enables ever-greater employment densities within the most important employment centres, enhancing productivity and competitiveness.

Quality of life factors are increasingly important in attracting and retaining a highly-skilled workforce, and the availability of high quality, affordable housing in attractive locations (including suburban areas) is one of the most important factors in determining an employment centre's quality of life 'offer'. Similarly, places that are perceived to be less attractive to live in may be trapped in a cycle of low investment with few opportunities, and housing quality may play a very significant role in this. In order to break the cycle, concerted and integrated long term action is likely to be needed, including improved access to employment centres. Increasing housing supply to maintain affordability in these and other areas will ensure that existing poorer residents are not priced out as a result of transport investment. Meanwhile, spending by well-paid residents who commute into cities can boost local economies and provide employment opportunities for locals.

“Jobs, transport, and housing are fundamentally linked to one another.”

Interactions between the transport system, quality of life, and labour market catchments for skilled workers are illustrated in Figure 3 on an imagined ‘commuting curve’. As the generalised cost (an amalgam of journey time, frequency, and monetary cost) of travel to a given employment centre such as a city - increases, willingness to commute from elsewhere decreases. Those living in or immediately outside the city centre will have the lowest cost of travel and the highest willingness to work. As generalised cost grows very large, willingness to travel falls towards zero.

The most highly-skilled workers – the attraction of whom is central to the Northern Powerhouse vision – typically travel further to access employment opportunities, in part due to higher earning potential and job quality. Therefore as the mix of workers in the North changes, we can expect a general increase in the willingness to commute longer distances.

Quality of life factors can offset a longer commute – a high quality of life (housing affordability or quality, amenities, local services, and so on) leads to a higher willingness to commute from a particular area. As such, the cost of travel alone cannot explain willingness to commute – but other things being equal as it increases, willingness to commute will fall. Therefore a reliable, affordable transport network is crucial in maximising to support increased employment opportunities.

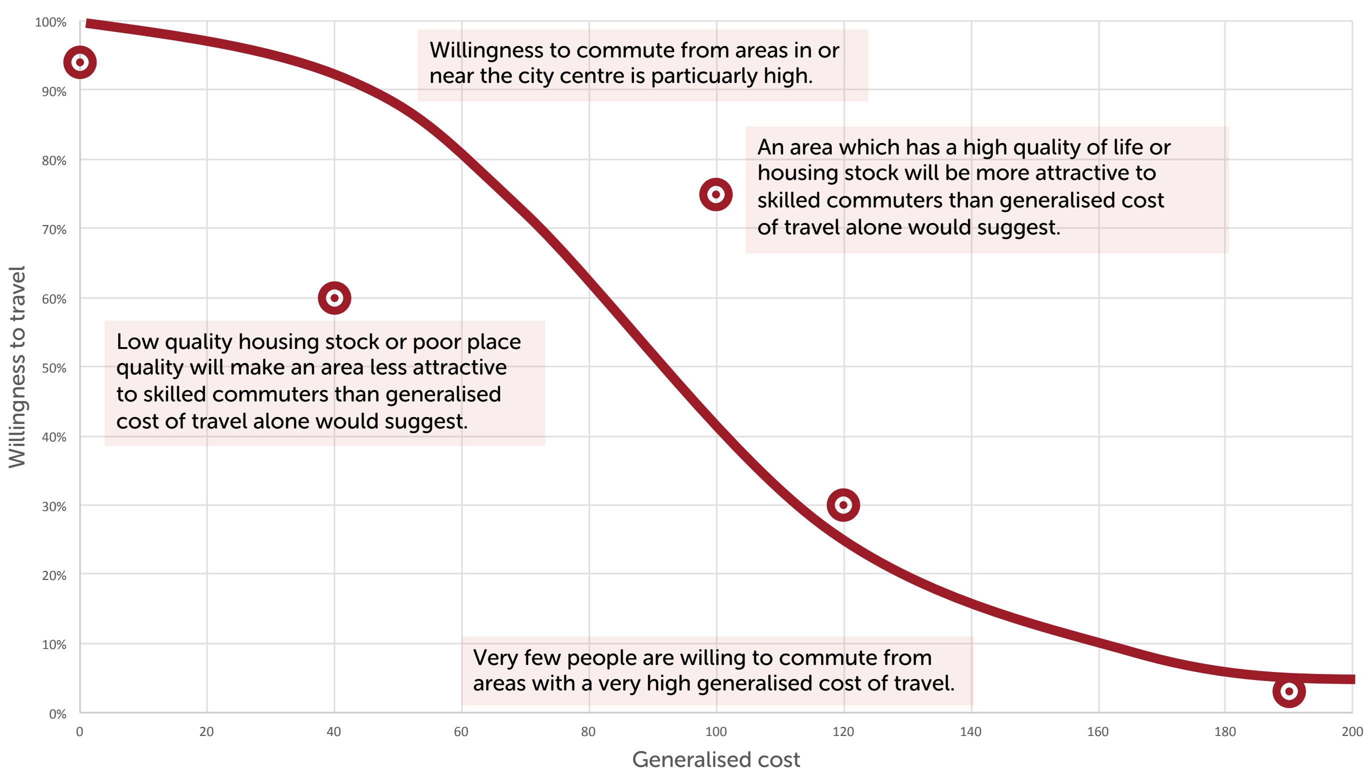
2.2 Current trends and the effect of government policy

The Northern Powerhouse Independent Economic Review's Transformational growth vision is about improving productivity, resulting in additional jobs, and therefore it is about people. The ambition for a step-change in economic growth and international competitiveness requires a larger and more skilled workforce. Increased workforce participation and up-skilling of the existing workforce can go some of the way to achieving this but the North will also need to attract higher numbers of skilled workers from elsewhere – for example, retaining more of the graduates its universities produce, many of whom currently seek employment outside the North.

Current trends, however, indicate that things are going in the wrong direction, as earlier work by Homes for the North[2] has shown. Over the past decade, 310,000 highly qualified British resident workers have left the North with only 235,000 moving in the opposite direction. Affordability and quality of housing and length of commute were identified as important factors in graduate attraction and retention.

The North currently has a lower proportion of working age people than the rest of England, and the proportion is set to fall as the population ages. While a few cities, such as Manchester, are seeing working age population growing, this is more than outweighed by the falls across the rest of the region.

Figure 3: A theoretical 'commuting curve'



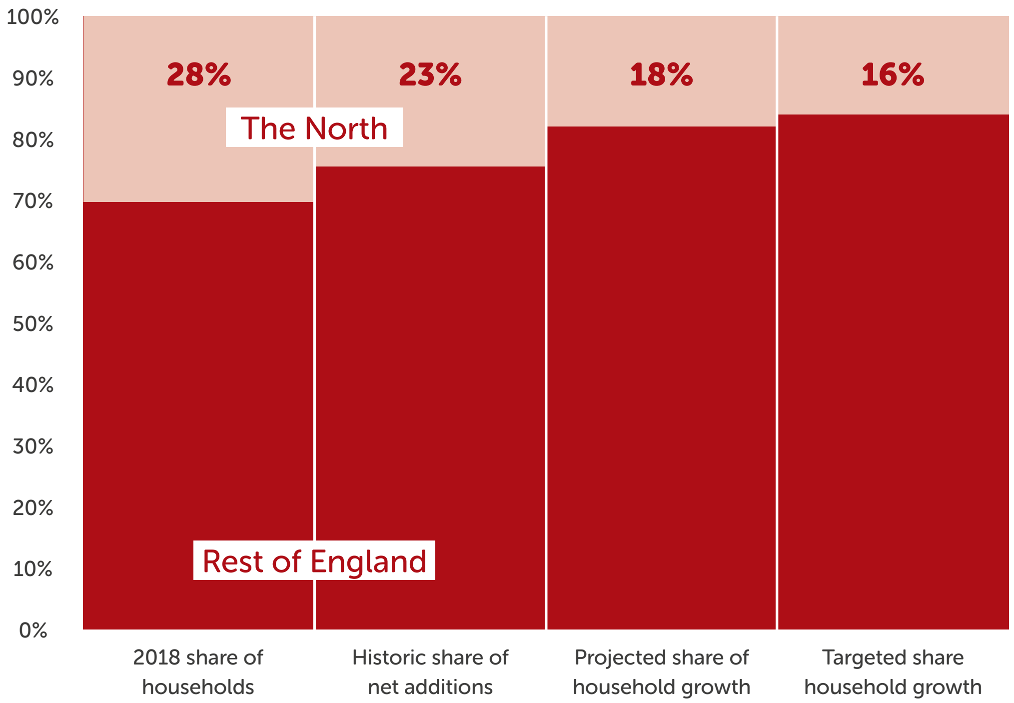
2 Brain Gain: The Role of Homes and Place Making in Attracting Graduates to the North of England, Homes for the North, November 2016, pages 5-6

The result is that, on current trends, even as the North's total population rises, its working age population is set to fall by 2% to 2041[3], while the rest of England's rises by 5%. At the moment, the workforce is effectively moving south, and this has to change if the Northern Powerhouse is to succeed.

This is why housing is so vital to the future of the North's economy. The locations in which workforce growth occurs will be determined by where jobs are found, but also the availability of housing. Figure 4 illustrates that while the North currently has 28% of England's households, over the last 10 years it has seen only 23% of England's housebuilding. Official ONS figures now project that the North will only see 18% of England's household growth, based on current trends. Far from a rebalancing to the North, current trends are still working in the opposite direction, with national planning policy reinforcing this further.

The Government's newly adopted Standardised Methodology for setting housing targets is designed to increase housebuilding, particularly in areas where affordability is worst. Over time, after transitional arrangements work through, the standardised methodology could increase housebuilding in the North to 44,200 homes a year, well up on the 38,500 average over the last ten years, although less than the 50,000 or so averaged in the last three years. Furthermore, the standardised methodology, if successful, would push up housebuilding even faster in the South, with the result that the North would see only 16% of new housebuilding.

Figure 4: Baseline northern household growth vs. the rest of England



2018 share of households projected share of household growth

3 ONS 2016 based sub-national population projections

3. What does Transformational change look like?

3.1 Calculation of annual housebuilding requirements

Transport for the North projected population and employment by local authority under the Northern Powerhouse Independent Economic Review's Transformational and Business As Usual (BAU) scenarios. The Transformational scenario is based on an ambitious economic transformation in the North, including substantial growth in skilled employment and the realisation of TfN's transport investment objectives.

These projections were used to estimate the North's housing requirements in 2050 and therefore annual housebuilding requirements by sub-region to realise the NPIER Transformational growth aspirations relative to BAU requirements and existing rates of net addition.

The figures produced are net requirements, i.e. constructions net of demolitions – therefore the number of dwellings built may need to be substantially higher, particularly if major regeneration programmes including demolition of existing stock are underway.

Assumptions made in deriving these results are detailed in 6.1 Methodology. Full results for TfN's Business As Usual and Transformational scenarios are included in 6.2 Dwellings stock analysis. Our analysis indicates that:

- As a whole, the North is building enough houses to accommodate BAU growth, but increases would still be required in some sub-regions even to meet this less ambitious target.
- To accommodate Transformational growth, the North needs to increase net housing additions from approximately 45,000 to approximately 65,000 per year between 2020 and 2050, with increases needed in all but the most rural sub-regions.
- By allowing for a gradual acceleration of housing growth as the transport investment plan is implemented and the labour market responds to it, we estimate around 50,000 net housing additions per year are needed in the period from 2020 to 2027, increasing to around 70,000 per year from 2027 to 2050.
- The total increases in northern housing stock required over the 2020-2050 period are 1.28 million for BAU growth and 1.94 million for Transformational growth.

The implications for housing requirements under the two scenarios vary significantly between the Northern regions:

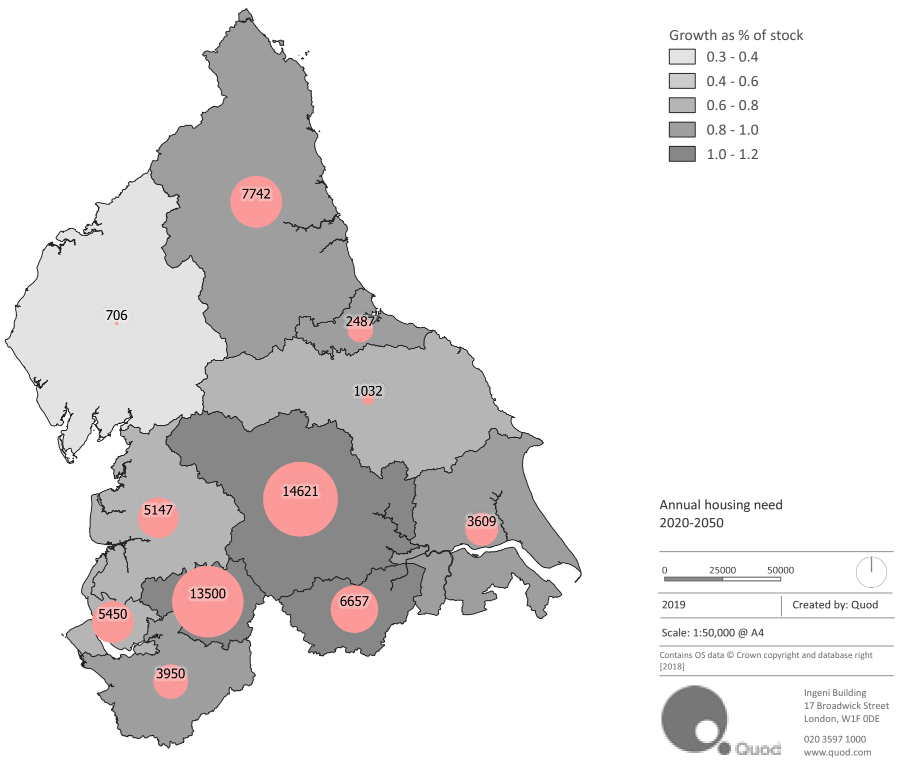
"We estimate around 50,000 net housing additions per year are needed in the period from 2020 to 2027, increasing to around 70,000 per year from 2027 to 2050."

“Positive housing growth conditions must be set ahead of 2027.”

- Substantial increases in net additions to stock are needed in Greater Manchester and Leeds City Region under either scenario.
- In the Transformational scenario, substantial increases would also be needed in Sheffield City Region, the North East Local Enterprise Partnership area, and Hull.
- Liverpool City Region and the Tees Valley have in recent years achieved levels of housebuilding nearly high enough to support Transformational growth – which is not to say that maintaining these levels for the future will necessarily be easy.

Transformational growth requirements by sub-region are shown in Figure 5. This shows both the number of net additions per year required, and how significant this requirement is as a percentage of that region’s existing stock. These are the annual averages which will be needed over the period to meet the transformational growth requirement of nearly 2 million additional dwellings in the North by 2050. Greater Manchester and the Leeds and Sheffield City Regions stand out as areas in which major increases in housing stock are required, and where these requirements are particularly large in relation to existing stock.

Figure 5: Average annual net additions required 2020-2050 to support Transformational growth; sub-regional breakdown including requirement as a percentage of existing stock

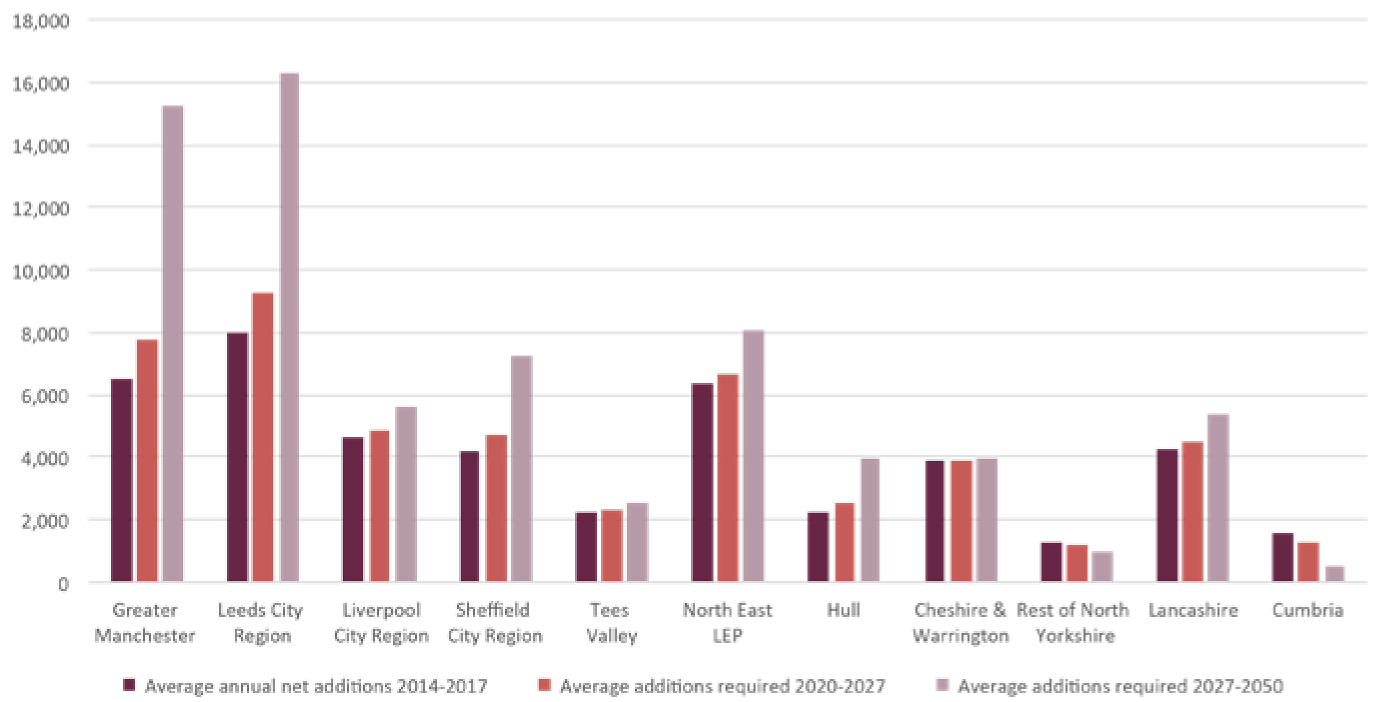


Even if it were possible to increase net additions to these levels immediately, this is not necessary or desirable: the process of Transformational growth will be slow to begin with, as the transport investment programme is ongoing, and excess supply could in itself be damaging. However, if the conditions for faster housing growth aren't set by 2027 (the end of the first phase of TfN's planned investment programme), housing will become scarce and act as a constraint on economic and employment growth.

We analysed what a more gradual acceleration in housing growth would look like for each of the 11 sub-regions, with average annual net additions growing[4] by a uniform amount each year to exactly reach the required number of houses in 2050. Resulting average annual net additions for the periods 2020-2027 (i.e. until the end of the first phase of TfN's planned investment programme) and 2027-2050 are shown in Figure 6, including comparison with 2014-2017 additions. Full figures are included in 6.2 Dwellings stock analysis.

"If the conditions for faster housing growth aren't set by 2027 housing will become scarce and act as a constraint on economic and employment growth."

Figure 6: Average annual net additions to support Transformational growth; smoothed growth by sub-region; 2020-2027 and 2027-2050; compared with actual average annual net additions 2014-2017



4 In the case of the more rural regions of Rest of North Yorkshire and Cumbria, which are already building more than enough houses, growth in average annual net additions is negative.

4. Choices and challenges for the North

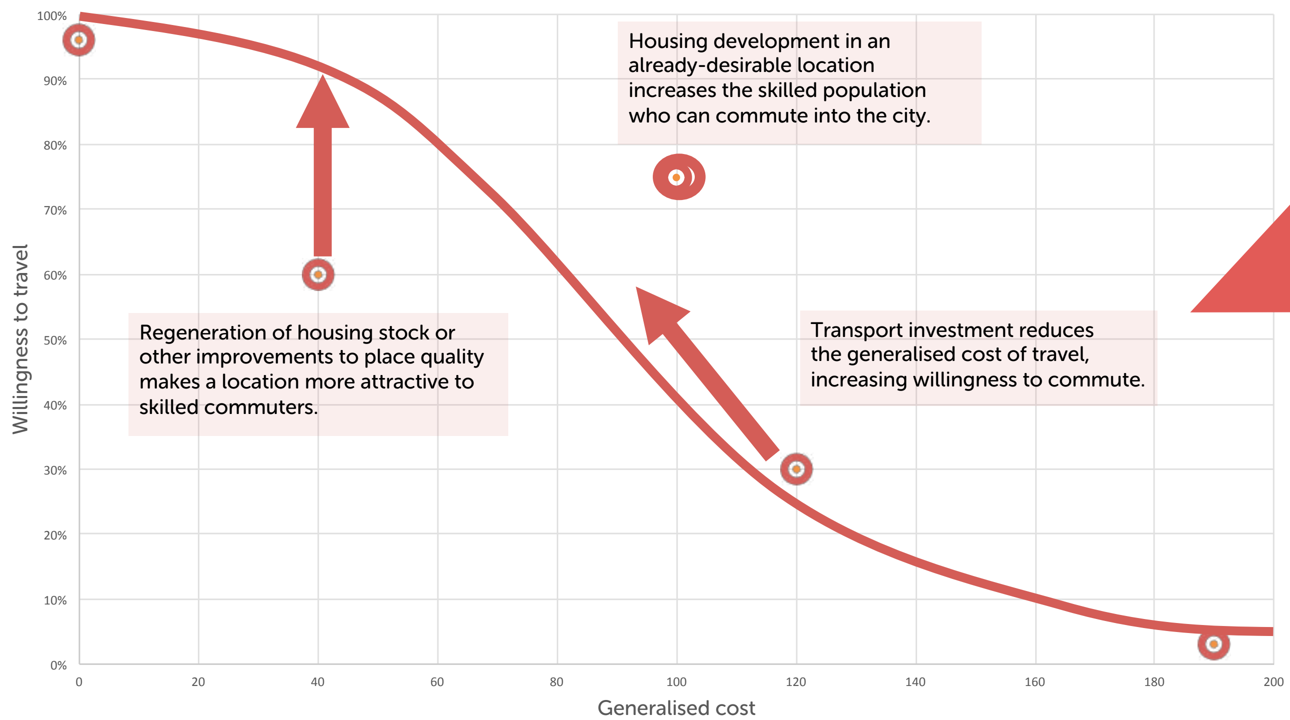
4.1 Choices for growth

In this section we examine some of the relationships between improving the transport system, improving the North's quality of life 'offer', and growing labour market catchments. Three ways in which policy interventions can expand an employment centre's labour market catchment in order to expand total employment and enhance productivity through agglomeration are:

- Improving the quality of life offer of relatively less desirable areas, for instance through regeneration of the housing stock, thus making them more desirable as a place for highly-skilled workers to live.
- Developing more houses in areas which are already desirable and well-connected, expanding the number of people who can live in them and commute in to cities.
- Investing in transport networks to increase the proportion of an area's residents willing to commute, due to a shorter, cheaper, or more reliable journey by road or rail.

These are illustrated in Figure 7, which builds on the idea of the commuting curve introduced in Section 2 above.

Figure 7: A commuting curve, and how policy interventions can expand labour market catchment areas



“Pan-northern policy is not about a ‘one-size-fits-all’ approach.”

This shows the importance of ensuring that strategies are locally-informed to address the central goal of expanding the effective labour market catchments of major Northern employment centres, i.e. linking the local transport network to the strategic. Pan-northern policy is not about a ‘one-size-fits-all’ approach but about infusing local strategies with a wider strategic dimension to boost the North’s economic performance and find the most appropriate housing and transport response to boosting economic performance in each case.

This study has analysed where housing demand will grow by sub-region, but there are choices to be made about exactly where and how this growth in demand will be met.

The analysis is based on existing economic and labour market forecasts and connectivity analysis commissioned by TfN alongside transport modelling undertaken by TfN itself. The housing to meet this demand is driven by the location of jobs and transport investment but will also respond to policy and planning. The North collectively, may choose to focus growth in urban areas, in satellite towns, or along transport corridors – with each approach bringing benefits and costs.

An important consideration is the high proportion of the North that is protected land. Built up areas make up only 9% of the North, whereas National Parks and Areas of Outstanding Natural Beauty make up 29%. A further 16% is designated green belt, and this is in areas where pressure for housing is likely to be greatest.

Ensuring integrated planning of housing and transport

In both the Greater Manchester & Lancashire and Liverpool discussions, the need for inter-city connectivity was stressed – despite their geographical proximity, workers find it hard to live in, say, Manchester and work in Leeds or Liverpool (or vice-versa), with consequences for effective labour markets and agglomeration. Ensuring the North can offer high quality opportunities for high-skilled couples, who typically work in different sectors, will be an increasingly important competitiveness factor. Improved transport connectivity will expand the range of residential locations that can offer good access to a large number of high quality jobs in different employment centres. This will enable the North to address one of the key challenges that its fragmented labour markets have posed relative to London.

The need to ensure good connectivity within as well as between the sub-regions was stressed in locations such as the Tees Valley, which was felt to have relatively under-developed urban transport. Stakeholders in South of Tyne highlighted the importance of high quality bus services. This illustrates a broader point about the importance of improved urban travel provision alongside strategic inter-city connections. For major employment opportunities like the International Advanced Manufacturing Park now under construction, good transport access will be crucial but it was felt that this is being addressed too late in the planning process.

Distinctive points were raised outside the city regions, where transport investment needs are different from those of densely-populated urban areas. Cumbria is home to industries, such as nuclear power, which require high-skilled workers, but poor connectivity can make attracting them difficult. Improving links between south Cumbria, an area attractive to workers seeking an outdoor lifestyle, and the growing manufacturing areas in nearby Lancashire is considered important, and stakeholders welcomed TfN's plan to connect the North's 'energy coasts', feeling that this will stimulate growth and make it a more desirable place to live.

Figure 8 shows these land uses by sub-region. The width of the bars is proportional to the physical size of each area. It illustrates how much of the North that is not already built-up is protected land, particularly in the smaller city-regions where much of the economic growth is expected.

The options are to grow existing cities outwards, intensify them within their current boundaries, or to allow growth across a wider area, in surrounding towns. A combination of all three is likely, but there are important strategic choices to be made about how intensively to pursue each option.

Since these approaches will all have impacts that extend to communities outside their boundaries, these would ideally be pan-Northern decisions.

If towns and cities are to be allowed to grow outwards some hard choices around changes to the green belt boundary may be needed. This could help consolidate fragmented urban areas, but can it be done in a way that minimises the environmental and landscape impact?

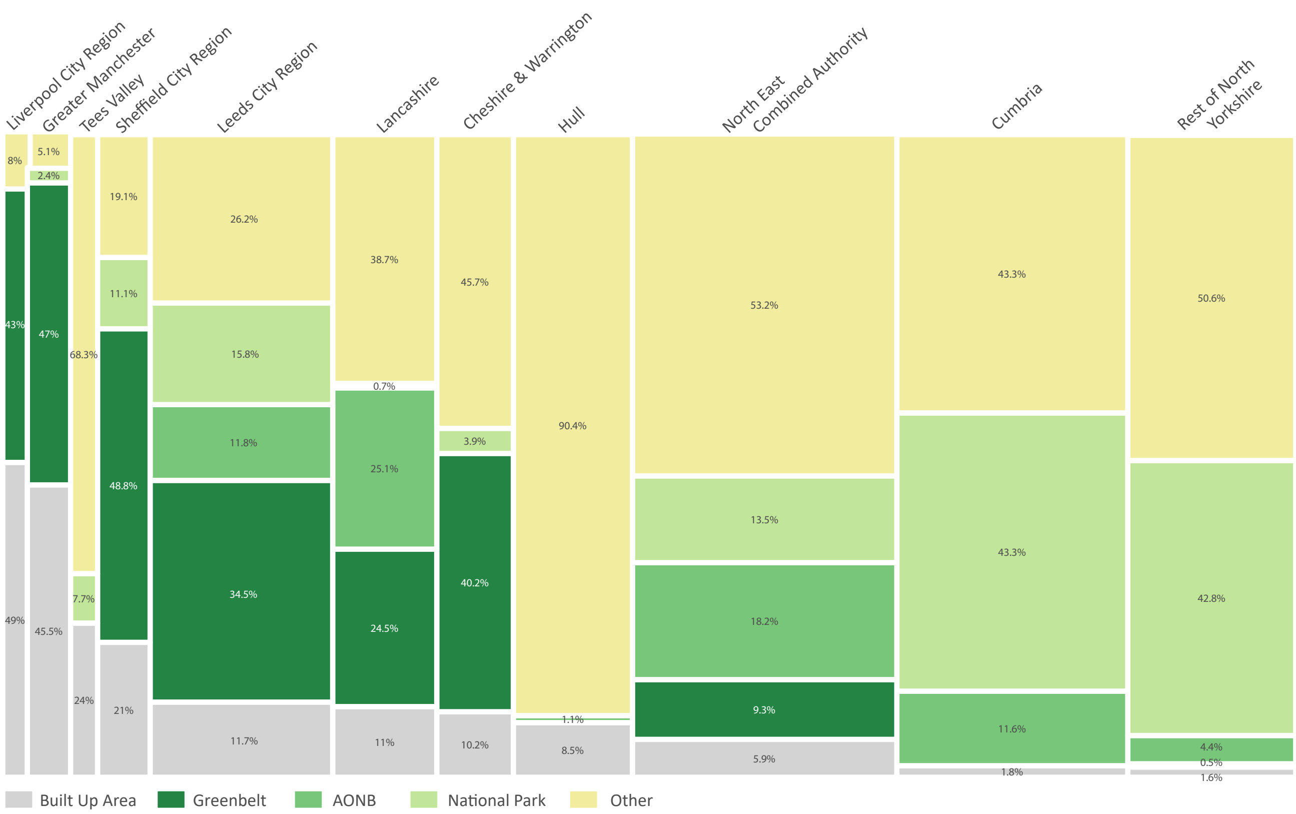
Rethinking the green belt

The potentially controversial issue of the green belt came up at some of the stakeholder events, a growing population means that local authorities are struggling to deliver the housing targets in their local plans. In both Sheffield and West Yorkshire & Hull, the need to have a conversation about the quality of land designated as green belt was raised – some of it is not in good condition and could be used for housing development. On the other hand, the lack of green belt in locations such as Tees Valley was seen as contributing to the 'doughnut' effect in which hard to remediate land and struggling communities in inner areas remain stuck in a low investment cycle of decline, while areas on the edge of towns see urban sprawl.

If growth is to happen beyond the green belt instead, it will put people further from jobs, and is likely to mean even greater investment in transport. But doing so could help spread the economic benefits of growth to towns outside the main cities, which might otherwise continue to struggle.

Or if cities are to grow within their current boundaries, that investment can improve urban environments, and make the most of existing infrastructure and transport. But it also means accepting more tall buildings, and is likely to need public investment to unlock difficult brownfield sites as well as investment in urban transport and other infrastructure.

Figure 8: Land uses by sub-region



Integrating 'left-behind' towns in the Northern Powerhouse vision

The challenges facing struggling towns and the opportunities that could be realised from addressing them were raised by stakeholders across the North. Wider trends – the growth of online shopping and out-of-town shopping centres – have resulted in town centres losing their traditional retail role. Underinvestment has also affected towns – in North of Tyne, an example was given of land on the green belt around a town being developed quite extensively, while core areas experienced decline and emptying, leaving it relatively underpopulated. Transport connectivity between towns and cities could stimulate town centre housing development for city workers, and provide opportunities for the construction of housing aimed at elderly people with good access to public services and leisure. These residents would stimulate town centre economies, while larger properties could be freed up to provide more family accommodation.

Brownfield land analysis

We have analysed more than 5,000 brownfield housing sites across the North. They are generally well-located, within the towns and cities where employment is expected to grow, and close to existing transport networks. Together they have an identified capacity for around 300,000 homes. That's between four and six years' worth of future growth as identified in our annual housebuilding requirements, but it will take much longer to realise that potential.

Brownfield development is complex, slow and expensive. It may need substantial public subsidy for land assembly, decontamination, or transport improvements, but in the long term it can hugely enhance the surrounding area, bringing life back to neglected neighbourhoods and stimulating further investment. The subsidy that is available is distributed according to standard appraisal methodologies, which are themselves backward-looking, based on existing land values. Therefore, the North currently loses out.

Capturing the benefits of land value uplift

A desire to improve local authorities' abilities to realise the benefits of land value uplift was raised at several of the stakeholder events. At the West Yorkshire & Hull event, stronger Compulsory Purchase Order (CPO) powers and a land value tax were suggested. Other ideas include more frequent council tax band revisions to better reflect changing property values e.g. through improved transport connectivity. Policies such as these could see councils fund land remediation and unlock more development in sustainable locations (including on brownfield land), providing new revenue streams for housing development and regeneration. This could also help accelerate much needed housing and stimulate wider investment.

4.2 The right housing mix

The Transformational growth envisaged by the NPIER will not only grow the population, but change its demographics and therefore housing needs. The additional population growth attracted by more and higher-skilled jobs will be disproportionately in younger age groups and more affluent households. Ending the southwards "brain drain" would make the demographics of the North more closely resemble those of the South.

The North's housing varies greatly at a local level, and different places will have very different housing needs. At the moment, the housing mix does not match that in the South, and in some respects that will need to change. This research has identified two main shortfalls across the North as a whole, relative to housing markets in the most prosperous parts of the country.

The first is in private-sector city centre apartments. In some of the North's most successful and growing cities this type of housing is booming, but it is by no means universal. Overall, only 15% of the North's housing stock is flats, compared to 24% in the rest of England, and the gap has been growing. In the ten years up to the last Census most of the growth in purpose-built apartments was in the rest of England. This is not just about the size and affordability of homes, but also location. There has been a consistent trend (not just in the UK) towards a return of city-centre living, particularly for younger skilled workers, for whom the attractions of a lively urban environment and short commutes can outweigh the benefits of more spacious suburban living. Of course, flats are not the only means of offering relatively compact dwellings with ready access to city-centre employment and leisure opportunities – smaller houses in regeneration areas near city centres could also be attractive with improvements to local transport and amenities.

If the Northern Powerhouse is to offer the jobs that will retain or attract graduates and young skilled workers, it will need to have housing that can do the same. As the economy grows and transforms, more city centres will need to adapt to provide the exciting, high-quality living environments that people want, with immediate access to a wide range of leisure opportunities and services.

Developing affordable, quality city living

With knowledge-intensive jobs at the heart of the Northern Powerhouse, there is a danger that city centre property markets will overheat. Stakeholders at the West Yorkshire & Hull round table said that this is starting to become a problem in Leeds, and that planning homes around better transport into the city is key to solving the issue. Further densification of city centres was raised in Liverpool where the current density is relatively low. The need to densify in a way that does not compromise the city's distinctive heritage and architecture was stressed, however – a skyline dominated by soulless high-rise developments would likely meet with opposition. Strong emphasis was placed on the importance of ensuring high quality development that enhances the 'sense of place' offered by the city.

The second shortfall is in larger high-quality family houses. Again the demand for this will be driven by employment growth, and a shift towards higher-skilled sectors means more affluent workers in the North. Many of the more experienced workers will want family housing, and they will be looking for larger, high-quality homes in attractive neighbourhoods.

The housing stock in many of the North's urban areas does not provide enough of this, with fewer detached houses, and fewer homes with more than three bedrooms, compared to the rest of the country. In many places, this means skilled workers needing to commute in from surrounding villages.

Census data shows that while the household size does not vary much by level of skills of workers, dwelling size does. Nationally, 30% of high-skilled workers live in four or five bedroom homes, compared to under 15% of low-skilled workers, as shown in 6.5 Skill levels and housing demand.

For a larger, more prosperous and more balanced economy, the North's towns and cities will need to ensure they have the housing stock to retain and attract a growing number of affluent families.

Unlocking family housing and better meeting the housing needs of an ageing population

Stakeholders in Cheshire raised the issue of family-sized homes lived in by older people who no longer need them, but face a lack of viable and attractive alternative places to live. There is an acute shortage of housing for professionals in the county with significant daily in-commuting; so freeing up existing housing is seen as a priority. Stakeholders in Sheffield and Cumbria felt that, in the context of the UK's ageing population, insufficient attention was being given to housing for the elderly. Bungalows are popular but represent an inefficient use of space. A solution could be high-quality, purpose-built flats aimed at the elderly. Were these located in town and city centres, they could provide ready access to leisure and public services – particularly important for those who lack access to private transport.

Realising the economic opportunity of coastal towns

Stakeholders in the Tees Valley and elsewhere mentioned the role of seaside towns in meeting some of the demand for housing for higher skilled workers. Places such as Scarborough and Blackpool have underperforming economies, with high rates of economic inactivity. They have in fact seen population growth but, rather than being employment led, this is the result of low income people from elsewhere being attracted to the plentiful, cheap accommodation they provide.

The lack of opportunities these locations offer such people has resulted in significant concentrations of deprivation and social problems. These towns also have stocks of large houses, which could be particularly attractive to skilled workers given their coastal location – if connectivity to employment centres could be significantly improved. These areas could therefore deliver major benefits: the unlocking of housing for highly-skilled workers would support wider growth ambitions, and existing residents of these coastal towns would see improved employment opportunities – both from greater access to employment centres elsewhere and from commuter spending supporting local economies.

4.3 Low demand

Rather than a shortage of supply, some areas of the North continue to suffer from a lack of demand, with low occupancy despite low prices. There can be multiple reasons for low demand, but common factors include poor quality housing stock (or stock that does not suit the market), an unattractive or under-invested local environment, and poor accessibility to services and employment. There can also be a "path dependency" whereby historical factors made a neighbourhood unattractive, and a critical mass of new residents would be needed to break out of that pattern.

It is important to distinguish different types of low demand areas. In some, the location or type of housing may mean there is little prospect of recovery, but in many what is missing is the demand that comes with prosperity and access to jobs.

If TfN's Strategic Transport Plan and the plans of Local Transport Authorities can reconnect housing to employment, and the NPIER Transformational growth can be realised, there will be a tide that can refloat many neighbourhoods, bringing investment and new demand. We have identified the areas facing challenges of low demand using average house price data by postcode sector – the results are mapped and described in appendix 6.4 The geographic incidence of low demand.

Low demand areas not only represent a waste of resources, but also a social cost to those who still live in or around such area. In absolute numbers, such vacant or under-occupied homes represent a very small proportion of the overall housing market in the North, however locally they can be very significant. In building new homes, it is important to plan carefully to avoid undermining the recovery of low demand areas.

But at the same time, it is also important to recognise that low demand for some types of housing in some locations does not remove the need for new housing of other types or in other locations. Indeed in some situations, new housing can itself help revive low demand areas, by bringing activity back, and helping to create a more attractive local environment.

It would therefore be risky to assume that vacant or under-occupied homes of some types in some locations mean that new homes are not needed for growth. Census data shows only 4.4% of homes in the North are vacant, not much higher than the 4.2% in the rest of England, and a fall compared to the previous Census. A proportion of homes will always be vacant at any one time, as a natural feature of turnover in the market, and indeed if vacancy is too low it can be a sign of a constrained market. In some areas, such as Cumbria, higher vacancy rates reflect tourist accommodation that is important to the local economy. Low demand can also show itself in under-occupancy, and the North has a marginally higher proportion of under-occupied homes (35% with Census bedroom occupancy rating of -2) compared to the rest of England (34%), although this is mainly due to the particularly low levels of under-occupancy in London. At a regional scale it is wider affordability issues, rather than localised failures in housing markets, that drive these differences. The issue of low demand housing is largely a localised phenomenon, a serious problem that needs tackling, but which does not remove the need for new homes elsewhere in the North where demand is high and growing.

4.4 Housing quality

An issue that is related to low demand, but more widespread across the North is poor housing quality. Compared to the rest of the country, the North's housing stock is on average smaller, older, less well insulated, and more likely to fail decent homes standards. Investment in social housing has improved the quality of many homes, but more investment is needed in lower quality private housing too. Detailed analysis of northern housing quality is included in the appendix to this report: 6.6 English Housing Survey analysis and 6.7 Energy Performance Certificate data analysis.

Although much of the required investment will occur through households becoming more prosperous and exercising their own choices through normal market channels, there are some challenges that may require more planning and concerted intervention. In some cases, demolition will be needed as part of renewal, and replacing older stock with newer homes can improve quantity but also density. Demolitions across the North in the last 5 years averaged around 3,850 homes a year, equivalent to one home in every 1,780 being demolished. This is slightly higher than the rate for the rest of England (one in 2,390), but it is likely to have to rise further if renewal, investment and higher densities are to contribute to supply.

Demolition, regeneration, and 'Decent Homes 2'

Stakeholders across the North were frustrated that regeneration to improve the quality of existing housing has become more difficult to fund, and there was widespread enthusiasm for a second 'Decent Homes' programme. For example, in the South of Tyne round table it was noted that Sunderland has 40,000 houses over a century old, and the city is dominated by old, small, and poor quality housing, which creates difficulties in attracting high-skilled workers to live there – for example, it was said that 60% of managers at Nissan commute in, meaning many of the economic benefits of the plant are not felt in Sunderland itself. Existing stock can't be ignored, as poor-quality housing can affect overall perceptions of an area and inhibit investment.

Money needs to be targeted however – Decent Homes was an expensive programme and regenerating all run-down estates in the North is unlikely to be feasible in the short to medium term. Tees Valley stakeholders stressed that regenerating an area is about more than the physical housing stock – places need to be regenerated in a wider sense to become more desirable, through cleaner streets and crime prevention for example. The high costs need to be considered in relation to the social and economic costs of doing nothing, in which urban decay can take hold. In some locations there is evidence of a 'doughnut effect' in which inner areas are increasingly isolated and separate from more prosperous outer suburbs, with an 'insider-outsider' housing market emerging.

4.5 Affordable housing

Housing in the North is relatively affordable compared to London and the South, but there will always be those who are not able to access market housing at all. The number will grow as the population grows, but also includes a backlog of existing "hidden-homeless" households.

Work by Heriot-Watt University for the National Housing Federation[5] estimated that to clear this backlog would require around 18,800 net additional affordable homes a year in the North for 15 years. Of these, 37% would need to be social rent, 27% shared ownership, and 36% intermediate rent. The NHF research broke the figures down by northern region, forecasting that 58% of the North's affordable homes would be needed in the North West, 29% in Yorkshire and Humber, with 13% in the North East. The breakdown of their northern housing need estimate is illustrated in Figure 9.

If this were to be achieved it would contrast starkly with recent years where the overall number of affordable homes in the North has actually fallen, as sales and demolitions outpace new provision. Between the last two Censuses, affordable housing stock in the North fell by 82,000 or 6% even as the total number of households rose by 7%.

For a significant increase in affordable provision to be possible, a new approach would be needed. In some northern housing markets there is scope for some cross-subsidy from market homes to support affordable development. However, the scale envisaged by the NHF research would almost certainly require substantial additional public grant.

The NHF's estimated need for 18,800 affordable homes a year across the North was part of a total estimated housing need of just under 50,000 homes a year in the North, which is in line with the business-as-usual analysis carried out for this report.

It is also in-line with the early years (up to 2020-2027) for the Transformational scenario, before investment sees economic growth picking up pace.

Faster employment growth will raise demand for housing further, but this will be largely in the private sector – both owned and rented. In some parts of the North, market housing is already expensive for many people. But even where housing is relatively affordable, the quality and variety can be often be poor. As employment growth pushes up housing demand, the price of good quality housing could rise significantly unless supply keeps pace.

Housing supply is inelastic, and responds only slowly to demand and prices, partly because it is controlled through planning. If the Northern Powerhouse starts to generate significantly higher labour demand, then there is a risk of replicating the problems of housing undersupply, unaffordability and overcrowding that are seen in the South. This in turn could easily choke-off growth and make Transformational change ultimately unachievable. A central message of this report is that housing supply must be planned alongside economic growth if the Northern Powerhouse vision is to be realised.

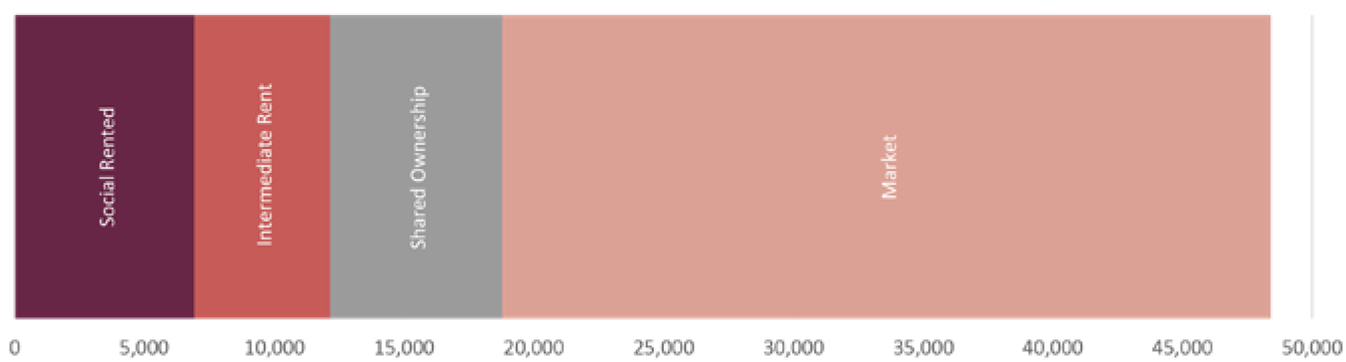
4.6 Elderly people's housing

The UK population is ageing rapidly, even more so in the North than the South. Faster economic growth will mitigate this to a degree – more jobs will attract and retain more young adults – but this will not halt the rapid rise in the elderly population. This has implications for housing that are not yet fully understood.

Currently 3.3%[6] of people over the age of 65 in the North live in care homes or nursing homes, with the proportion rising rapidly with age – for those aged 85 and over the figure is 14.6%. Full figures in Table 1.

If the proportion of elderly people living in communal establishments remains the same, then the North as a whole will need nearly 100,000 additional nursing or care home beds by 2050, more than doubling current provision to accommodate a rapidly growing elderly population. That would equate to around 5% of all net new housing.

Figure 9: NHF estimates of the North's annual housing need



5 Housing supply requirements across Great Britain: for low-income households and homeless people, NHF, 2018

6 Census 2011

However, this scenario may be unlikely. In recent years the number living in this type of accommodation has barely grown at all, despite the ageing population. One reason may be the cost of such facilities, but also a positive preference for living at home into old-age. Housing will need to reflect such changes as they evolve. One part of the solution may be new purpose-built city-centre apartments. These can appeal to older residents for the same reason they appeal to younger people – the convenience of having a wide range of services right on your doorstep.

This report does not forecast how elderly people's housing choices will change by 2050, but in planning for growth we must be ready to respond to significant demand from elderly people, and should not assume that the number in communal establishments will rise in line with the population.

4.7 Student housing

The North benefits from a large number of top universities, drawing people to study from across the UK and beyond. The university sector has grown, and with it the demand for student housing.

The 2011 Census recorded over 670,000 full time students in the North, 29% of all students in England. This is an increase of 230,000 in just ten years. The national average number of people in student-only households is 2.5, so this equates to an additional 9,000 dwellings a year for students.

The degree to which this growth will continue depends on future policy, including funding and immigration rules. Growth in demand for student housing is not dependent on the success of the Northern Powerhouse, although a drive for a higher productivity workforce is likely to increase demand for higher education.

The housing numbers presented in this report are driven by jobs, not student growth. But purpose-built student accommodation still has an important role to play in creating housing capacity by reducing the conversion of family homes into student shares.

Table 1: Communal housing for elderly people in the North (2011 Census)

Age	65-74	75-84	85+	All 65+
Total population	1,330,833	845,880	318,498	2,495,211
In nursing home	4,358	11,922	18,007	34,287
In care home	5,016	14,956	28,616	48,588
% in communal home	0.7%	3.2%	14.6%	3.3%

5. Conclusions and recommendations

5.1 Conclusions

Our research has shown that housing investment needs to be treated as a vital element in the overall strategy for delivering the Northern Powerhouse vision. Some important themes have emerged:

- Housing will be a key enabler, alongside transport and skills, in unlocking northern economic and social potential and therefore needs to be recognised as essential infrastructure;
- Two million homes will be needed across the North by 2050. This breaks down to around 50,000 a year up to 2027, then an increase in pace of delivery to around 70,000 per year until 2050;
- Housing supply is inelastic and it is therefore slow to react to changing economic circumstances. In light of this, the 'predict and provide' approach to planning should be replaced by an approach that is similar to TfN's in planning the future transport system, i.e. one based on 'vision and validate';
- More and better housing is needed if the planned transport investment is to fully unlock the economic potential of the North, i.e. bring about a shift to a higher skilled, more productive economy. Without joined-up national and regional policy, quality of life will be adversely affected and growth momentum held back. In the long term this will generate costly social dislocation;
- Transport investment increases the range of choices available for meeting emerging strategic housing needs. This includes unlocking new housing but also better linking existing housing to areas with high quality employment opportunities. This will help spread future prosperity to areas that might otherwise be left behind;
- There is a strong case for integrating policies focussed on economic growth, the regeneration of towns, sustainability and quality of life. In this context, decisions about housing provision cannot be left to market forces alone.

5.2 Recommendations

A number of policy implications follow from the research, set out below, and together they support the case for a pan Northern approach to infrastructure planning, including housing.

Choices for growth

- The government's approach to housing needs to be integrated with its own regional and industrial policymaking. As well as the backward-looking measure of Objectively Assessed Need (OAN), housing targets need to reflect the transformative Northern Powerhouse vision and enable the North to play a leading role in the UK's future economic growth;
- Recognising the limitations of crude national targets, the appraisal of government funding programmes should be enhanced to avoid simply directing funding towards areas with high existing land values;
- There should be greater feedback between emerging housing requirements and the planning of future strategic infrastructure requirements. For example:
    - urban transport investment to unlock sustainable city living at higher densities;
    - better connectivity to towns that could play a role in housing city workers, including higher skilled workers, e.g. a future role for seaside towns as attractive locations for high skilled workers;
    - coordinated decisions are needed about digital connectivity, transport, place making investment and the nature and scale of housing provision;
- There are significant opportunities for sustainable development using brownfield land reserves but these are insufficient to meet overall housing requirements, so hard strategic choices will have to be made;
- Choices about housing provision between as well as within local authority and city region boundaries need to be made – improved transport connections will unlock strategic options about the location of new housing and this should be reflected in policymaking.

The right housing mix

- As the economy grows and transforms, more city centres will need to adapt to provide the exciting, high-quality living environments that people want, with immediate access to a wide range of leisure and services;
- For a larger, more prosperous and more balanced economy, the North's towns and cities will need to ensure they have the housing stock to retain and attract a growing number of affluent workers, including larger family homes.

Low demand

- Options for developing the future role of low demand areas in the northern economy should be given greater consideration, including through more integrated strategic planning to help harness opportunities associated with the wider North;
- Local authorities and central government can offer greater transparency and efficiency in the planning process and better infrastructure provision as a basis for attracting higher private investment into housing.

Housing quality

- A sole focus on new build is counter-productive. There is also a need to focus on addressing quality issues of the existing stock that can have 'negative externalities', permanently holding back low-demand areas. To achieve this means locally-specific initiatives, integrated in wider investment and policy programmes;
- There should be more recognition given to the role that the quality of housing plays in determining the attractiveness of places and their ability to attract investment, employment and people;
- Many northern towns have a legacy of pre-1919 housing which is not fit for purpose – much of this can be turned into an opportunity for not only providing much needed high-quality housing, but also for meeting a broader set of objectives to bring about economic and social as well as physical renewal.

Affordable housing

- There should be a strong focus on developing housing for social and intermediate rent, addressing the major backlog in provision that currently exists;
- In the longer term, Northern Powerhouse policies should broaden access to economic opportunities and planning should shift towards an increasing proportion of people being able to afford market-based housing options;
- Greater flexibility in the use of Government funding would allow sub-standard existing social and RP housing to be improved, with wider social and economic benefits to communities.

Housing for elderly people and students

- Improved collaboration between public and private sectors should result in improved and more varied housing 'products' that meet local requirements better;
- One part of the solution may be new purpose-built town and city-centre apartments. These can appeal to older and younger residents for similar reasons – the convenience of having a wide range of services and social opportunities right on the doorstep.

Above all, the key message of this report is that transforming the North's economy can only be achieved by planning jobs, housing and transport together, in a collaborative way.

6. Appendices

6.1 Methodology

Overall methodology

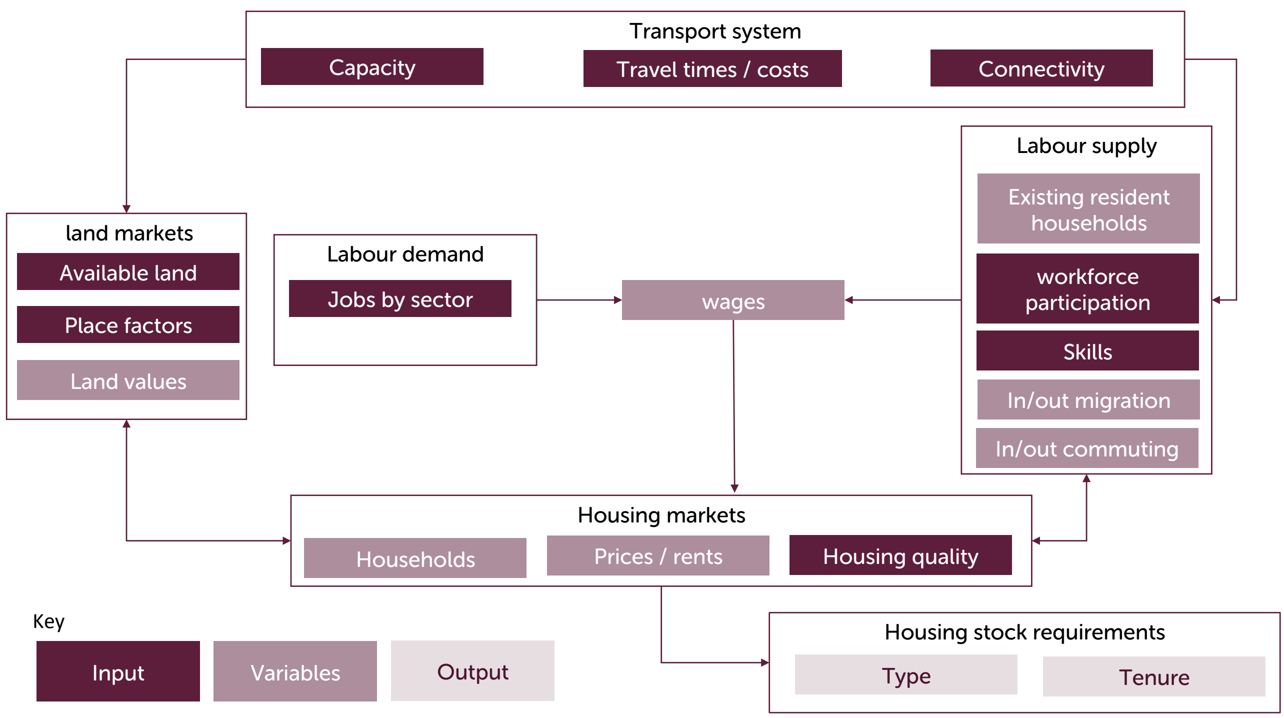
This study for Homes for the North, completed by the Centre for Economics and Business Research and Quod, set out to identify the future housing requirements of the North if the Transformative growth aims of the Northern Powerhouse Independent Economic Review are to be met and the ambitious transport investments planned by Transport for the North (TfN) are to achieve their full potential.

Fundamental to the report is a thorough understanding of the relationships between employment, transport, and housing. These are illustrated in Figure 10.

Cebr and Quod pursued a 'twin-track' approach based both on desktop research and analysis and stakeholder engagement at a series of events across the North.

The project team worked closely with Transport for the North data to produce estimates of future housing requirements. In TfN's Connectivity and Labour Markets in the Northern Powerhouse, Cambridge Econometrics modelled the occupational impacts of employment and population forecasts by local authority of 'Business as usual' and 'Transformative' growth paths as set out in the NPIER.

Figure 10: Representation of the relationships between employment, transport, and housing



Their results for population, combined with our analysis and a reasonable set of assumptions, were used to produce housing requirements (and therefore average annual net additions required to 2050) by region. This methodology is explained in more detail under 'Dwellings stock analysis'.

Supplementary pieces of analysis included in these appendices were based on wide-ranging analyses of ONS population projections, 2011 Census data, the English Housing Survey, and Energy Performance Certificate data from MHCLG. Quod undertook the major exercise of reviewing and compiling the brownfield land registers produced by northern local authorities to produce a view of the availability of land for development across the North.

Stakeholder events were a further core part of our methodology. Each event started with a presentation of interim findings either by Ian Birch (Cebr) or Barney Stringer (Quod), included a structured discussion led by a Homes for the North deputy, and was chaired by a chief executive of a constituent housing association. Attendees included representatives of housing associations, developers, major employers, and local government. 'Structure of stakeholder events' discusses the format of them in more detail.

Dwellings stock analysis

Housebuilding requirements in 3.1 Calculation of annual housebuilding requirements were calculated based on the following assumptions and steps:

- Dwelling stock in each local authority continues to increase until 2020 in line with the 2014-17 average annual net additions[7] – this gives projected 2020 dwelling stock figures.
- Household population is assumed to be 98.20% of the total population in 2050 as projected by TfN – this adjustment accounts for the proportion of the population living in barracks, prisons, nursing homes, and so on.
- The ONS provides current household sizes (people per dwelling) and projections to 2041 by local authority. These were extrapolated to 2050. Household population divided by projected household size gives required numbers of dwellings in 2050.
- A vacancy rate of 3.21% of total dwelling stock is assumed across the North, in line with the current rate. For comparison, the rate in England as a whole is slightly lower at 2.53%[8].

This provides 2050 pan-northern dwellings requirements. From these we have calculated 2020-50 average annual net additions (AANAs) needed to meet these targets, broken down to the sub-regional level. This is a net requirement, i.e. constructions net of demolitions – therefore the number of dwellings built may need to be substantially higher to achieve it, particularly if major regeneration programmes including demolition of existing stock are underway.

7 MHCLG provides figures on total dwelling stock by local authority and year used in these calculations.

8 Within reason, a higher vacancy rate is desirable: the National Housing Federation's report Housing supply requirements across Great Britain (page 21) notes that English vacancy rates are running at very low levels – having been as high as 3.49% of stock in 2008 (referring to MHCLG Live Table 615) – and argues that a higher rate could enable more flexibility and movement in the system. Therefore we choose the higher Northern rate when calculating 2050 requirements, as this better reflects affordability and flexibility aspirations without being so high as to be undesirable.

Structure of stakeholder events

At each of the stakeholder events held across the North, a presentation giving the background to the project and headline findings, including a focus on the host region, was delivered by Ian Birch or Barney Stringer. In the structured discussion that followed, four key questions were put to attendees:

1. How important is thinking about future housing requirements at a pan Northern level to achieving the Northern Powerhouse vision? How can we improve the integrated planning of housing, transport, skills and other key areas for economic growth?

i. How else can we help achieve the Northern Powerhouse vision?

ii. Have we got the overall scale and balance of different needs about right?

2. What role do you see this (geographical) area playing in the future northern economy including in meeting its housing requirements?

i. What role do stakeholders envisage different parts of the area playing in meeting housing needs?

3. What are the challenges in terms of the overall quality of the existing housing stock in this area, and what, if any, are the ‘place level’ challenges?

i. What if anything is the role for regeneration?

4. What opportunities do you see for increasing housing capacity across this sub-region and what is the role for partnership working between HfN and TfN?

i. Could already-developed areas be densified?

ii. What are the prospects for brownfield or greenfield development and will these solutions be sufficient?

iii. How much difference will improved transport connections make and what additional interventions may be needed?

Feedback on these questions was recorded and circulated after the meetings, and has been incorporated throughout this report.

Table 2 summarises where and when these events took place. In 6.3 Summary of issues raised in stakeholder events there is a high-level view of which issues featured in each discussion.

Well over a hundred individuals and organisations from across the North were involved in the stakeholder events, which provided a very important layer of local knowledge to the analysis.

Table 2: Timetable of stakeholder events

Contributors		
Cumbria	Riverside	26/02/2019
South of Tyne	Gentoo	06/03/2019
North of Tyne	Homegroup	07/03/2019
Greater Manchester and Lancashire	Bolton at Home	11/03/2019
Sheffield City Region	Great Places	18/03/2019
West Yorkshire and Hull	Incommunities	19/03/2019
Liverpool City Region	Onward	22/03/2019
Tees Valley	Thirteen Group	04/04/2019
Cheshire	The Guiness Partnership	11/04/2019

The organisations involved are listed in Table 3 – the report does not represent the views of these organisations, and this should not be taken to imply their endorsement of the report, however H4N wishes to express their gratitude for their time and invaluable contributions.

Table 3: Contributing organisations

Contributors		
Accent Housing Group	Gentoo	Prima Group
Allerdale Borough Council	Go North East	Regenda
Arches Housing Association	Great Places Housing Group	Rochdale Borough Council
Barnsley Council	Greater Manchester Council	Redcar & Cleveland Borough Council
Barratt David Wilson Homes	Halton Borough Council	Rotherham Council
Barrow Borough Council	Hartlepool Borough Council	Salford City Council
Bassetlaw Council	Home Group	Sefton Borough Council
Bernicia	Homes England	Sheffield City Region
Beyond Housing	Incommunities	Sheffield Council
Blackburn with Darwen Council	Johnnie Johnson Housing	Shelter
Bolton at Home	Karbon Homes	South Cheshire Chamber of Commerce and Industry
Bolton Council	Knowsley Council	South Lakeland DC
Bradford Council	Leeds Federated	South Tyneside
Burnley Borough Council	Lichfields	South Yorkshire Housing Association
Calderdale Council	Liverpool	St Helens Council
Castles and Coasts	Liverpool City Council	Stagecoach
Chartered Institute of Housing	Liverpool City Region Combined Authority	Sunderland Council
Cheshire and Warrington LEP	National Housing Federation	Tees Valley Combined Authority
Cheshire East Community & Voluntary Services	Newcastle City Council	The Guinness Partnership
Cheshire East Council	Newcastle University	Thirteen group
Cheshire West & Chester Council	Nexus	Together Housing Group
Confederation of British Industry	North East Chamber of Commerce	Transport for the North
Connect	North East LEP	University of Liverpool
Cumbria LEP	North Tyneside Council	Wakefield Council
Doncaster Council	Northern Housing Consortium	Warrington & Co
Eden District Council	Northstar	West Yorkshire Combined Authority
Engie	Northumbria University	Your Homes Newcastle
Gateshead Council	Onward	

Table 4: Average annual net additions required to 2050, BAU growth

	Projected dwellings, 2020	Household population, 2050	Dwellings required, 2050	AANAs required, 2020-50	AANAs realised, 2014-17	Increase in AANAs required
North	6,997,380	17,258,650	8,274,375	42,567	45,160	-2,593
Greater Manchester	1,222,810	3,272,908	1,525,758	10,098	6,497	3,602
Leeds City Region	1,243,070	3,361,484	1,558,727	10,522	8,003	2,519
Liverpool City Region	716,460	1,642,886	803,538	2,903	4,663	-1,761
Sheffield City Region	617,260	1,592,804	751,208	4,465	4,200	265
Tees Valley	312,060	736,009	357,274	1,507	2,257	-750
North East LEP	930,760	2,162,168	1,073,334	4,752	6,350	-1,598
Hull	434,040	1,032,868	509,159	2,504	2,223	281
Cheshire & Warrington	431,670	1,042,197	507,186	2,517	3,903	-1,386
Rest of North Yorkshire	153,600	326,024	166,555	432	1,260	-828
Lancashire	683,600	1,591,920	767,727	2,804	4,260	-1,456
Cumbria	252,050	497,383	253,909	62	1,543	-1,481

Table 5: Average annual net additions required to 2050, Transformational growth

	Projected dwellings, 2020	Household population, 2050	Dwellings required, 2050	AANAs required, 2020-50	AANAs realised, 2014-17	Increase in AANAs required
North	6,997,380	18,650,831	8,944,408	64,901	45,160	19,741
Greater Manchester	1,222,810	3,492,483	1,627,819	13,500	6,497	7,004
Leeds City Region	1,243,070	3,623,973	1,681,690	14,621	8,003	6,617
Liverpool City Region	716,460	1,798,828	879,954	5,450	4,663	786
Sheffield City Region	617,260	1,731,953	816,964	6,657	4,200	2,457
Tees Valley	312,060	795,911	386,674	2,487	2,257	230
North East LEP	930,760	2,343,936	1,163,029	7,742	6,350	1,392
Hull	434,040	1,100,135	542,324	3,609	2,223	1,386
Cheshire & Warrington	431,670	1,130,675	550,158	3,950	3,903	46
Rest of North Yorkshire	153,600	361,081	184,560	1,032	1,260	-228
Lancashire	683,600	1,736,765	837,998	5,147	4,260	887
Cumbria	252,050	535,092	273,238	706	1,543	-837

6.2 Dwellings stock analysis – results

The full results of the analysis of required average annual net additions to housing stock required to support BAU and Transformational growth is shown below, in Table 4 and Table 5 respectively.

Results are given at the level of the North as a whole and for each of the 11 sub-regions. These tables include: projected dwellings in 2020 (assuming that from 2017-2020 dwelling stock grows by the same amount each year as the 2014-2017 average); household population in 2050 projected by TfN; the 2050 dwelling stock requirement produced by our analysis; average annual net additions needed from 2020 to 2050 to meet this target; average annual net additions realised from 2014-2017; and the difference between required and recent average annual net additions. Table 6 shows the figures for average annual net additions under the 'smoothed growth' path, where net additions grow each year by a uniform rate for each region in order to exactly meet the 2050 Transformational growth dwellings stock requirement. 2020-27 and 2027-50 requirements are shown alongside 2014-17 figures for average annual net additions completed.

Table 6: Average annual net additions to support Transformational growth under smoothed growth by sub-region for 2020-2027 and 2027-2050, compared with actual average annual net additions 2014-2017

	Average annual net additions realised 2014-17	Average annual net additions required 2020-27	Average annual net additions required 2027-50
North	45,160	48,852	69,786
Greater Manchester	6,497	7,739	15,254
Leeds City Region	8,003	9,259	16,252
Liverpool City Region	4,663	4,851	5,632
Sheffield City Region	4,200	4,702	7,252
Tees Valley	2,257	2,313	2,540
North East LEP	6,350	6,675	8,067
Hull	2,223	2,503	3,946
Cheshire & Warrington	3,903	3,915	3,960
Rest of North Yorkshire	1,260	1,195	982
Lancashire	4,260	4,468	5,353
Cumbria	1,543	1,230	547

6.3 Summary of issues raised in stakeholder events

Each stakeholder event included a wide-ranging discussion with a variety of perspectives. Key insights are provided in summary boxes throughout this document. At a high level, issues raised in each event are summarised in Table 7.

Table 7: Issues raised at each stakeholder event

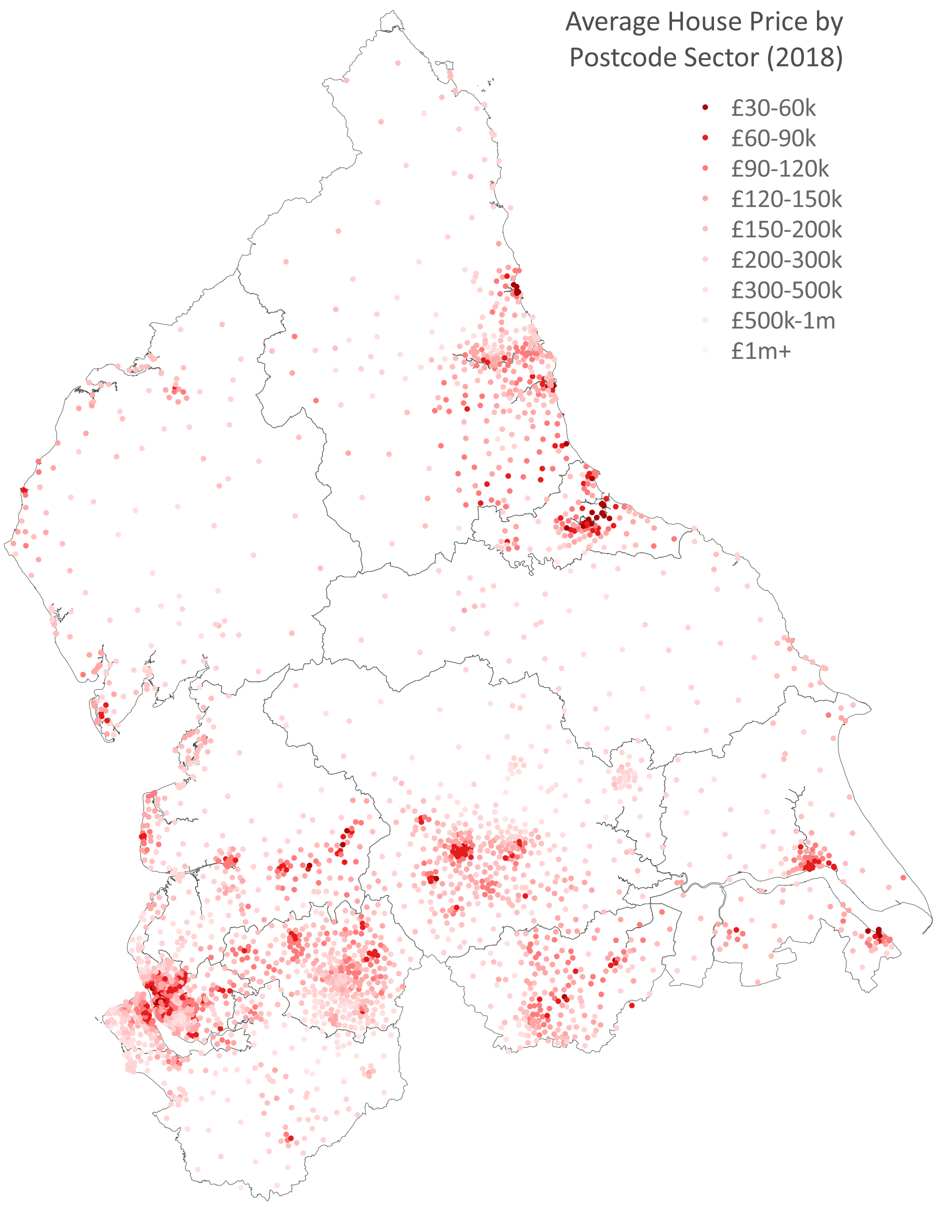
	Cumbria	South of Tyene	North of Tyne	G Manchester & Lancashire	Sheffield	West Yorkshire & Hull	Liverpool	Tees Valley	Cheshire
Weekly commuters	✓	✓							
Rural industries	✓								
'Left-behind' towns	✓		✓	✓				✓	✓
Transport connectivity	✓	✓		✓	✓		✓	✓	
Demolition/ regeneration	✓	✓	✓	✓	✓	✓		✓	✓
Housing type requirements	✓					✓			
City centre cost/density						✓	✓		
Social housing			✓				✓		
Elderly housing	✓				✓			✓	✓
Modular homes			✓		✓				
Land value capture			✓			✓			✓
Standard Methodology	✓								
Green belt			✓		✓	✓			

6.4 The geographic incidence of low demand

We have assessed average house price data by postcode sector to assess the geographic incidence of this issue, and the results are shown in Figure 11. This indicates that significant pockets of low demand exist in some large cities, particularly in north Liverpool, Bradford, and Hull, but only isolated pockets in other cities such as Leeds, Sheffield and Newcastle.

Outside the large cities, there are widespread pockets of low demand in the Tees Valley, former mining areas, especially in County Durham, and in coastal locations, such as Grimsby and parts of West Cumbria. The pattern in and around Greater Manchester is interesting, with little evidence of low demand in Manchester itself but widespread issues in the surrounding former cotton towns of Bolton, Oldham, Rochdale, as well as in Blackburn and Burnley.

Figure 11: The geographical distribution of low demand



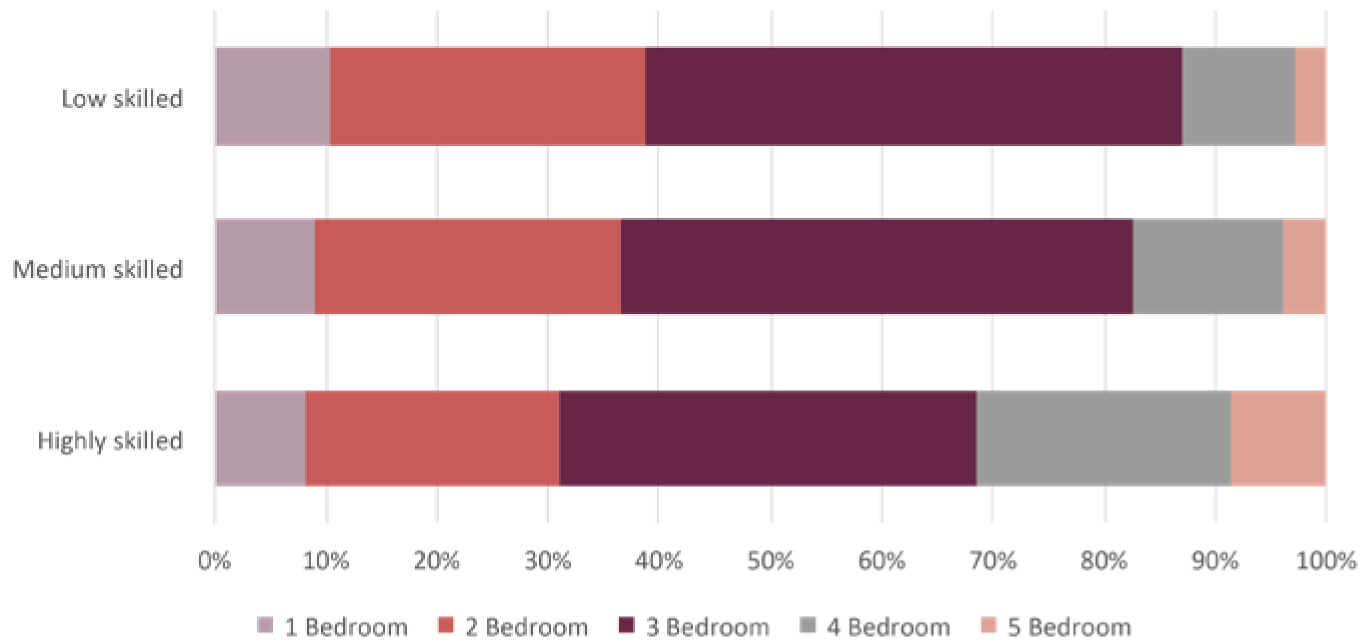
6.5 Skill levels and housing demand

The Transformational scenario of the Northern Powerhouse Independent Economic Review (NPIER) contains projections for the growth in employment by 2050 across the North. TfN's further work on connectivity and Labour markets across the Northern Powerhouse[9] sets out the increase in highly skilled workers to support the move towards a Northern economy that features higher workforce participation and more productive jobs. With higher productivity comes higher incomes which are in turn likely to generate additional housing demand. Once the essentials are accounted for, improved housing is one way in which wealthier households often seek to improve their quality of life and to achieve this, households are willing to devote a reasonably large proportion of their disposable income toward housing. This increases the level of pressure on the housing market resulting from a rapidly growing economy beyond simply the effect of increasing population.

TfN's Connectivity and Labour Markets in the Northern Powerhouse research classifies employment into high, medium and low skilled categories, which were mapped onto standard occupational classifications (SOC 2010)[10]. Using the same mapping we have investigated the housing preferences of these groups and how they are expected to affect the overall housing requirement in the North under the Transformational scenario.

Analysis of 2011 Census data showed that among households with a high skilled household reference person[11] there was a clear trend towards living in property with more bedrooms – see Figure 12.

Figure 12: Number of bedrooms by occupation of household reference person, 2011



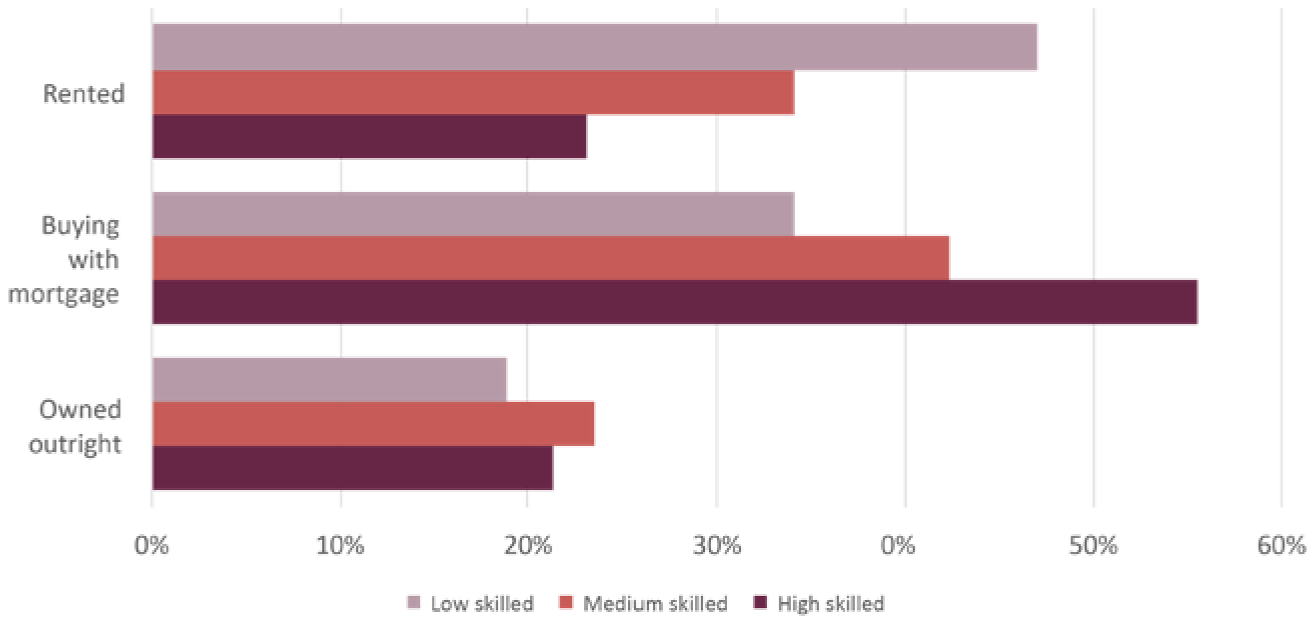
9 https://transportforthenorth.com/wp-content/uploads/Connectivity-and-Labour-Markets-in-the-Northern-Powerhouse-Report-min.pdf

10 High-skilled' includes major groups 1 to 3 (Managers, directors and senior officials; Professional occupations; Associate professional and technical occupations), 'medium-skilled' includes groups 4 to 7 (Administrative and secretarial occupations; Skilled trades occupations; Caring, leisure and other service occupations; Sales and customer service occupations) and 'low-skilled' includes groups 8 and 9 (Process, plant and machine operatives; Elementary occupations), according to the ONS 2010 Standard Occupational Classification (SOC2010)

11 From April 2001, government surveys such as the Census replaced the concept of the 'head of the household' (HOH) with a 'household reference person' (HRP). The HRP is the person in whose name the accommodation is owned or rented. For joint owners or joint tenants, the HRP is whoever has the highest income, or whoever is oldest if incomes are the same. The old HOH definition gave automatic priority to male partners.

Given the generally higher earnings, older age profile and greater job stability that accompanies higher skill levels, a larger proportion of high-skilled people can access the deposit and finance required to buy a home with a mortgage. Figure 13 shows the relationship between skill level and tenure. Therefore as higher-skilled workers migrate into the North over time, more homes to buy rather than rent will probably be required. While outright owners tend to be nearer retirement and may be less active in the housing and labour markets, mortgaged owners and renters fortunes can have bigger effects on prices and consequently levels of housing investment.

Figure 13: Tenure by occupation of household reference person



Migration of wealthier owner-occupiers into some of the relatively more affordable housing markets in the North could provide a lot of competition for the existing population. Without additional supply this would be expected to increase prices and encourage landlords to sell property or raise rents, squeezing tenants and pricing out existing lower skilled residents that are prospective first time buyers.

In order to fully understand the implications of skill level for housing demand we used a bespoke dataset from the 2011 Census to test whether higher skilled households tended to have different preferences in terms of household composition. The aim was to answer two major questions regarding households and skill levels:

1. Does a higher skill level lead households to choose to live in larger or smaller groups perhaps by having to have more/fewer children, being more/less likely to take in elderly relatives, or their children being more/less likely to continue living with parents after reaching adulthood?
2. Are households likely to be made up of people of the same skill level as each other, or contain a mixture of skill levels?

The answers to these questions would allow a better understanding of the number of households that might form as a consequence of the higher skill levels of employment associated with the NPIER Transformational scenario. If higher skilled workers tend to live in smaller households for instance, or with lots of other high skilled people, then different parts of the North could experience quite different changes in their housing requirement over time.

Census household analysis

We commissioned a bespoke dataset from the Census that indicated the count of households under every combination of occupational groups for households containing between one and five people. This illustrates how households form in relation to the skill level of all household members and not just the HRP. In order to match these households as closely as possible with the estimates from the NPIER scenarios we excluded households that were exclusively populated by those over the age of 65.

From the remaining households we have estimated the probability of living in a household containing 1, 2, 3, 4, or 5 (or more) according to whether an individual is high skilled, medium skilled, low skilled or has never worked (which will be predominantly children) – see Table 8.

Table 8: Probability of living in different household sizes, by skill level

	High skilled level	Medium skilled	Low skilled	Child/ never worked
Probability of living in a 1 person household	9%	11%	15%	3%
Probability of living in a 2 person household	38%	34%	28%	7%
Probability of living in a 3 person household	23%	24%	26%	25%
Probability of living in a 4 person household	22%	22%	21%	42%
Probability of living in a 5 person household	7%	9%	10%	23%

It is difficult to discern a clear overall relationship between skill level and household size. Low-skilled people are more likely to live alone or in the very largest households. High-skilled workers are more likely to live in two-person households, suggesting that the North as a whole, and in particular those areas expected to see major growth in high-skilled workers, will need an increase in suitable housing provision.

6.6 English Housing Survey analysis

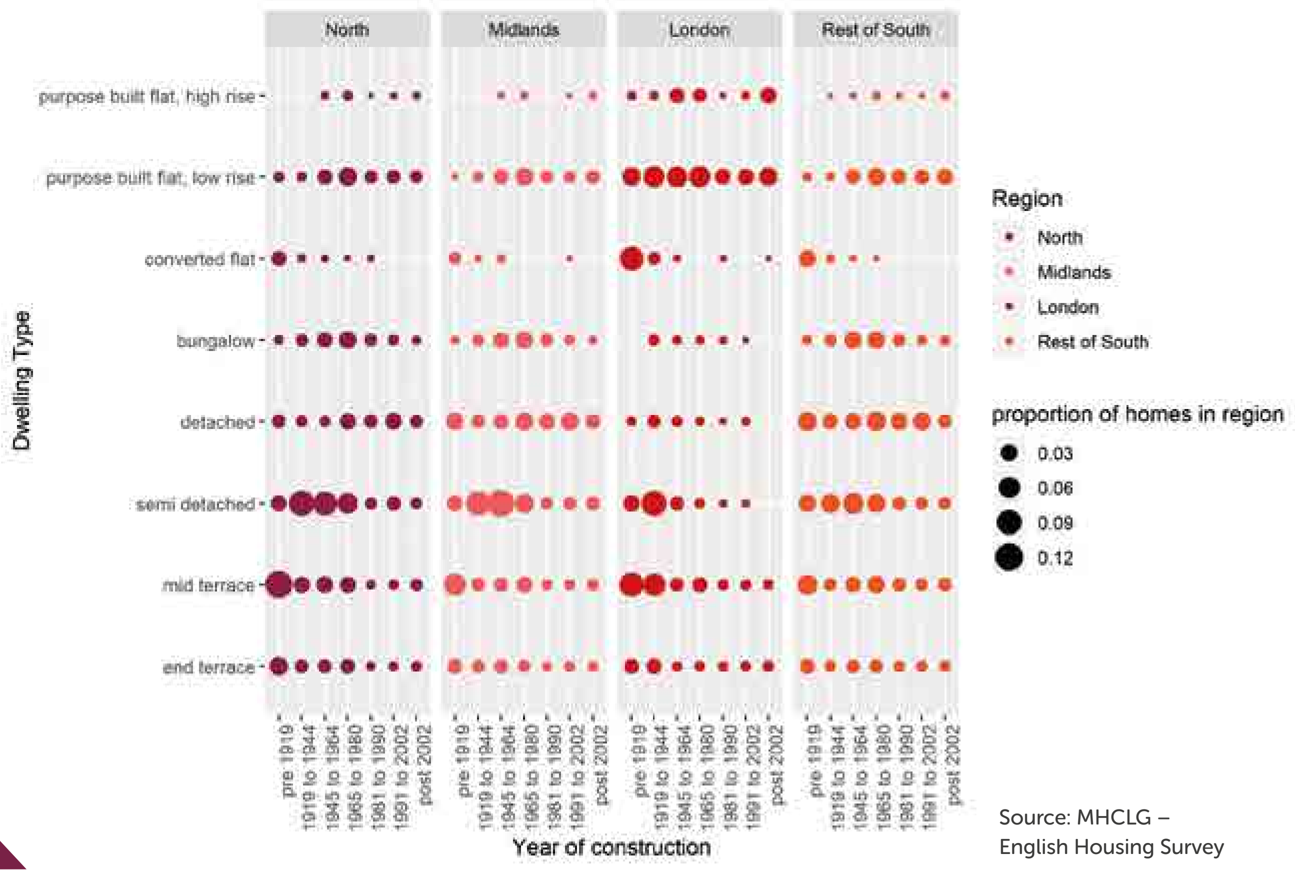
The nature of housing in the North

Our analysis suggests that the quality of northern houses is in general slightly lower than that of their southern counterparts. They are on average smaller, older and more likely to fail the Decent Homes Standard[12]. The North has seen a lower rate of housebuilding and this means northern homes are on average older than those in the south of the country, where new housing has lowered the average age of the stock, thereby increasing the gap relative to northern housing. According to an analysis of the English Housing Survey, 24% of northern homes were constructed before 1919, compared to 20% in the rest of England.

Figure 14 contrasts age and type of housing stock by four regions of England: North, Midlands, London, and rest of South. A few differences in housing stock stand out:

- Pre-1919 terraced houses are relatively common in the North compared to all other regions.
- Detached houses are slightly less common in the North than the South.
- In common with the Midlands and rest of South, the North has relatively more new detached and semi-detached houses than London (where newer dwellings tend to be purpose-built flats).

Figure 14: A graphical representation of the housing stock by region (size of circle is proportional to the share of that housing type in the region)



Source: MHCLG – English Housing Survey

12 The technical standard for public housing underpinning the Decent Homes Programme set out in 2000. Criteria include meeting statutory minimum requirements, a reasonable state of repair, reasonably modern facilities and services, and a reasonable degree of thermal comfort.

Over time so-called slum clearance programmes and widespread adoption of council housing altered the face of the nation's housing stock in the 1960s and 1970s. Although London had a longer legacy of purpose built flats, the arrival of new construction techniques and council involvement in housing development on a larger scale led to a surge in provision of this type of housing up until the 1980s around the rest of the country, including the North. Private developers continued to provide this type of housing during strong periods of economic growth and in city centre locations. This trend was driven by planning guidance that often enshrined high density housing in planning policy across the country.

Older terraced housing is often associated with the industrialisation of the North and the legacy of the housing developments from this period are clearly visible in the data. Later waves of semi-detached housing built in the inter-war and post-war periods also left their mark on towns and cities across the North. While 29% of all housing stock in the country is found in the North, 34% of terraced and semi-detached property is northern.

Pressure on space in high demand areas and the relative difficulty of developing new property has also strengthened the incentive to turn larger properties into converted flats. The constraints on development of new homes in London which is tightly bounded by green belt have encouraged a larger proportion of conversions particularly of older properties. Given that the North is less space-constrained than the capital, the pattern of building lots of flats is not necessarily one it will wish to replicate.

Housing quality and age

The issue of poor housing quality can be driven by a number of causes although perhaps unsurprisingly there is a strong relationship with age. According to the English Housing Survey, three-quarters of all non-decent homes were built before 1965. Non-decent means the home is lacking in suitable amenities, has very low levels of energy efficiency or in the worst cases contains severe safety hazards. The oldest homes are most likely to be considered non-decent, with 40% of the total built before 1919.

A preference for older homes built in a traditional style has led many households to invest significantly in these homes, retaining the aesthetic benefits while enhancing their quality and comfort. Therefore while period properties in many parts of the country are highly desirable, older homes are susceptible to problems due to the construction technology available at the time they were built. Figure 15 shows that in both the North and the rest of England, the oldest housing is most likely to be non-decent. Very few houses built in the 21st century do not meet the decent homes standard. In the North, not only were a larger proportion of homes built before 1919, but 42% of these properties are considered non-decent. The comparable figure for the Rest of England is 37%.

Figure 15: Proportion of homes considered non-decent, by year of construction

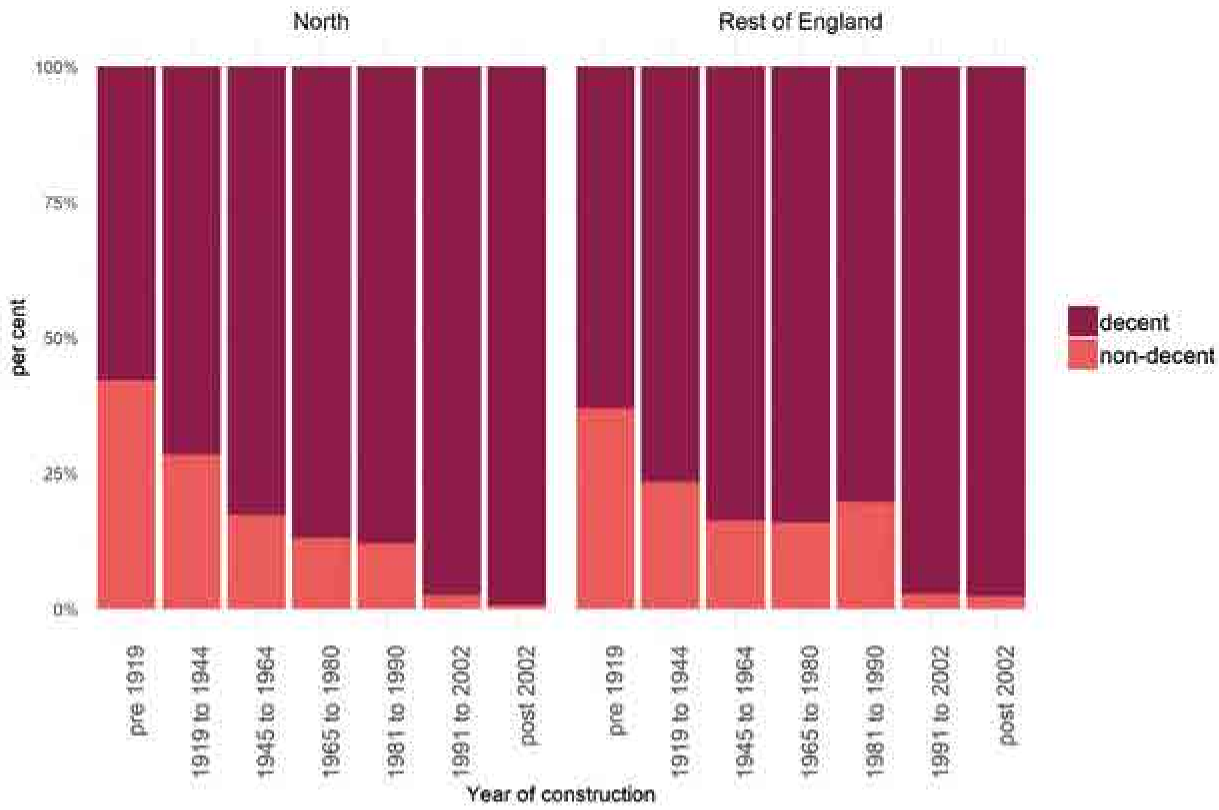
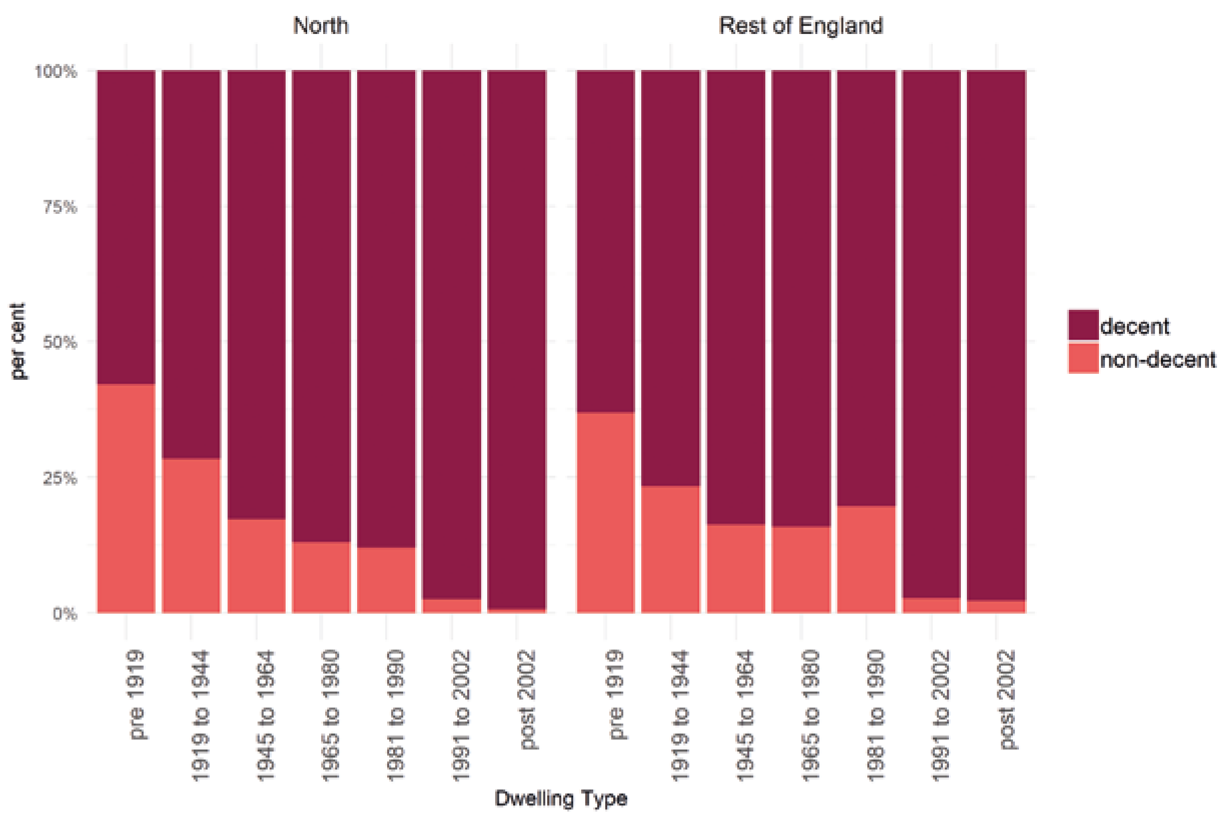


Figure 16: Proportion of homes considered non-decent, by property type



Higher house prices can often be a prerequisite to sinking significant investment into the high cost renovation of older properties. Landlords in particular may not consider regular refurbishment of their property to be profitable, as they do not directly suffer the consequences of lower quality if demand for rental property is inelastic[13]. Only when incomes are high enough and there is enough competition between landlords that tenants gain bargaining power will the market force standards to rise. The decline in local economies across parts of the North has reduced the incentive and capability of both landlords and households to invest in bringing their property up to decent standards.

Housing quality and type

Figure 16 shows the decent and non-decent percentages by property type for homes in the North and the rest of England.

Converted flats, most of which are found in older properties, are also associated with non-decency. In once desirable areas that are home to large, older houses, periods of economic decline led to lower income residents who may not demand as much housing space. Therefore these properties will often be converted into multiple dwellings or houses in multiple occupation to meet the minimum standards that the market locally can bear.

For terraced houses, semi-detached houses, and converted flats the non-decent percentage is higher in the North than elsewhere. The North's recent relative economic performance may be a feature in the lower quality of the housing stock. A combination of the physical construction of some of these homes and the local economies surrounding them has held back refurbishment, to the detriment of their residents' quality of life.

6.7 Energy Performance Certificate data analysis

The English Housing Survey is the most comprehensive source of housing condition data for England and allows for a view of the housing stock that is representative of the entire country. Despite this, the analysis of particular local areas is not possible given the constraints of the sample size. In order to conduct a comparative analysis across the North we used the Ministry of Housing, Communities and Local Government's Energy Performance Certificate (EPC) database to proxy for quality across the North's eleven sub-regions.

The requirement for energy certificates for buildings flows from the EU Directive on the energy performance of buildings and an EPC is required whenever a building is constructed, sold or let. The huge volume of data on rental properties, new builds and recently sold properties available via the EPC database is a valuable source of new information relating to energy efficiency which is a feature of housing quality. Not every home holds a certificate however, so the database is not a complete representation of all housing stock and the results below should be interpreted with some caution.

The analysis that follows looks at the distribution of property characteristics that were recorded on EPC certificates in all 11 sub-regions around the North (and across London and the rest of England collectively). The analysis considers:

1. The floorspace of the property in m^2;
2. The difference between the current EPC energy efficiency rating and its potential.

The average value for each metric was collated for all EPCs in every postcode to reflect the general character of homes in the area.

13 That is to say demand is relatively insensitive to price. Housing is a necessity so high prices do not stop people from demanding it. A landlord who owns a lot of the rental properties in a particular area will face little competition and therefore a particularly low elasticity of demand.

Table 9: Cumulative distribution of postcodes at different size categories (EPC data)

Region	% of homes with floorspace less than or equal to:		
	$50m^2$	$100m^2$	$150m^2$
Rest of North Yorkshire	4%	50%	78%
Cheshire & Warrington	4%	57%	83%
Cumbria	4%	57%	83%
Rest of England	5%	62%	87%
Lancashire	4%	65%	89%
Hull	4%	67%	89%
North East LEP	5%	70%	90%
Tees Valley	4%	73%	92%
Liverpool City Region	4%	71%	93%
Sheffield City Region	5%	77%	94%
London	10%	77%	94%
Greater Manchester	6%	77%	94%
Leeds City Region	6%	77%	94%

Average floorspace

Using the EPC data we can investigate how the size of properties is distributed across the sub-regions of the North and how this compares to the rest of England and to London. Table 9 indicates what proportion of the homes that had been issued an EPC certificate were below a set of particular size category. This distribution of homes by average floorspace indicates that while homes in general are smaller across the North, as might be expected the smallest are concentrated in urban areas.

Over 90% of postcodes in the Tees Valley, Greater Manchester, Liverpool, Sheffield, and Leeds City Regions had recorded floorspaces below $150m^2$ on average. This compares to less than 80% in the heavily rural Rest of North Yorkshire region. While London has a slightly larger proportion of postcodes with average floorspace of over $150m^2$, the proportion of postcodes where homes were on average smaller than $50m^2$ was significantly higher, at 10%. This was well above the highest regions of the North on this measure – Greater Manchester and Leeds City Region – where only 6% of postcodes typically had such small properties.

The distribution of floorspaces by these regions (plus Wales) is shown in Figure 16 and data for the North is mapped in Figure 17. In general it can be seen that more rural areas (e.g. Cumbria, Rest of North Yorkshire, Cheshire and Warrington) have more housing with above-average floorspace.

Figure 17: Distribution of floorspaces by Northern regions plus London, rest of England, and Wales (EPC data)

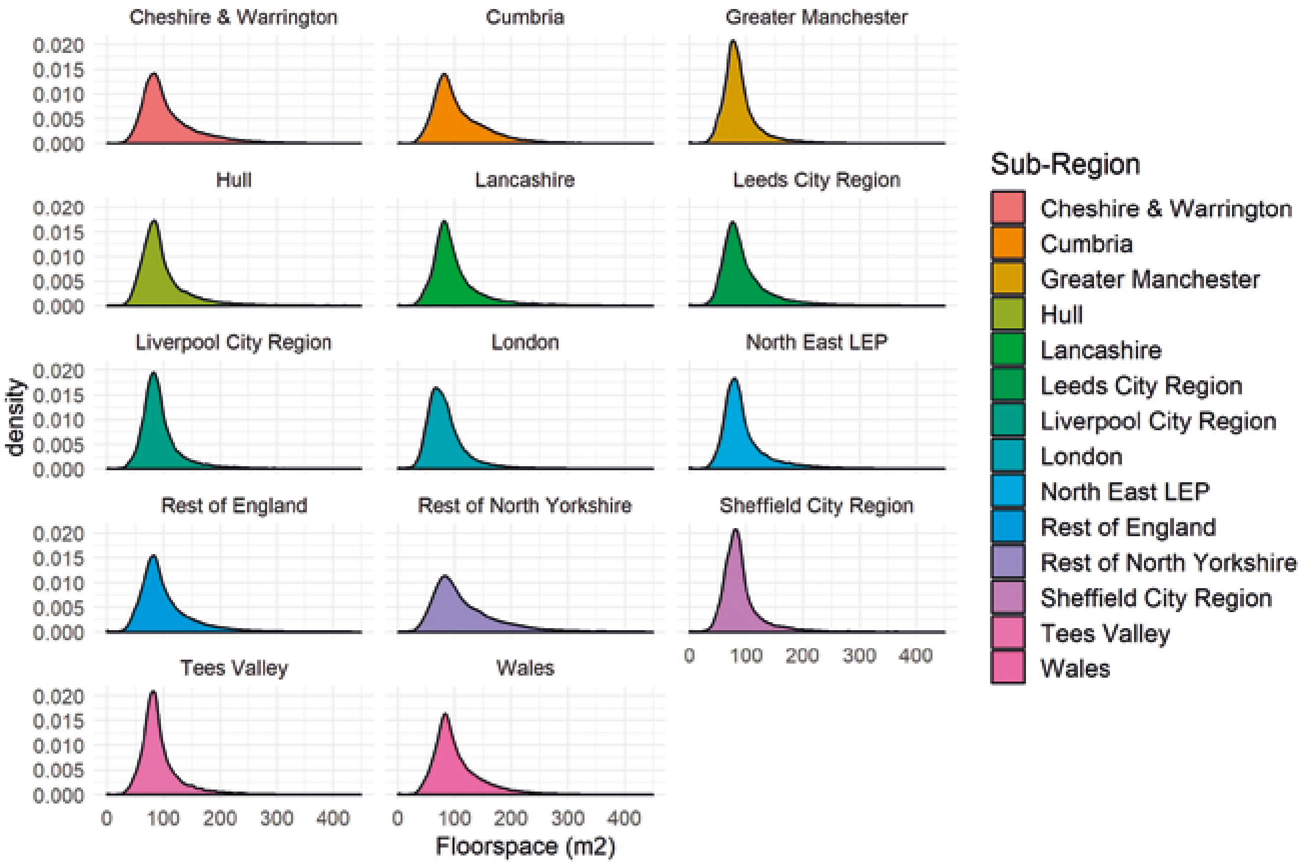
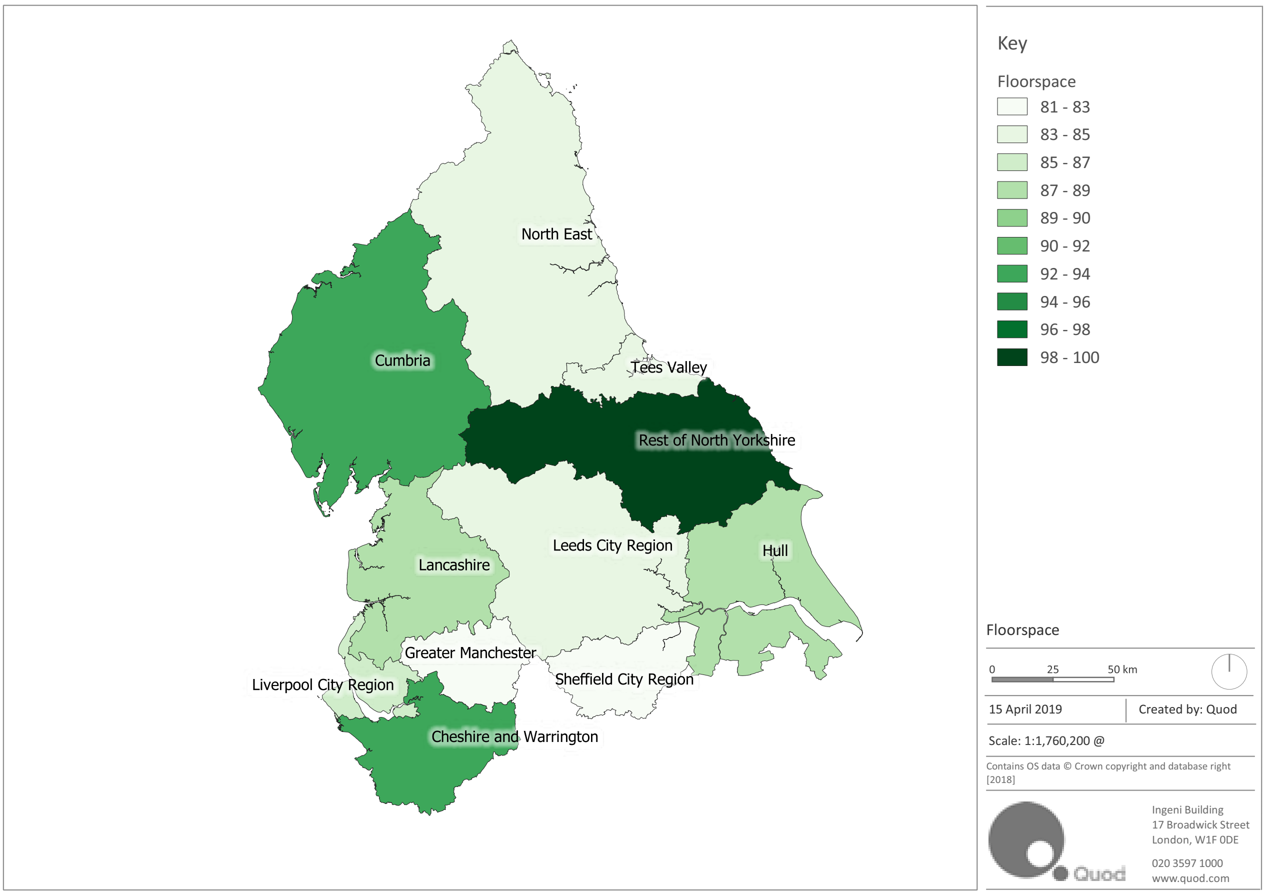


Figure 18: Map of average floorspace by northern region (EPC data)



Average difference between current and potential energy efficiency

The EPC data provides actual and potential energy efficiency performance for each property. We have analysed the differences between these; a high difference suggests properties are poorly-maintained and vice-versa. The distribution of these scores across the northern regions (plus Wales) is shown in Figure 19. Results by region are mapped in Figure 20.

This analysis indicates that within the North, properties are relatively poorly-maintained in Lancashire and Liverpool City Region, though given the small range of values in question (note the key in Figure 20) the importance of these differences should not be overstated.

Figure 19: Distribution of difference between actual and potential energy efficiency score by Northern regions plus London, rest of England, and Wales (EPC data)

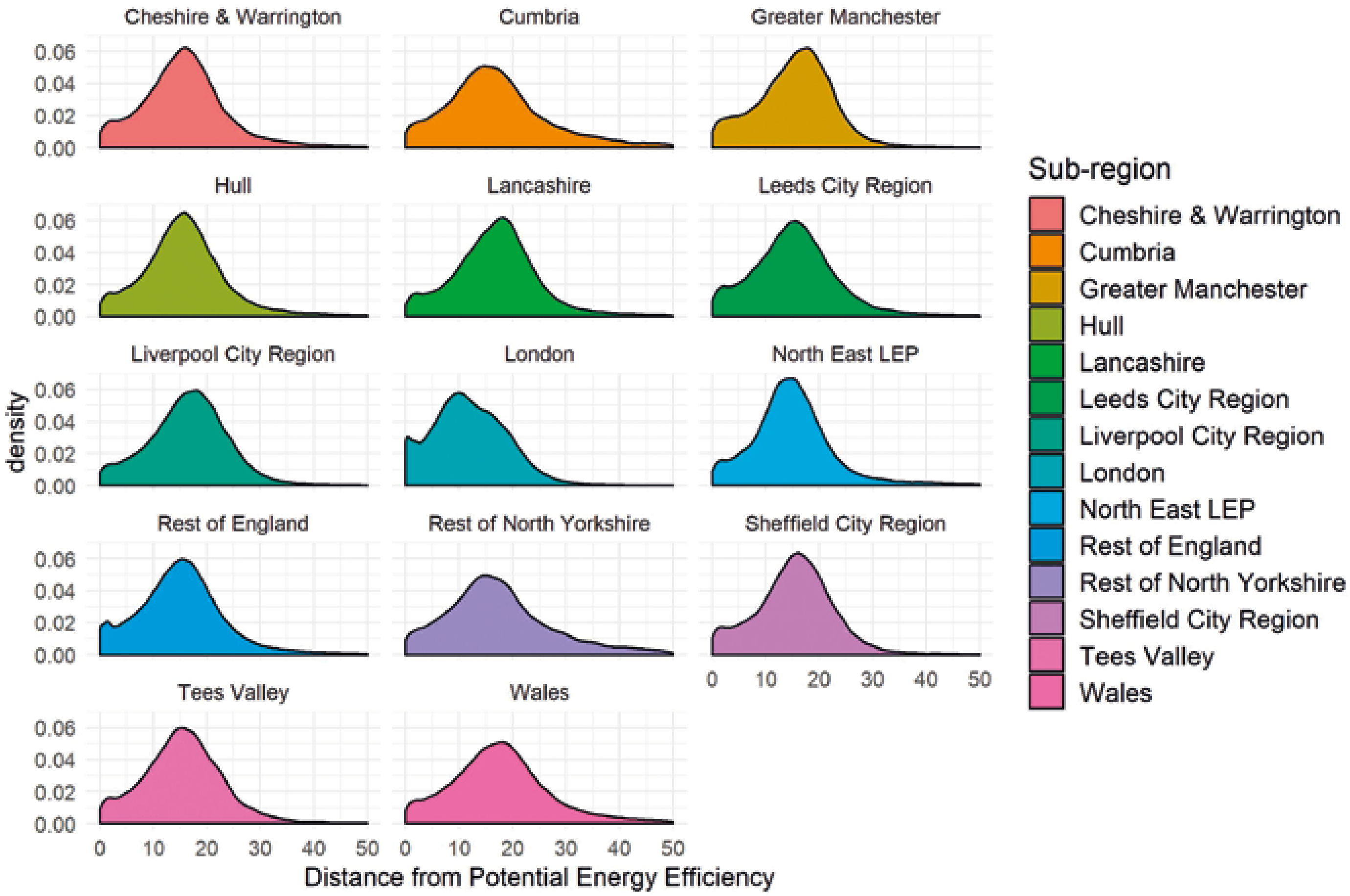
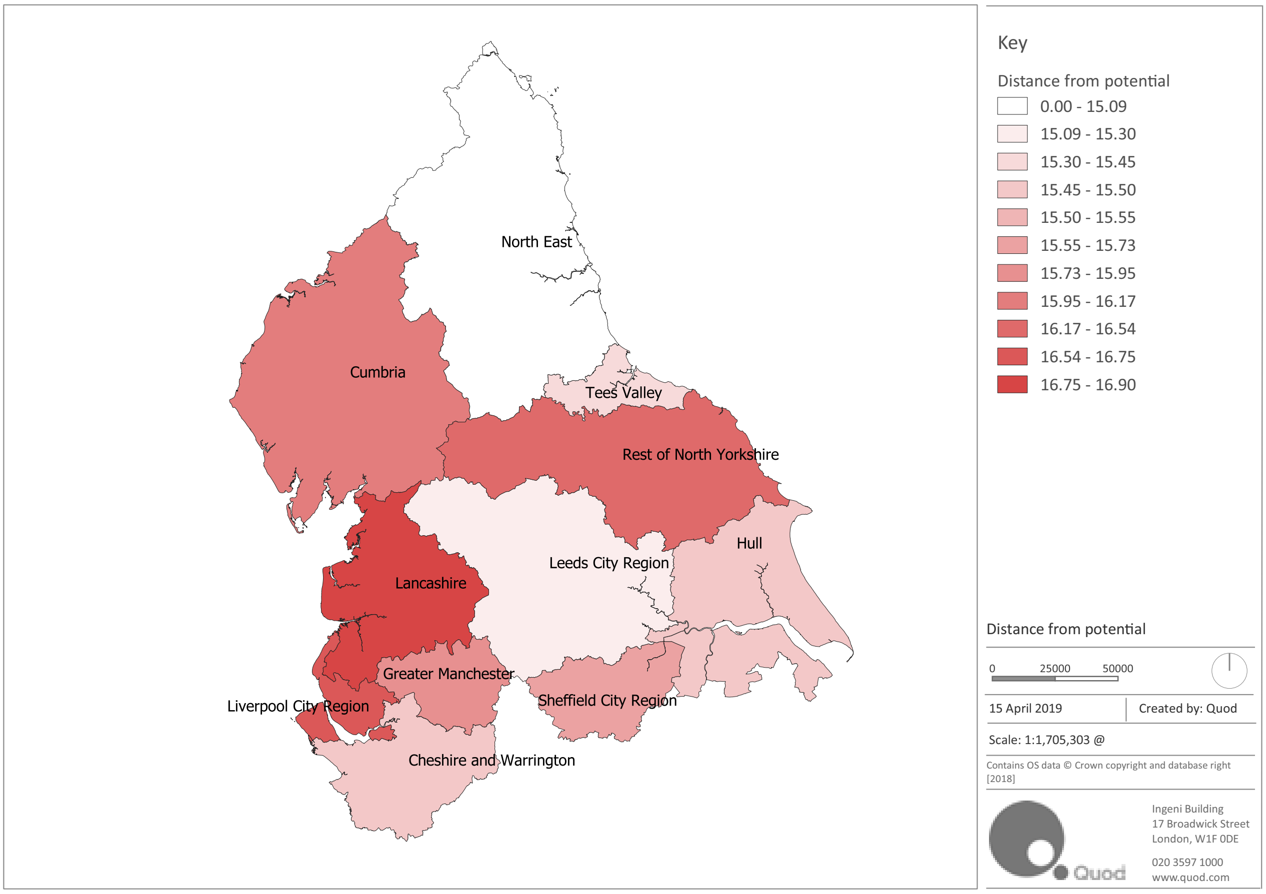


Figure 20: Map of average difference between actual and potential energy efficiency score by northern region (EPC data)

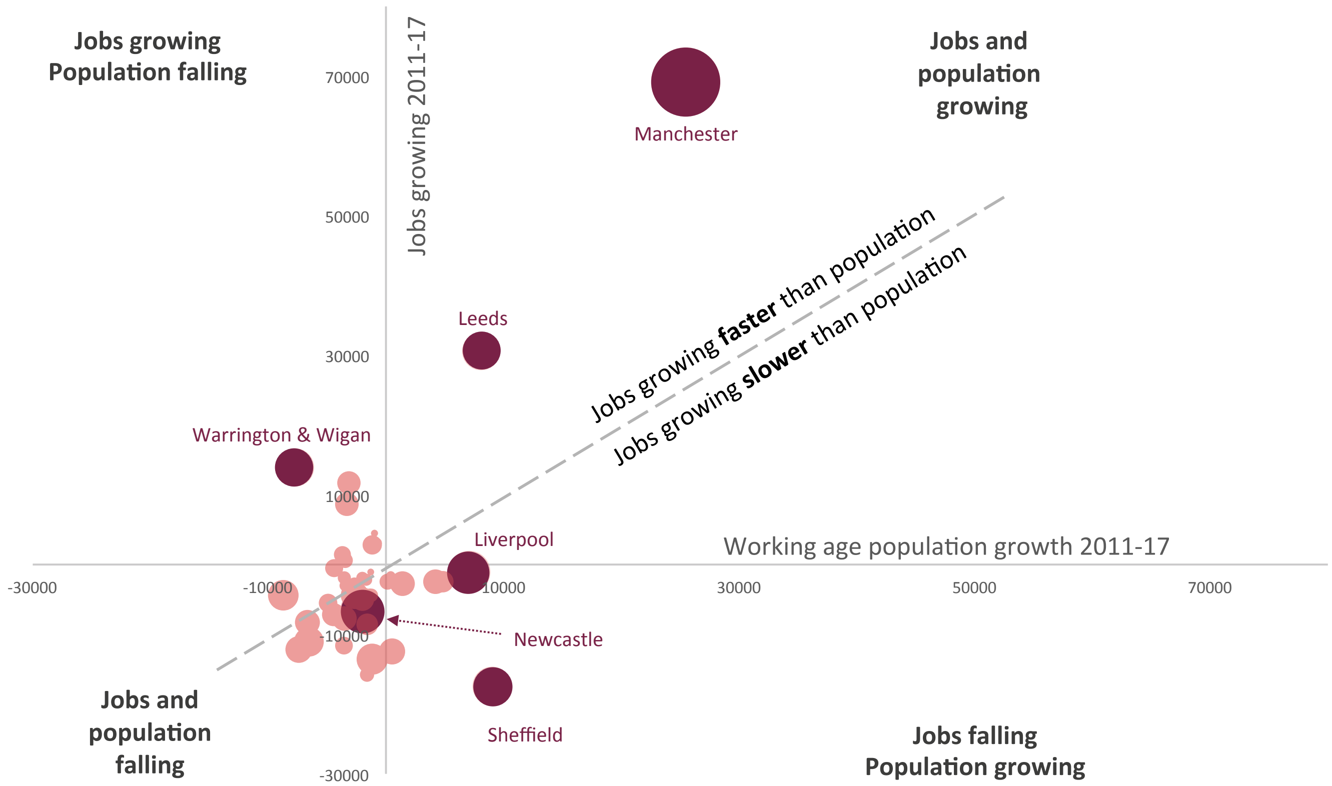


6.8 Employment and housing

There is significant variety across the North in both the performance of the economy and housing markets. Figure 21 looks at travel to work areas (not local authorities), and compares how the number of jobs and number of working age residents changed in 6 years since 2011. The size of each circle is proportional to population, and the six largest are picked out in orange.

Some areas which had seen significant falls in population, such as Liverpool, are now growing again, although jobs growth did not keep pace in this period. Manchester and Leeds stand out as being the only cities where both the workforce and employment are growing, and in both cases it is the jobs growth that is strongest.

Figure 21: Relative growth of Employment and Workforce, by travel to work area, 2011-2017



(source BRES, ONS, MYE)

This growth has accelerated in recent years, as shown in the charts below, taking only the period from 2015-17. Figure 22 shows how far Manchester stands out from the other cities in terms of absolute employment growth, while Figure 23 focuses in to show the detail of the other cities.

These illustrate that all the larger travel to work areas have seen positive employment growth since 2015, and in many cases employment grew significantly faster than the working age population. Initially, this differential can help reduce unemployment and increase labour market participation rates, but over time it is likely to require more commuting, with consequences for investment in the transport network, and spreading demand for housing to neighbouring areas.

For the North as a whole, if employment growth increases as planned in the NPIER, then it will only be sustainable if the rate of growth of the labour force keeps up, which means supporting economic growth with sufficient housing.

Figure 22: Relative growth of Employment and Workforce, by travel to work area, 2015-2017

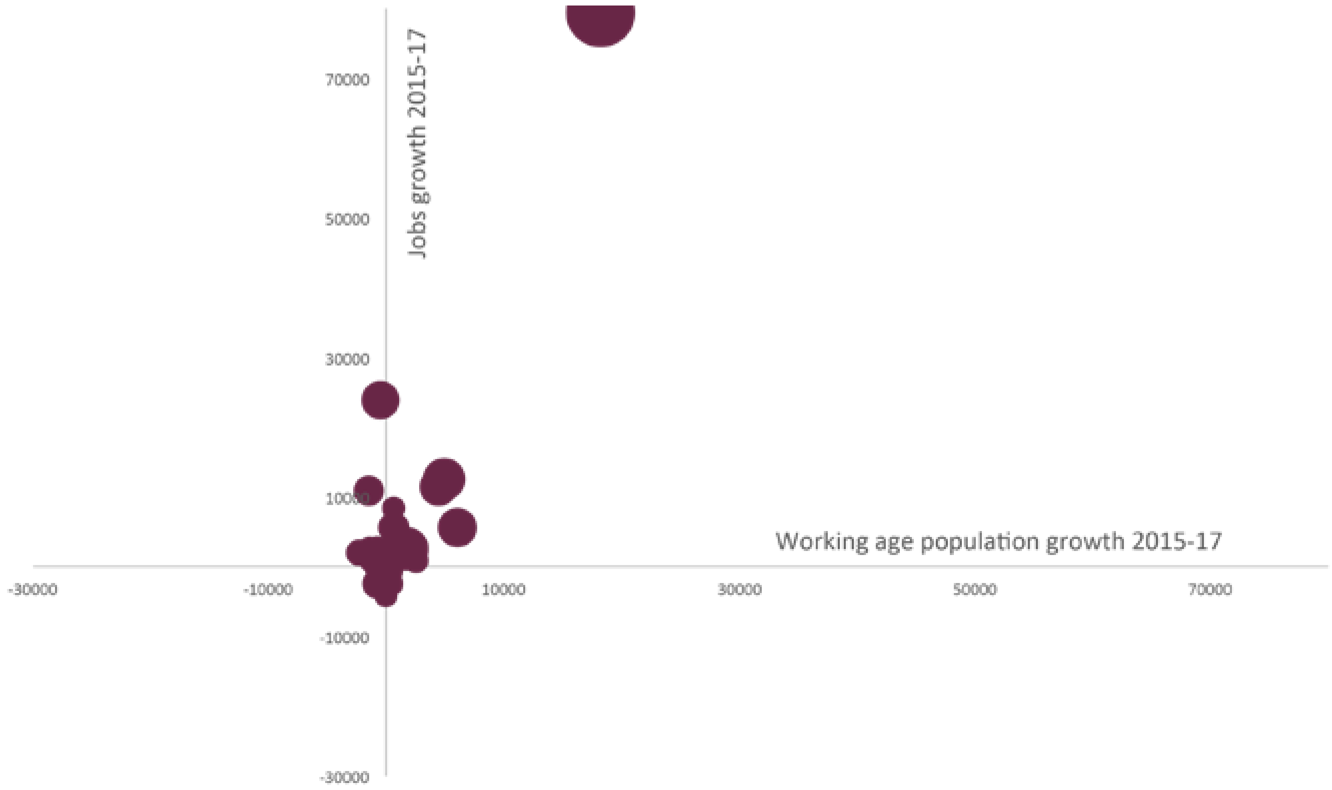
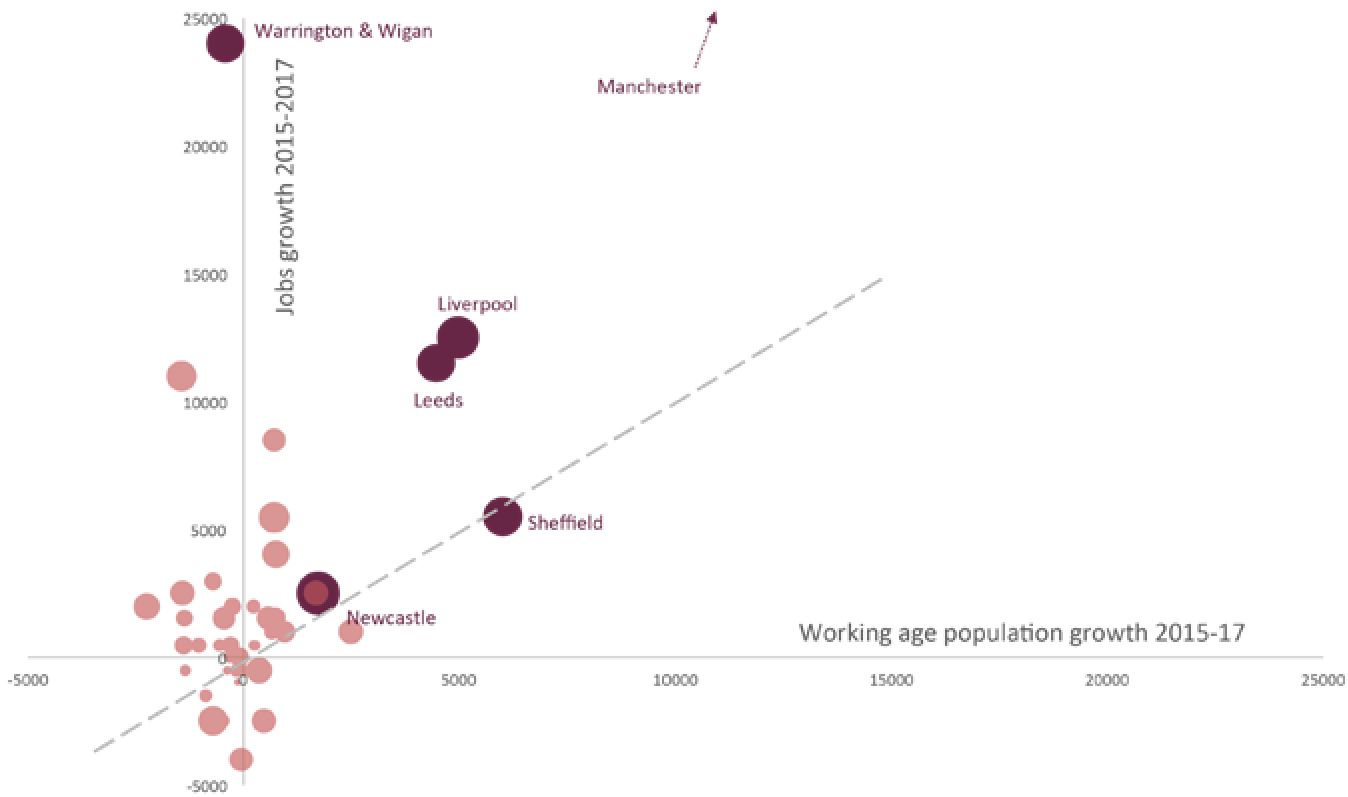


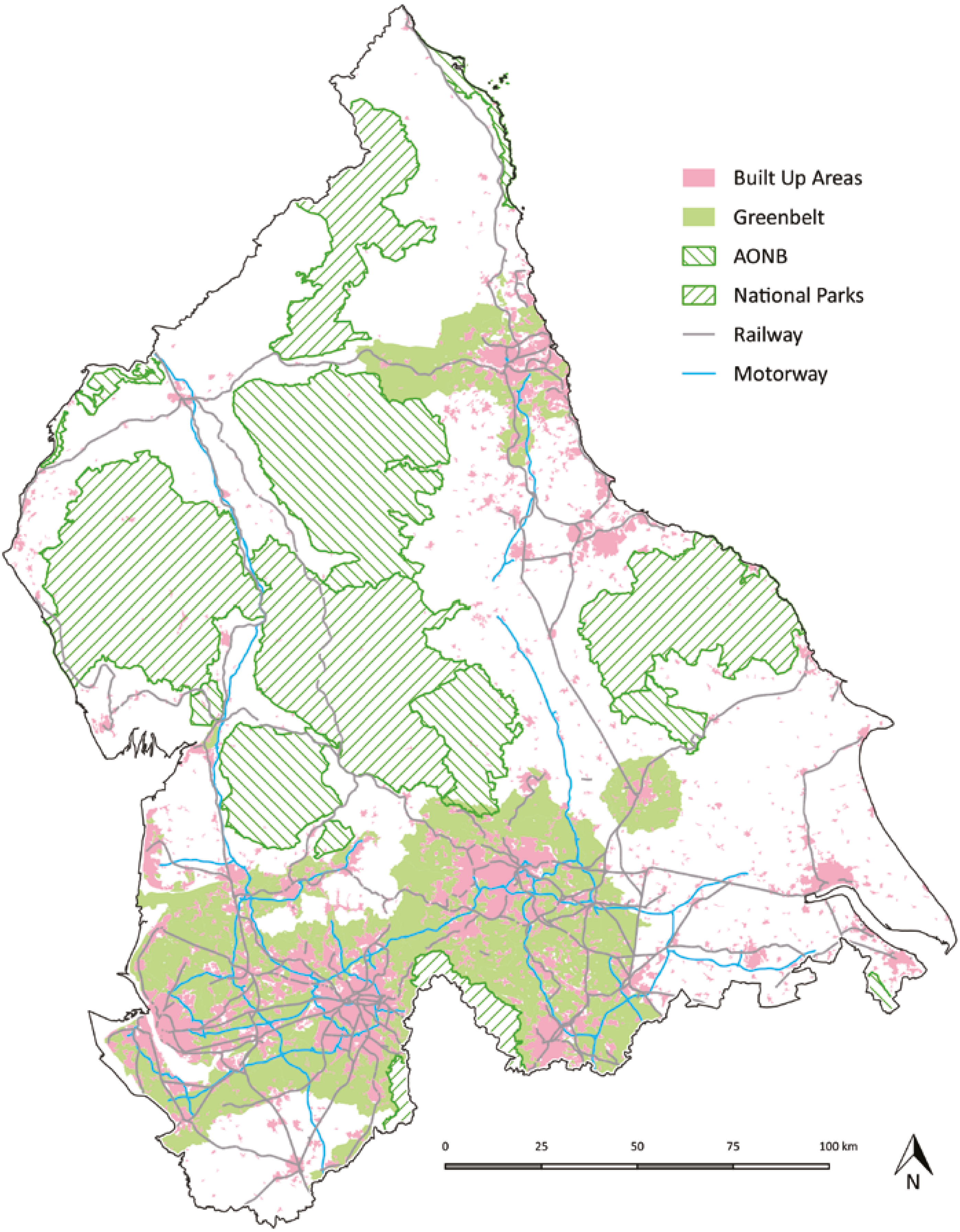
Figure 23: Relative growth of Employment and Workforce, by travel to work area, 2015-2017 (excl. Manchester)



6.9 Land uses by area, brownfield database

The location of new housing is not just determined by demand. Constraints and land availability are an important consideration. Figure 24 shows the huge extent of the protected valuable landscapes across the North, as well as the planned constraints on urban growth through green belt designations.

Figure 24: Land uses and protected land in the North



Opportunities also exist within the built up areas. As part of this research we have analysed and mapped the published brownfield databases of all 72 local authorities across the North.

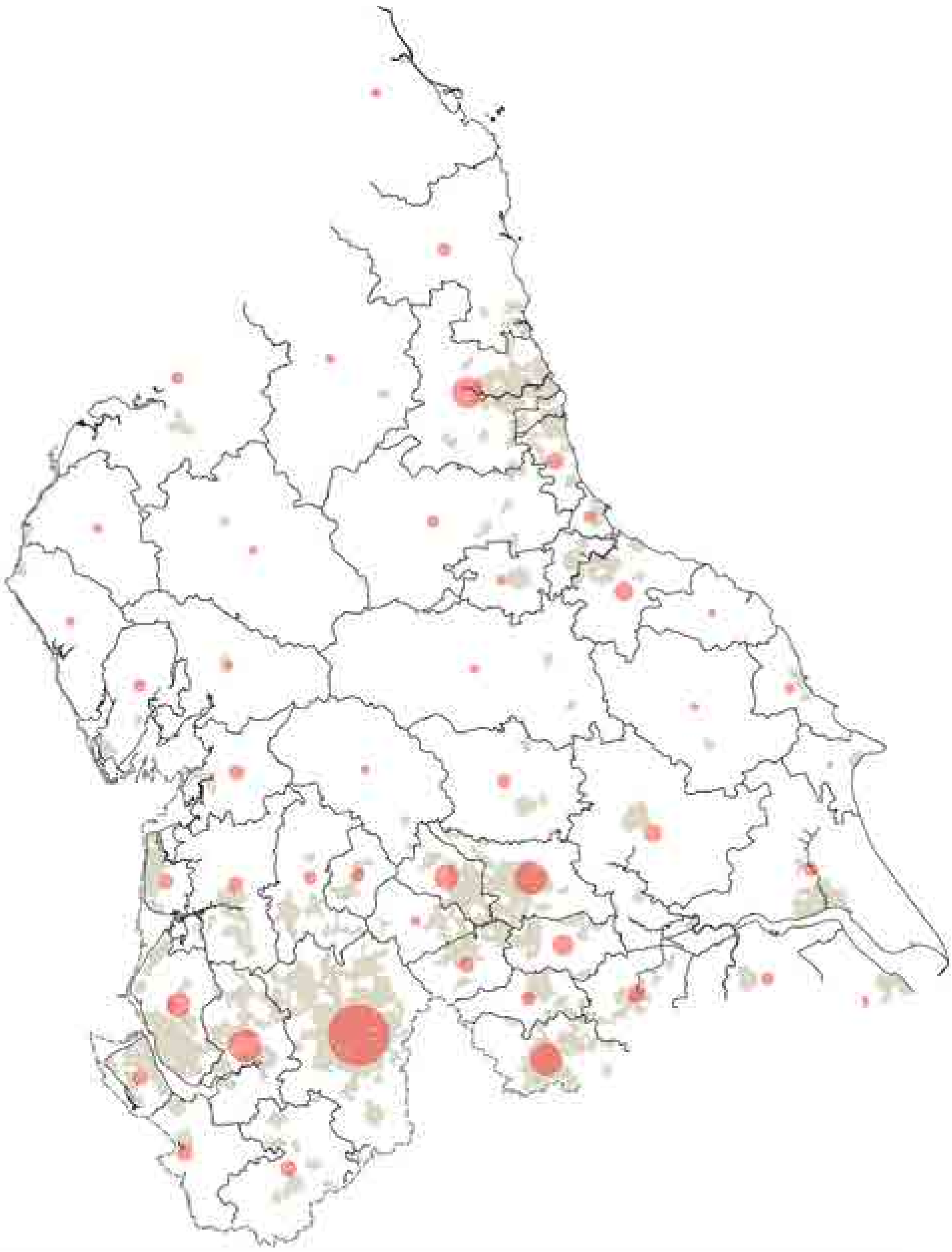
Between them they have over 5,000 identified sites, accounting for 7,800 hectares of land, with an identified capacity of over 300,000 homes.

Figure 25 shows brownfield sites across the North in grey, with the combined housing capacity represented by the red circles, aggregated by travel to work area.

Two thirds of that brownfield housing capacity is within the seven biggest travel to work areas.

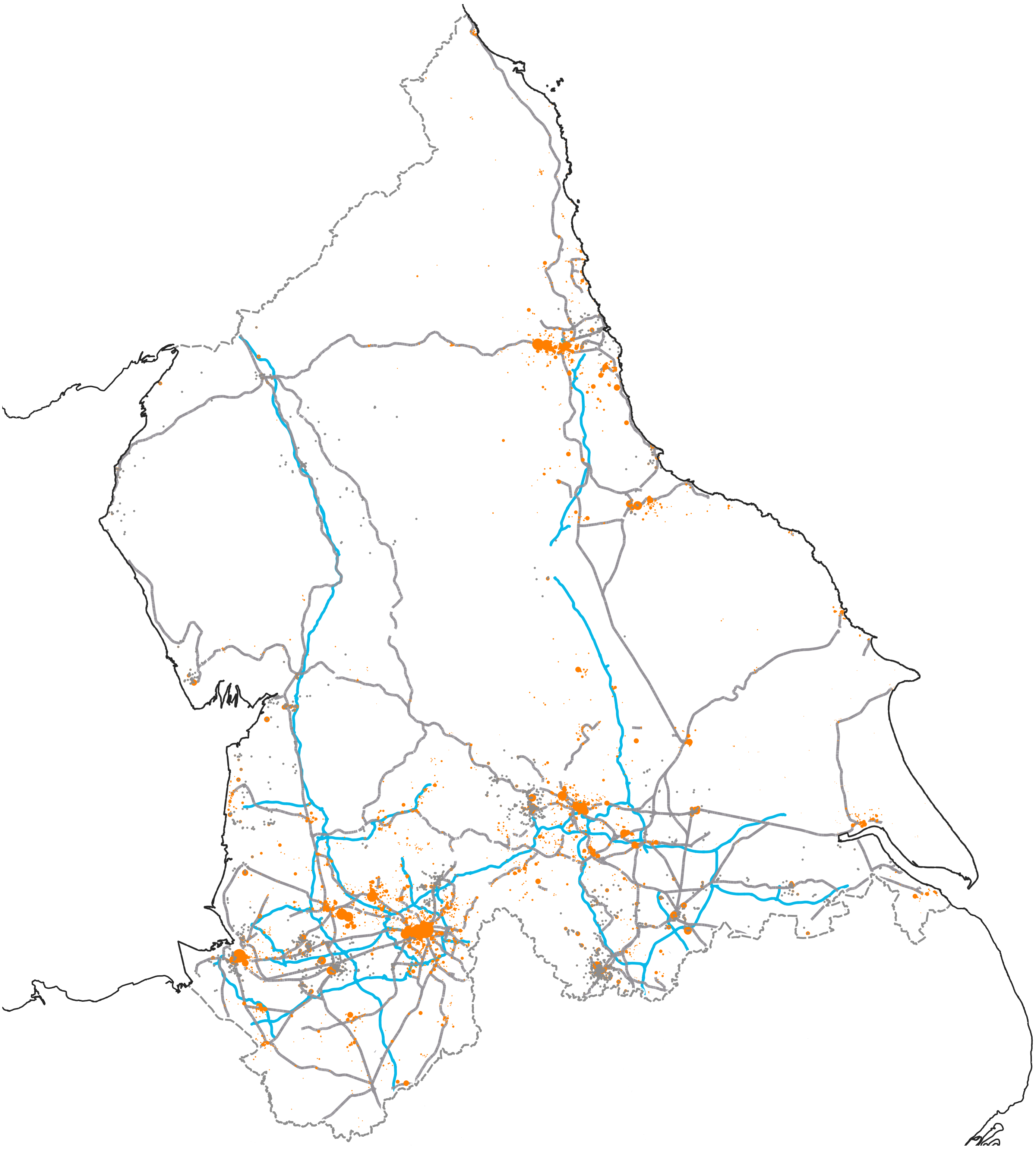
- Liverpool
- Warrington & Wigan
- Manchester
- Leeds
- Bradford
- Sheffield
- Newcastle

Figure 25: Brownfield land capacity



This brownfield land is not only well located in relation to employment (represented by the travel to work areas), but also in relation to the transport network. Figure 26 shows that many of the largest clusters of brownfield land are close to the existing rail network, albeit the capacity, frequency, reliability or quality of those rail links are not always sufficient.

Figure 26: Brownfield land and the existing transport network



6.10 Workplace zones

Figure 29 shows the gap in working age population between the North and the rest of England. This is likely to be largely the result of disparities in economic growth between the North and South – with faster-growing areas attracting and retaining workers, both from the rest of the country and abroad.

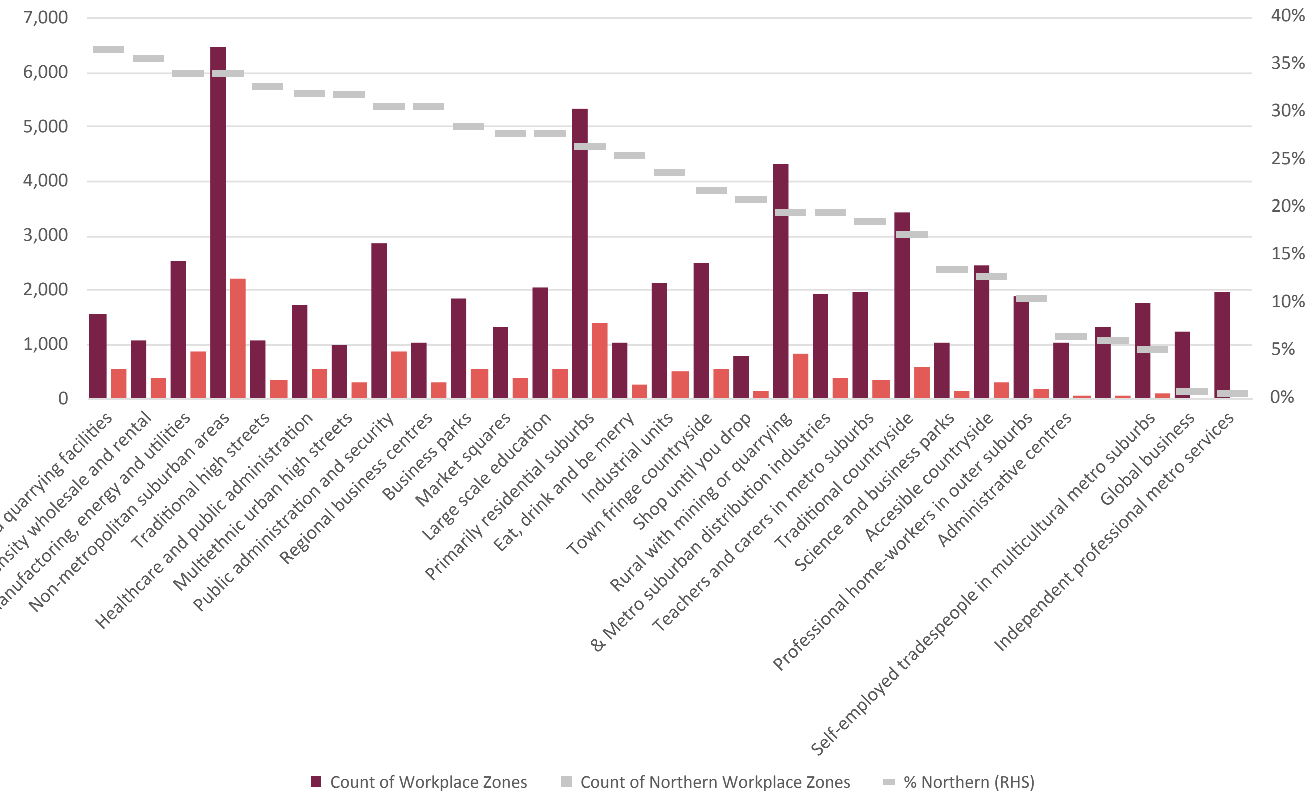
Based on 2011 Census data about workers and workplaces, the ONS Classification of Workplace Zones (COWZ-UK)[14] sorts 60,709 zones across the country into different categories. The characteristics of workers and workplaces used fall under four domains:

- Composition of the workplace population: workplace population density, age and gender profiles, ethnicity, country of birth.
- Composition of the built environment: ratio of Output Areas to Workplace Zones.
- Socio-economic characteristics of the workplace population: highest level of qualification, occupational classification, distance travelled to work, method of travel to work (public, private motor, active), other (fixed place of work or not, work mainly at or from home).
- Employment characteristics of the workplace population: full-time/part-time/self-employed, full time student, industrial sector.

In Figure 27, the prevalence of each type of workplace zone in the UK and in the North is compared – zones over-represented in the North are to the left and vice-versa. Presently, workplace zones which emphasise city-centre, knowledge-intensive industries (e.g. 'independent professional metro services' and 'global business') are poorly represented in the North, with over-representation of lower-value distribution and retail ('low density wholesale and retail').

14 For a fuller explanation of methodology and categories see: https://www.ons.gov.uk/methodology/geography/geographicalproducts/areaclassifications/2011workplacebasedareaclassification/classificationofworkplacezonesfortheukmethodologyandvariables

Figure 27: Count of workplace zones by type in the UK and North; % of zones of each type located in the North



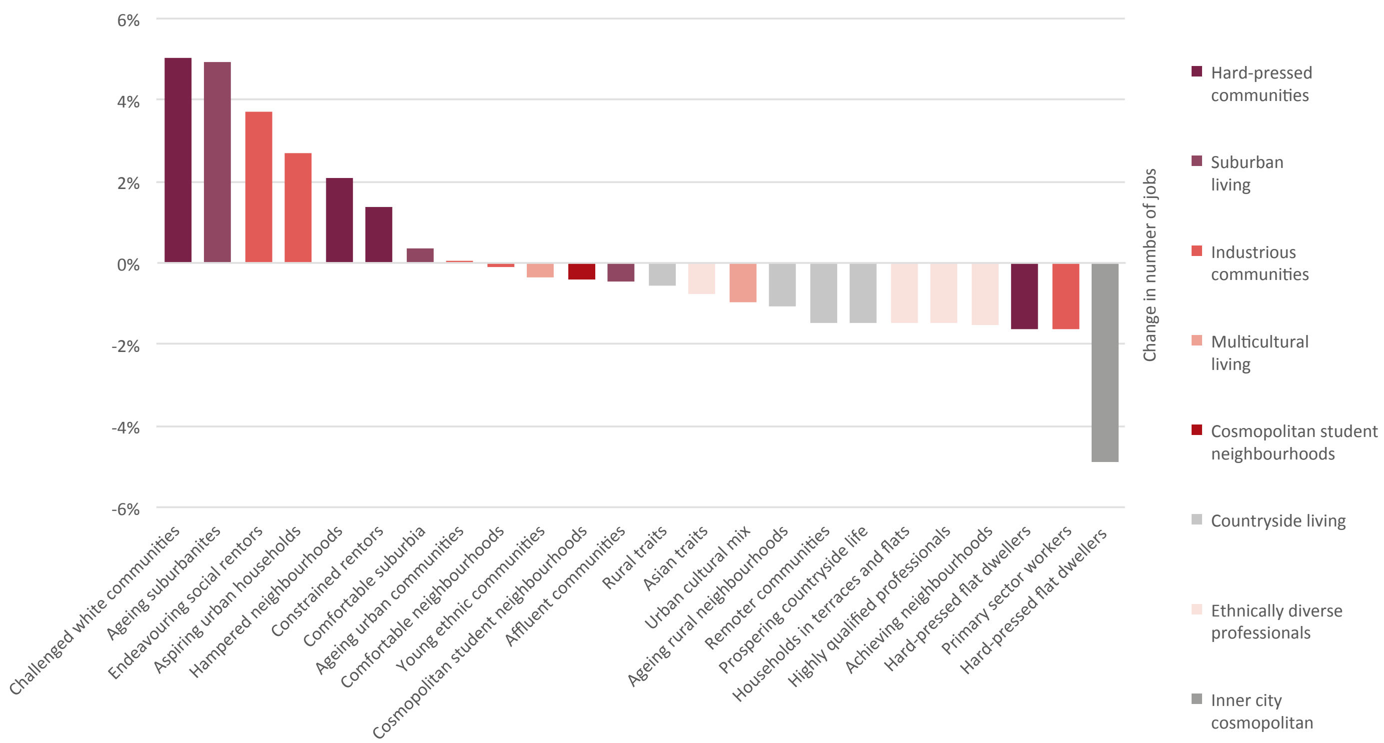
6.11 Super output areas

Similar to the COWZ-UK analysis discussed in 6.9 Workplace zones, 2011 Census data was used to classify super output areas (i.e. areas of roughly equal residential population) across five domains[15]:

- Demographic structure: percentage in communal establishments, population density, age distribution, marital status, ethnicity, country of birth, main language.
- Household composition: percentages of households with no children, non-dependent children, full-time students.
- Housing: type of dwelling, shared ownership, type of tenure.
- Socio-economic character: illness/disability, unpaid carers, highest level of qualification, car ownership, public and active transport use.
- Employment: unemployment, part/full-time employment, occupational sector.

Figure 28 shows the over- or under-representation of these super output areas in the North relative to the UK, with the 'supergroups' containing the subgroups shown on the right. This suggests that struggling and ageing communities are relatively more prevalent in the North, with relatively less representation of professionals and prosperous rural communities.

Figure 28: Classification of super output areas (SOAs): % of Northern SOAs less % of UK SOAs



15 Detailed methodology and classifications at https://www.ons.gov.uk/methodology/geography/geographicalproducts/areaclassifications/2011areaclassifications/penportraitsandradialplots

6.12 Projected changes in working-age population

Analysis of the ONS 2016-based sub-national population projections suggests that the North's population is expected to age rapidly relative to the rest of the country. Figure 28 shows the current age profiles of the North and the rest of England – there are relatively more students and over 50s in the North, but fewer younger workers.

Figure 30 shows that working age population is expected to fall as a percentage of total population in the North and rest of England – but the North's share is already lower and the gap is projected to widen into the 2030s. The result for the North is shown in Figure 31. ONS projections are that while the rest of England's working age population will grow by 5% to 2041, the North's will fall by 2% as non-working age population grows.

Figure 29: Comparison of age profiles (ONS)

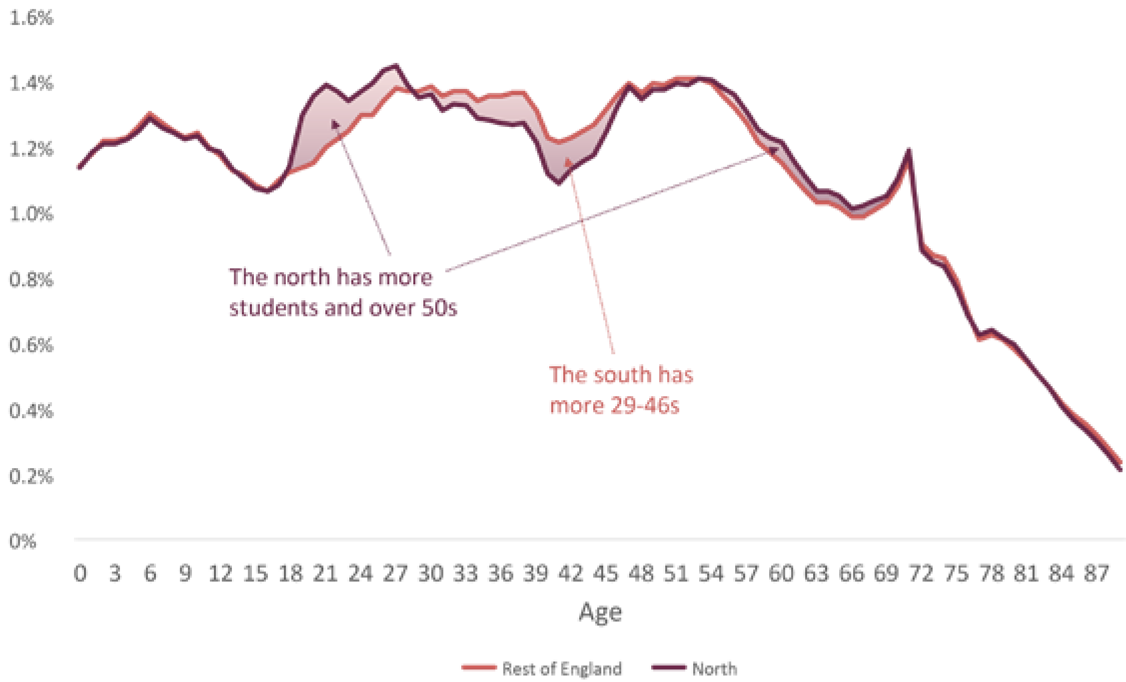


Figure 30: Projected trends in working age population

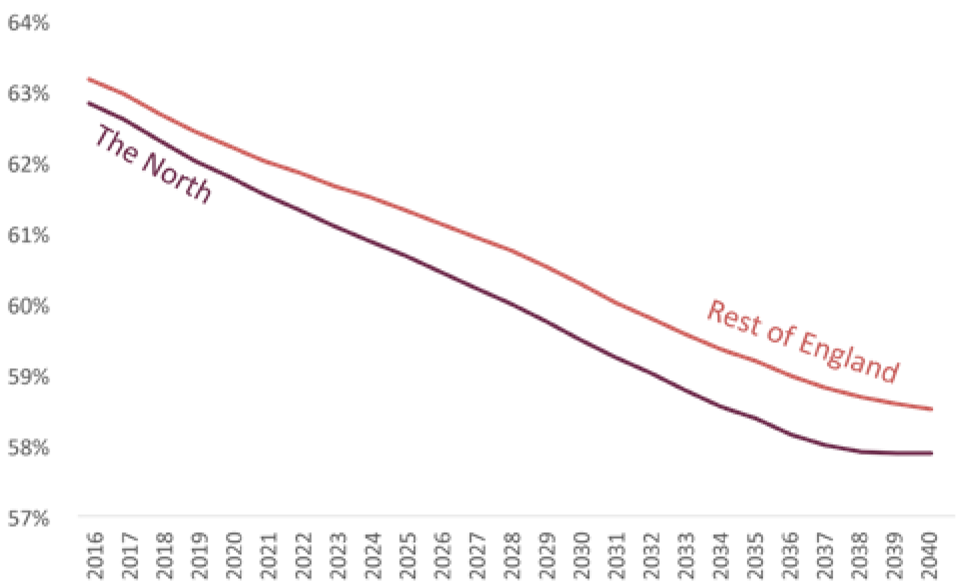


Figure 31: Trends in working/non-working age population in the North

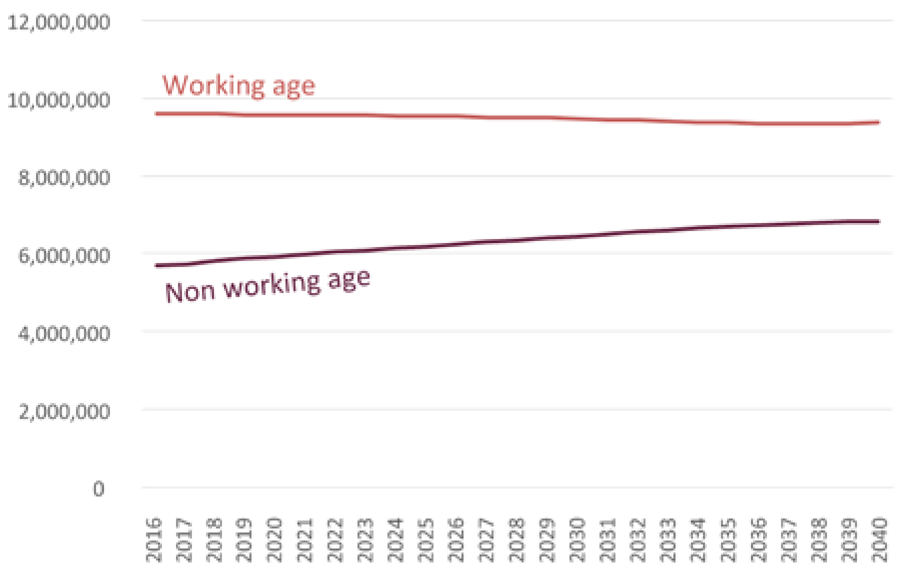


Figure 32: Projected growth or decline in working-age population across the North, 2018 to 2041

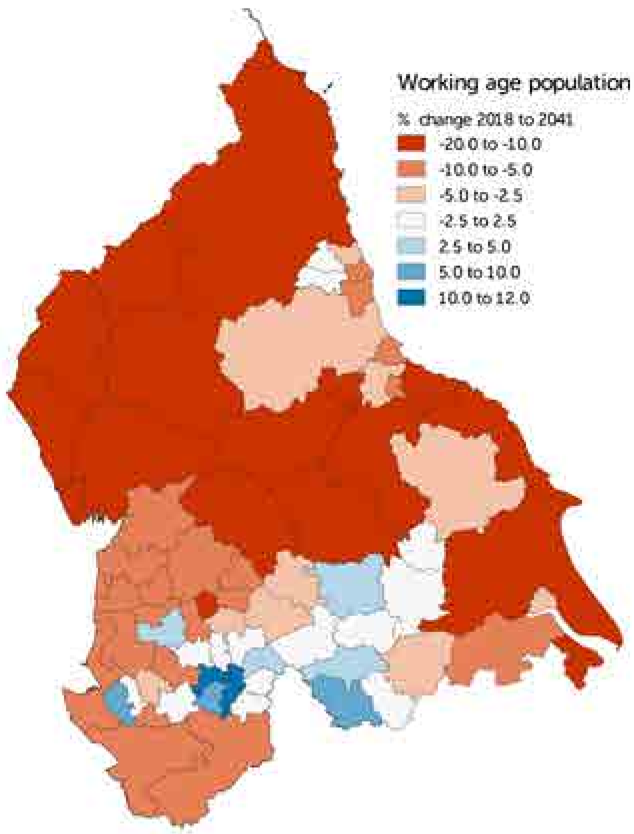
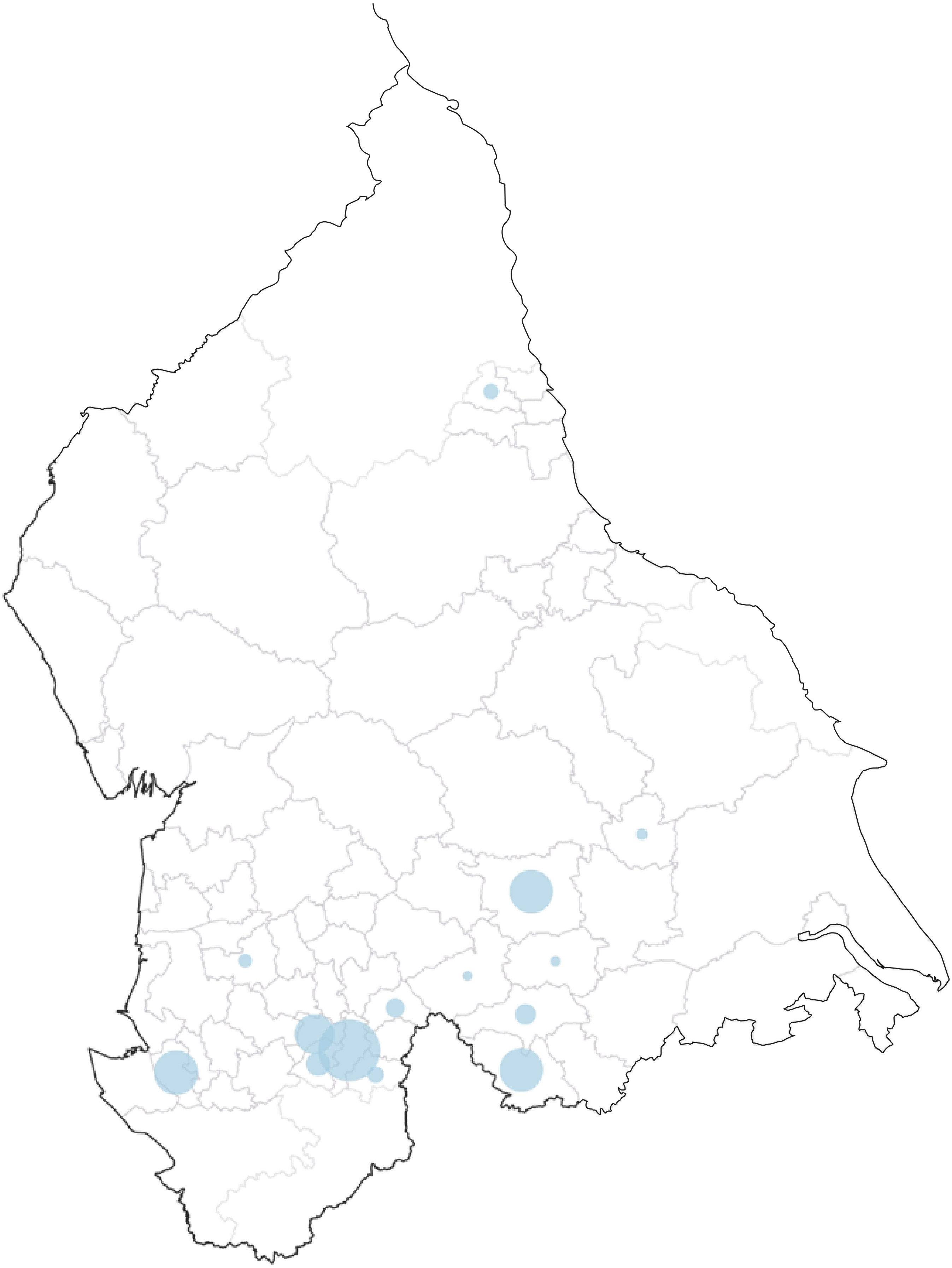


Figure 33 shows the relative size of working age population growth projected in the areas that are growing, illustrating that 90% of that growth is in Liverpool, Greater Manchester, Leeds and Sheffield – i.e. city regions in which knowledge-intensive industries which attract and retain graduates are performing well. Falls elsewhere in the North more than outweigh these gains.

Figure 33: Relative size of working-age population growth, 2018 to 2041, areas with growth projected only



Get in touch

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