

TRANSPORTEAST



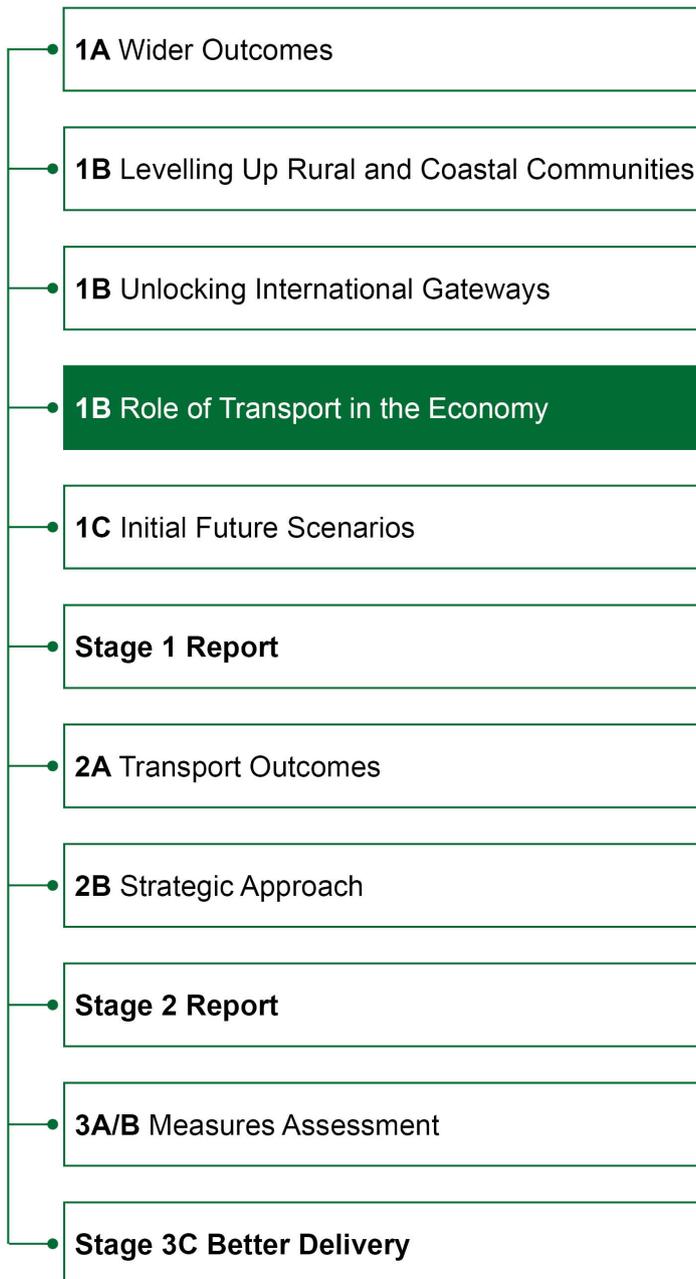
Jacobs

# Transport East Transport Strategy

Role of Transport in Economic Growth  
August 2021



## Transport Strategy Evidence Base



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## Executive Summary

Transport East has a vision for a thriving economy for the East, with fast, reliable, and resilient transport infrastructure driving forward a future of inclusive and sustainable growth for decades to come. Over the next 30 years Transport East wants to transform the region's transport connections to help drive long term economic growth. A Transport Strategy for the region will be developed to take the region to 2050. This Deep Dive topic will provide a deeper understanding into the role of transport in supporting economic growth, informed by the application of economic theory that serves to develop upon the overarching wider outcomes identified in the Stage 1A Wider Outcomes report. In addition, this topic will progress a set of comprehensive scenarios for the future of the Transport East region, directly inputting into the next stage of Strategy development.

In developing this evidence base, engagement with Transport East partners has been undertaken with two key workshops principally to obtain views on:

- How well the current transport network supports economic growth?
- What are the challenges and opportunities as part of COVID-19 recovery and the long-term economic growth?
- What are the most important sectors in the region – how they might evolve or adapt in the next decade and how the transport system can support them?
- What would make the region a more attractive place for graduates and other skilled workers to want to locate – what else could be done to attract inward investment, and how potential growth in remote working affects how this can be achieved, while also reducing transport emissions?
- What is the role of transport in economic growth?

Information gained through these sessions has informed the opportunities and challenges section of this report.

### Economic Theory

This deep dive draws on the theories of evolutionary economic geography to understand the mechanisms through which regional economies evolve over time. The ability of the region to deliver growing economic prosperity for every resident is dependent upon its ability to strengthen the twin self-reinforcing feedback loops of agglomeration and regeneration.

Agglomeration effects are the positive externalities that accrue from the co-location of economic actors over the course of many years. They can be general in nature (urbanisation economies) or specialised (localisation economies). They are driven by several different self-reinforcing mechanisms, including:

- Firm-worker: Accumulation of matched specialised local firm base and local skills base
- Firm-firm: Development of local supply chains and specialised support functions

Agglomeration effects tend to be strongest in tradeable (export-focused) sectors like manufacturing or knowledge services. Improvements in these sectors spill over into the rest of the economy through indirect and induced demand effects: in essence, a prosperous and competitive tradeable sector with strong agglomeration effects leads to a prosperous and successful regional economy.

Transport has a significant role to play in driving forward these agglomeration effects; it does this in a number of ways:

- Better connecting firms and workers across and beyond the region, allowing for better labour matching and a more integrated economy with higher levels of collaboration, specialisation, and greater economies of scale.
- Improving firm's efficiencies and saving on costs of shipping and travel, helping local firms to grow and encouraging firms to locate in the area.
- Increasing quality of life for residents through reduced congestion and emissions, and improved access to employment, education and amenities.
- Helping the area attract skilled workers, by making the area a more attractive and better-connected place to live, with reduced travel time to employment or to see friends and family outside the region.

Long-term trends, such a change to patterns of work and demand for different occupations provides the region with an opportunity to re-focus on quality of life and attracting skilled workers to the area.

### Transport East Regional Context

To effectively understand the specific opportunities and challenges of the region, it is important to identify the unique physical and geographical characteristics of the region and its continued influence over the potential role played by the region both now and in the future:

- The coast is a significant asset to the region providing opportunities for tourism and visitor economies, renewable energy, transport and logistics, with the region having some of the most significant trade and logistics assets in the country.
- The East has major energy capabilities, with a unique mix of wind power, nuclear and natural gas assets.
  - 1,000 wind turbines off the East coast of England.
  - Sizewell nuclear energy power station in Suffolk together with potential for new nuclear facilities at Bradwell, Essex.
  - 60% of offshore wind energy in the UK is generated in the East of England.
- The region has a total farmed area of 1.4m hectares, accounting for 15.3% of total farmed area in England
  - 79% of the farmed area is arable, the largest arable area among English regions.
  - 2004-2016 the East of England accounted for 35% of UK Research Council Funding in plant and crop science, 24% in agri-environmental science and 16% in food science and nutrition.
- Both New Anglia Local Enterprise Partnership (NALEP) and South East Local Enterprise Partnership (SELEP) in collaboration with Local Plans across the region identified the need to concentrate growth in and around existing urban and market town settlements where possible.
  - The most environmentally friendly style of living is urban not necessarily rural.
  - Younger people tend to prefer living in an urban setting making it easier for businesses located in urban areas to attract them.
  - 2018 data indicates rural areas experience net inward migration, while urban areas experience net outward migration (with exception 20-30-year olds).
  - Urban areas have a higher employment share in finance, information and communication, and professional, scientific and technical services. Rural areas specialise in employment related to agri-food, tourism and large-scale manufacturing.
- COVID-19 has dramatically changed travel patterns – significant mode shift to active modes and general reduction in all travel although unknown whether short or long term.
  - The area to the south and west of the region unambiguously forms part of the London Commuter Zone.
  - Close proximity and travel time to London allows for ease of commuting, but also benefiting business collaboration or engagement in supply chains.
- There are several growth and technology orientated corridors intersecting the region, with London having the largest economic influence driving development along it's radial economic corridors. Cambridge is also a core attractor for talent and economic activity.
  - London – Stansted – Cambridge corridor
  - London to Lowestoft corridor
  - London to Southend corridor
  - East – West orbital routes
  - Cambridge – Milton Keynes – Oxford arc
  - Norwich – Cambridge Technology corridor
  - East – West to Felixstowe corridor
- A fundamental role of transport in relation to this report is accessibility for citizens to economic activity such as offices or retail.
  - East Anglia tends to see lower levels of Access to Economic Mass than England as a whole, with slightly higher levels seen around Norwich and the west of Essex.

Building upon the aforementioned theoretical basis of this report, specific strengths, weaknesses, opportunities and challenges are identified and divided into Sectoral Structure and Human Capital and Skills as follows:

	Sectoral Structure	Human Capital and Skills
<b>Strengths</b>	<ul style="list-style-type: none"> <li>▪ Mix of sectors have an important influence on productivity</li> <li>▪ Natural advantages increasing farming productivity</li> <li>▪ Coastal environment boosted growth in offshore renewables</li> <li>▪ Niche strengths in life sciences, biotech and advanced manufacturing</li> <li>▪ Key sectors of transport and logistics - facilitated by major seaports</li> </ul>	<ul style="list-style-type: none"> <li>▪ Providing local residents with the right combination of skills required by local industries</li> <li>▪ Building excellence in STEM disciplines which are most relevant for the area's high impact sectors</li> <li>▪ Existing knowledge institutions providing a constant stream of knowledge worker in the local economy</li> <li>▪ The area's higher education spending on R&amp;D is about 2.8 times the national average</li> </ul>
<b>Weaknesses</b>	<ul style="list-style-type: none"> <li>▪ Not all sectors translate into higher productivity i.e. those less specialised</li> </ul>	<ul style="list-style-type: none"> <li>▪ Knowledge intensive industries require graduate workers recruited from a national pool</li> <li>▪ Graduate retention</li> <li>▪ Education level NVQ4 or above in New Anglia 30.9% and Essex 33%, below the national average.</li> </ul>
<b>Opportunities</b>	<ul style="list-style-type: none"> <li>▪ Specialism in green energy generation, agri-tech and Agri-food, and their associated skills will benefit the simultaneous decarbonisation of several different sectors</li> <li>▪ Improved transport connectivity based upon business specific needs to support tech clusters</li> <li>▪ Visitor Economy (rural &amp; coastal assets), with long-term inter-region movements considered for efficient, reliable and environmentally friendly transport.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Skills development programmes for existing residents</li> <li>▪ Attraction and retention of skilled workers</li> <li>▪ Consider the role of transport in connecting residents to education &amp; training opportunities and employment</li> <li>▪ Using transport to improve quality of life, attracting the workforce to relocate – considering low car ownership of young graduates and emphasis on public transport &amp; active modes</li> </ul>
<b>Challenges</b>	<ul style="list-style-type: none"> <li>▪ Low-carbon energy generation, agri-tech &amp; agri-food make heavy use of transport infrastructure, so need to drive towards accounting for these needs more sustainably.</li> <li>▪ High-tech clusters are not location bound and can easily relocate if conditions become less favourable.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Rural and coastal connectivity to education, training and employment</li> </ul>

These issues are translated into distinct economic goals for future appraisal, aligning with the wider outcomes established earlier in evidence base development, which combined all three components of the triple bottom line (economic, social and environmental goals). This relationship is shown in the following table, as well as identifying the role of infrastructure in achieving these.

<b>Wider Outcomes</b>	<b>Economic Goals</b>	<b>The Role of transport strategy</b>
Protect and enhance the built and natural environment	Implement green recovery strategy	Infrastructure enables both modal shift and technological shift (as appropriate), and drives transition to sustainable / zero carbon
Support skills, retention and inclusion and employment opportunities	Attract skilled home workers  Improve Graduate Retention	High quality local infrastructure can improve quality of place, but mostly by improving access to main cities, London and international gateways, area becomes attractive proposition to “1 day a week” commuters  Transport and digital infrastructure can improve attractiveness – either through improved quality of place, or greater accessibility to family, friends and leisure opportunities
Promote a productive and diverse economy	Integration with Cambridge and London economies	For those nearer districts – well coordinated infrastructure led development that maintains high quality business and residential locations to allow Cambridge and London innovation ecosystems to expand organically
Focus on locally important growth areas	Build high-value clusters	Enabling extension of existing centres, coordinate infrastructure with housing and commercial property developments, identify needs of specific clusters, improved access to domestic and international markets
Support the energy sector (primarily offshore wind)	Bring jobs to coastal communities	Infrastructure can have a range of direct and indirect impacts, from boosting local service demand via encouraging tourism and WFH relocations, to providing greater access for coastal residents to employment and education opportunities
Reducing carbon emissions in the East of England and Promote active, healthy and safe lifestyles	Address over-reliance on private car use	Infrastructure can enable modal shift where possible, however more than most geographies, East of England is reliant on a strong roll-out of EV infrastructure to encourage rapid technology shift in order to meet zero carbon goals
Digital connectivity	Address rural peripherality	Targeted combination of digital and local transport infrastructure towards local centres allows rural residents to partake more easily in local economy

### Engagement with Partners

During December 2020 two key workshops were held with Industry Experts to ascertain and understand their thoughts, challenges and opportunities associated with the role that transport infrastructure and policy can play in economic recovery. The key themes which emerged from these workshops include opportunities for a post COVID-19 recovery, the most important sectors in the region, and what would make the region more attractive.

In summary when delegates were asked what the key role of transport is in supporting the economy, they felt that:

- Transport is significant piece of the puzzle to supporting economic growth, but recognition that it is just a piece and there are other contributing factors
- The region has existing assets and industry to thrive so it is a question of how can transport can help to capitalise
- Transport needs to be better funded in the East, whether through the private or public sector
- Summary and Conclusions

The impacts of both macro-economic (e.g. Brexit), social (e.g. growth in remote working) and technological (e.g. automation) factors will be felt on both firm strategies and locational decisions. Resident migration and commuting patterns, both need to be carefully considered in any strategic transport plan whether this be dispersed or centralised growth plans.

Complementary strategies should be sought that balance long-term economic development objectives with both other social and environmental objectives and where possible, short-term economic recovery strategies. Most importantly, transport planning must be integrated with wider spatial and sectoral development plans wherever possible.

The resultant transport strategy must balance long-term economic development objectives with both other social and environmental objectives, and short-term economic recovery strategies. Focus from an economic perspective needs to include:

- Improve the poor transverse connectivity across the region and beyond, to support our key sectors
- Maintain and improve international / UK connectivity and our radial connections
- Improve first-mile last-mile options and reduce high car dependency

# 1 Introduction

## 1.1 Introduction to the Transport Strategy

Transport East has a vision of a thriving economy for the East, with fast, reliable and resilient transport infrastructure driving forward a future of inclusive and sustainable growth for decades to come. Over the next 30 years Transport East wants to transform the region's transport connections to help drive long term economic growth.

The Transport East region is formed of three counties (Norfolk, Suffolk and Essex) and two unitary authorities (Southend-on-Sea and Thurrock). Norfolk Suffolk and Essex have two tiers of local governance and each county is divided into several districts, boroughs and cities. Essex has the largest number of districts (12), followed by Norfolk (7) and Suffolk (5). Southend-on-Sea and Thurrock are unitary authorities with single tiers of local governance responsible for all local government functions within their administrative areas.

The development of the Transport Strategy to 2050 will comprise the following elements:

- Stage 1 – understanding the role of transport and the potential for change
- Stage 2 – developing an evidence driven strategic approach
- Stage 3 – define a package of strategic measures and better ways to deliver

This will ultimately be accumulated into a single Transport Strategy for the Transport East Region to 2050.

## 1.2 Introduction to the Deep Dives

Transport East produced an evidence base in 2019<sup>1</sup>, and published the Transport East Decarbonisation Report in November 2020<sup>2</sup>. There is a need to strengthen and complete this evidence base, to align with new and emerging policies and the post COVID-19 context. Investors in the region (e.g. government, private sector) will need to understand why future proposals will deliver the region's unique outcomes, and to do this there is a need to put forward a compelling case to seek the necessary funds to deliver the outcomes.

Transport East has highlighted three specific topics where more detail or deep dives (both generally and specifically) are required. These are:

- Understanding of the role of transport in 'levelling up', particularly in re-energising the coast and supporting rural communities
- The role and opportunities for the transport system to support future economic growth, including COVID-19 recovery and longer-term economic goals
- Unlocking the potential of our international gateways to support the national economy (including the shift of freight from road to rail and other opportunities).

Each deep dive review sets out an evidenced baseline, identifying the opportunities and challenges, and the case for transport investment. These not only review the Transport East area, but also neighbouring areas in which policies, strategies or projects will impact on our area. These technical notes are supplemented with short infographic summary collateral material, for use on Transport East's website and in any future presentations.

This Deep Dive topic will address the role and opportunities for the transport system to support future economic growth. This will outline pertinent economic theory and its application in exploring the role of transport in the economy, areas of growth opportunities and challenges, resulting in the development of economic goals to be taken forward for further appraisal.

<sup>1</sup> WSP (2019). Transport East – Regional Evidence Base. Available at: <https://www.transporteast.org.uk/wp-content/uploads/Transport-East-Regional-Evidence-Base-3.pdf> [accessed 2 February 2021]

<sup>2</sup> Transport East, 2020. Decarbonisation Evidence Base and Strategic Recommendations Report. Available at: [https://www.transporteast.org.uk/wp-content/uploads/Transport-East-Decarbonisation-Evidence-Base-and-Strategic-Recommendations-Report\\_WEB.pdf](https://www.transporteast.org.uk/wp-content/uploads/Transport-East-Decarbonisation-Evidence-Base-and-Strategic-Recommendations-Report_WEB.pdf) [accessed 2 February 2021]

### 1.3 Wider Outcomes

As part of the development of its Transport Strategy, Transport East set out a series of wider outcomes that it was looking to achieve through the delivery of its Transport Strategy. These wider outcomes will be used to inform the 'WHY' of the transport plan and aid in the testing of future transport scenarios. They will be used to set clear agreed outcomes supporting the planning and implementation of a successful transport strategy. The wider outcomes were derived through the collation of existing economic, social and environmental goals and outcomes that partners have already set out in Local Plans, Local Industrial Strategies and other documents. This exercise produced key words, phrases and challenges which enabled the creation of word clouds to provide a visual representation of distilled themes. These initial themes were discussed with key stakeholders through workshops. The following wider outcomes were agreed upon through an iterative process where emerging outcomes were shared, reviewed and updated.

The shortlisted themes from the existing strategies, plans and policies were then moulded into a clear and actionable list of intended wider outcomes for the Transport Strategy:

- Reducing to carbon emissions in the East of England to net zero
- Protecting and enhancing the built and natural environment – ensuring the region retains and enhances its varied and important landscape, heritage and biodiversity features.
- Promoting and supporting a productive and diverse economy - highlighting the sub region's role as a place to work, do business and transport goods efficiently to drive up regional productivity contribute to the wider UK economy (urban, rural and coastal centres, London, and International gateways).
- Supporting the energy sector, in particular, offshore wind, renewables, nuclear, alternative fuels and electrification.
- Focussing on locally important growth areas (rural, urban, and coastal) ensuring they grow sustainably and provide high quality, distinctive places to live, work and visit (heritage, culture, place, tourism, resilient high streets).
- Supporting skills retention and inclusion across the region with accessibility to education, training and employment opportunities e.g. through 'travel to learn' facilities.
- Promoting active, healthy and safe lives (improved air quality, active travel and healthier populations).
- Seeing digital connectivity as a key enabler supporting all outcomes.

More information regarding the methodology and evidence behind the wider outcomes can be found in the Stage 1A Wider Outcomes technical note.

### 1.4 Content of the Technical Note

The purpose of the remainder of this technical note is to identify and discuss the various mechanisms through which transport interventions can help achieve the desired outcomes listed above. To do this, it is first necessary to examine the theories and evidence as to the drivers of regional economic growth, the role of transport in delivering this, and the wider economic context. It then looks at the specific opportunities and challenges faced by the region and identifies several conclusions to be taken forward for further analysis or development. The remainder of this Technical Note therefore discusses the following sections in turn:

- Section 2 – Economic Theory and Context – identifying the mechanisms through which regional economies develop over time and the role of transport in this.
- Section 3 – Regional Context – identifying and discussing the physical and geographical context of East Anglia, Essex, Southend-on-Sea and Thurrock and their influence on the role of the region.
- Section 4 – Economic Opportunities and Challenges – building upon the economic theory to review strengths/weaknesses, opportunities/challenges across the region.
- Section 5 – Partner Engagement – reviewing the outcomes from the engagement undertaken with Partners during December 2020
- Section 6 – Role of Transport in Achieving Objectives – reviewing how transport infrastructure can contribute to achieving the identified economic goals
- Section 7 – Conclusion and what this means for the Strategy

## 2 Economic Theory and Context

In subsequent sections there will be an outline of the various ways in which transport investment, as part of a larger package of measures, can help the region achieve its non-transport objectives, as laid out in section 1.3, above. However, in order to do this in a rigorous manner, the mechanisms through which regional economies develop over time, the role of transport as a driver of economic growth, and the impact of the recent economic context must also be considered.

### 2.1 Theories of Regional Growth

Before attempting to identify the best route to economic growth in the region, it's important to first identify both the types of desirable economic growth and the routes through which this can be achieved. Over the past thirty years, several key theoretical and empirical developments have taken place in the field of economic geography, with the influence of the traditional "neoclassical" approach diminishing, and increasing attention paid to the insights of other fields of social science. Leading economic thinkers as wide ranging as Paul Krugman and Michael Porter have argued for the importance of a geographical perspective when understanding the dynamics of the economy, bringing to the forefront new economic concepts such as clustering and agglomeration. This approach was denoted "New Economic Geography".

Over the same period, the theory of "evolutionary economics" has been developed by economists and sociologists on both sides of the Atlantic in order to better explain the complex dynamic evolution of firms and sectors over time. The emerging field of Evolutionary Economic Geography (EEG) is the first major attempt to synthesise these two fields, bringing both geography and history to bear on economic analysis.<sup>3</sup>

EEG therefore deals with the way in which spatial economies evolve over time. Its theoretical framework offers the most compelling and convincing explanation of the spatial patterns and technological specialisations of economic development over time, from the emergence of industrial Manchester, to the rise and fall of the motor industry in Detroit, to the successful innovation ecosystems of Cambridge and Silicon Valley. To do so, it draws on three concepts, shown in figure 2.1:

- Generalised Darwinism is the fundamental underpinning of evolutionary theory; in this context, rather than studying the evolutionary dynamics of animal populations, scientists study the way in which firm populations react, grow and evolve over time
- Path Dependence theory identifies the role of historic trends in the potential for future economic development options; in particular the way in which stocks of specialised assets and capabilities accumulate over time, setting the conditions for future economic development.
- Finally, complexity theory identifies the way in which the economic system as a whole responds to shocks; it attempts to identify the presence of both balancing and reinforcing feedback mechanisms and the means to influence these.

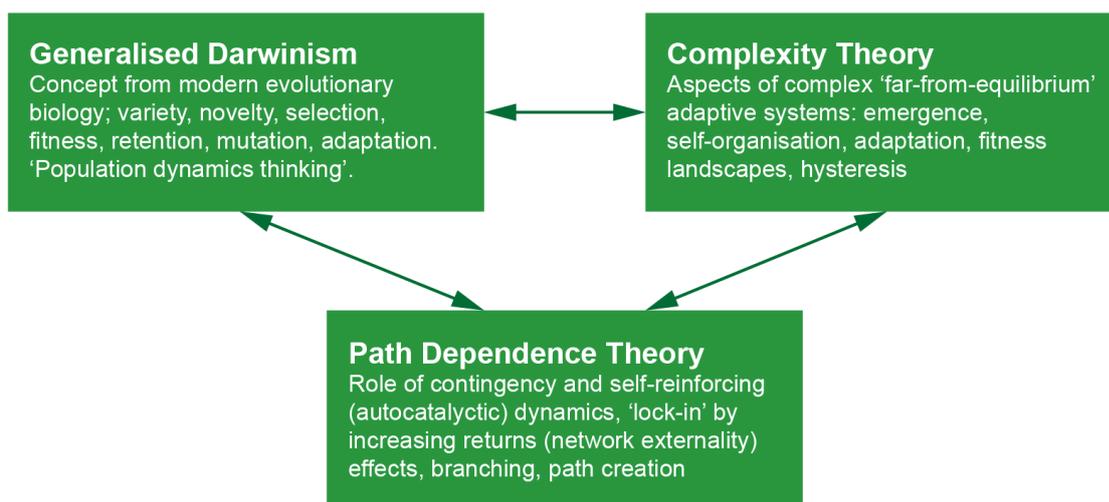


Figure 2.1: Concepts of economic development over time<sup>4</sup>

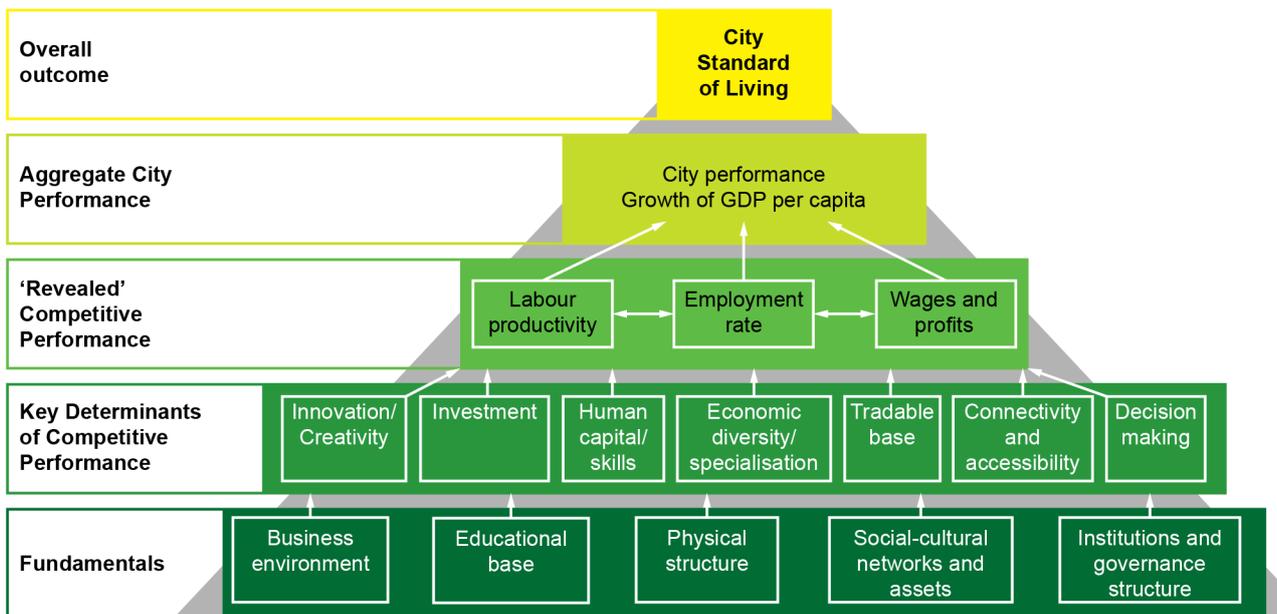
<sup>3</sup> Martin and Boschma, 2010, "The Handbook of Evolutionary Economic Geography"

<sup>4</sup> The Handbook of Evolutionary Economic Geography (2010, Boschma, Martin)

From EEG emerge several frameworks that aim to conceptualise and explain the links between different factors and elements in regional economic growth. These all aim to link the fundamental building blocks of economic growth to the ultimate desired outcome – in most cases, a high standard of living for residents. The route through which the chain of causality links these depends on the exact model, but they all incorporate the three key elements: evolution of the firm population over time, the impact of stocks on directing future flows, and the importance of feedback mechanisms.

The “pyramid model” (Figure 2.2) presents a depiction of the way in which the ultimate objective – that of standard of living – is driven directly by the dynamic processes of regional competitiveness, that are themselves built upon a base of slowly-evolving fundamental factors. This model thus outlines the shape of the causal linkages between transport infrastructure and ultimate non-transport objectives.

### The determinants of a city’s economic performance



**Figure 2.2: Pyramid model<sup>5</sup>**

The third figure (Figure 2.3) varies only in that it explicitly frames the dynamic processes of agglomeration and competitiveness as a self-sustaining feedback loop, the effects of which can build slowly over time to produce increasingly positive outcomes. Here the role of transport infrastructure is seen as a catalyst for the initiation or acceleration of this loop. It is now necessary to expand on the different types of feedback loop, and the role of transport in driving them, discussed in the next section.

<sup>5</sup> Pyramid Model CE Collaboration

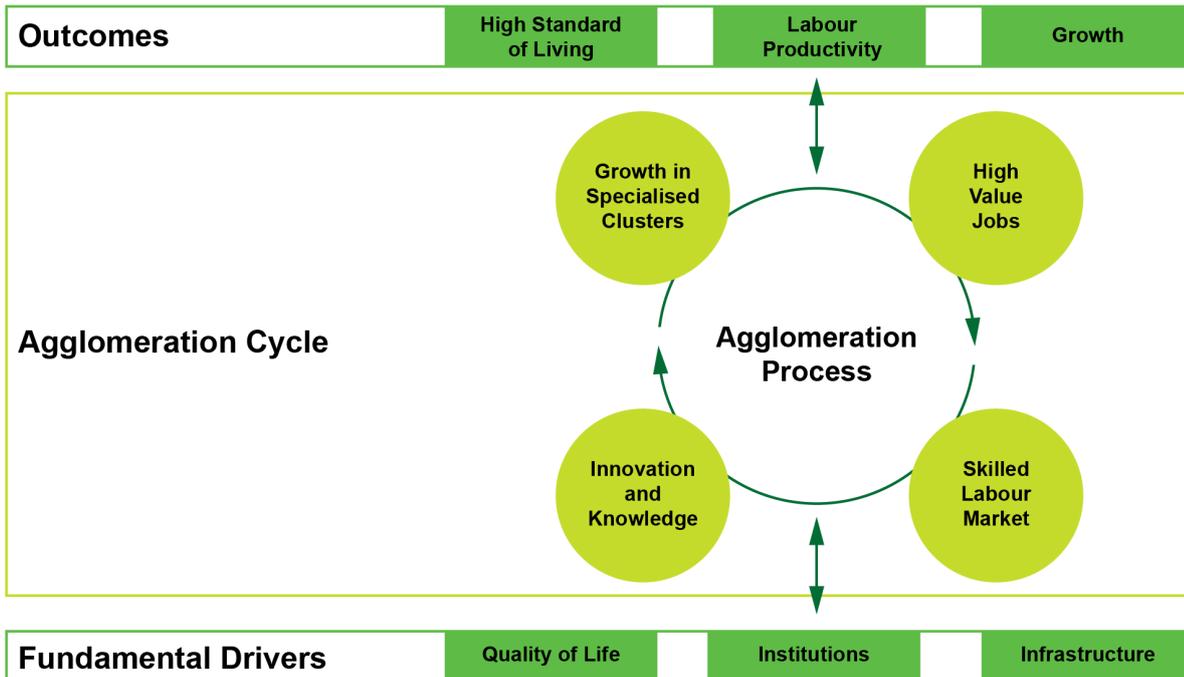


Figure 2.3: Agglomeration process<sup>6</sup>

## 2.2 The Role of transport infrastructure

Building on these wider theories of regional growth, it's important to identify the specific mechanisms through which transport interventions impact on regional economic evolution. The impact of transport infrastructure interventions tends to be grouped into two categories: static impacts are those which capture the various direct effects of the new infrastructure on existing firms and residents, whilst dynamic impacts are those related to any induced changes in spatial patterns of population, employment and land use, and subsequent knock-on impacts. Although static impacts are generally understood to be the causal precursor of any subsequent dynamic impacts, the dynamic impacts often leave the more significant long-term legacy of change. It's therefore the dynamic impacts that are most relevant to a long-term transport strategy.

## 2.3 Static Impacts

Static Impacts can be sub-divided into two groups: direct impacts on firms, and direct impacts on residents.

**Static Impacts on Firms:** There are several ways in which improved transport infrastructure can affect existing firms in the locale of the intervention:

- 1 Reduction in costs of shipping and freight movements – either to ship final products or to access physical inputs, has a direct, but in most cases quite small, impact on firm profitability and productivity. It can also lead to an expansion of the viable pool of suppliers and customers; given imperfect knowledge, the impact here is uncertain and non-linear – the benefits of superior connections could in theory outweigh the additional cost savings.

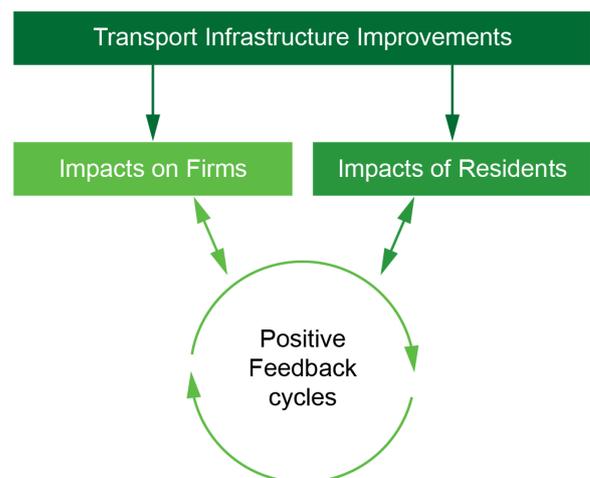


Figure 2.4: Feedback cycle of transport infrastructure improvements

<sup>6</sup> Martin, Tyler, Pike, Gardner CE Collaborative Work

- 2 Reduction in costs of business travel – either for client, supplier or collaborator engagement. As with shipping costs, the direct cost savings are definite but small, whereas the benefits of new collaborations and service markets are uncertain but potentially transformational in scale.
- 3 Access to a larger labour pool, as previously unattractive commuting movements become more viable. Larger labour pools are generally considered to provide better job-worker matches, and improved labour productivity and innovative capability. Note the complementary impact of COVID-19 induced behaviour changes.
- 4 Access to a larger pool of customers in physical attendance at premises – an intervention that leads to an increase in local footfall provides increased demand for local service sector firms, with a direct impact on output and, most likely, profitability. Improved economies of scale can also impact productivity.

**Static Impacts on residents:** Similarly, there are several mechanisms through which transport interventions benefit local residents:

- 1 Interventions that improve speed, safety and reliability of local transport networks and reduce congestion and pollution, provide direct benefits to local residents and lead to a direct increase in quality of life.
- 2 Improvements in inter-regional or inter-national connectivity provides local residents with better access to tourism and recreation opportunities and ability to visit friends and family – again, a direct increase in quality of life.
- 3 Increases in access to employment opportunities, providing residents with a greater choice and selection of jobs, providing greater potential earnings and improved job-worker matching.
- 4 Increased access to education and training opportunities, allowing residents to upskill and increase local stock of human capital.

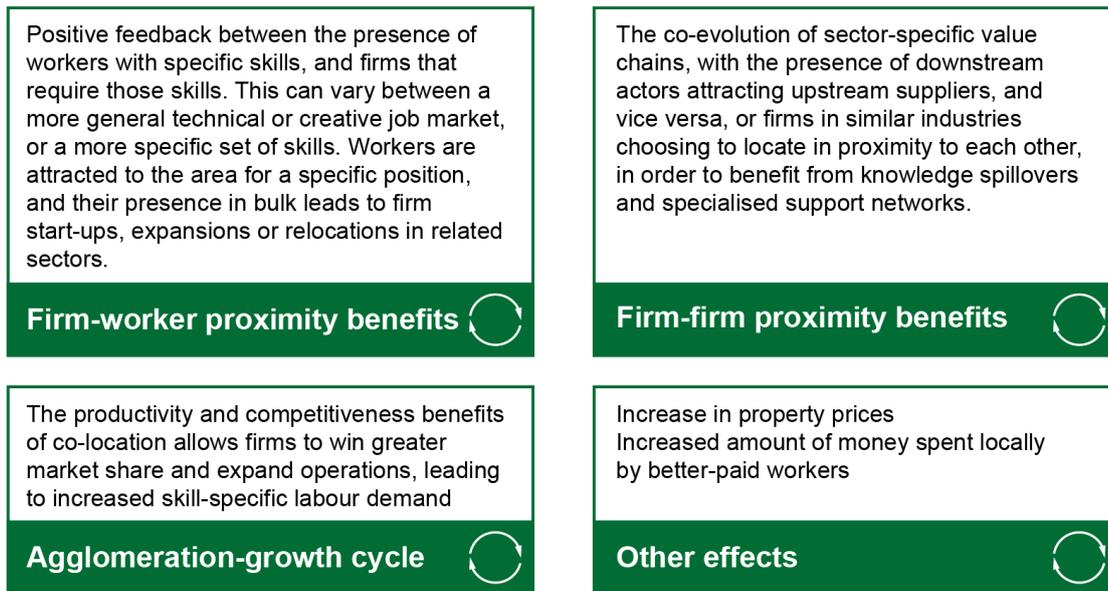
Negative Impacts: It's also possible that some firms and residents may be negatively impacted by transport infrastructure, either by losing control of a local monopoly or being exposed to labour competition from outside the area. Although the net effect on an area is almost certainly to be positive, remedial action might also be required to help those negatively impacted.

## 2.4 Dynamic Impacts

As outlined above, the net outcomes of the static impacts of a transport intervention vary in both scale and scope. Evidence suggests that the net impact of a successful intervention has the potential to improve productivity and profitability of the local firm base, and the quality of life and access to employment opportunities of local residents. The net upshot of this is an increase in attractiveness of the area to new firms, entrepreneurs, investors, and workers. All the static impacts outlined above are relevant here; the importance of quality of life in attracting workers should not be underestimated in favour of more easily quantified metrics.

By dynamic impacts, it is therefore referred to the subsequent impacts of new economic actors entering a local market as a result of a transport intervention. Over the long run, these impacts can build up in a series of self-reinforcing feedback cycles, and the effects of this can significantly outweigh the scale of the initial static effects.

The extent to which improved transport infrastructure acts as a driver of inward migration, investment and growth depends on the exact nature of the improvement and the strength of other constraints. A theory of change needs to be constructed for each infrastructure provision that outlines the evidence that transport either is, or is likely to become, a major constraining factor to firm and resident attraction.



**Figure 2.5 Self-reinforced feedback cycles**

The extent to which improved transport infrastructure acts as a driver of inward migration, investment and growth depends on the exact nature of the improvement and the strength of other constraints. A theory of change needs to be constructed for each infrastructure provision that outlines the evidence that transport either is, or is likely to become, a major constraining factor to firm and resident attraction.

## 2.5 COVID-19 and Remote Working

There are also several significant contextual factors that must be considered in any regional development strategy. First amongst these is the ongoing COVID-19 pandemic and the resultant acceleration in pre-existing trends in remote working, automation and digital services. These factors all have the potential to have a long-term impact on the direction of economic development. In this section the focus is specifically on the growth of remote working.

The UK and many other countries have undergone a form of “natural experiment” in remote working over 2020 and 2021, and although it is expected that there will be some return to prior working patterns in the post-pandemic period, a significant degree of change is expected to remain.

The following section loosely outlines the three stages of impacts:

### Stage 1: behavioural adjustment

– already underway

- Some occupations and sectors, (partly) working from home and commuting less frequently.
- Shift of consumer spending patterns from city centres to local or online.
- Some of these habits will revert post-vaccine, many won't, and worth noting: many sectors have been directly unaffected.

### Stage 2: business response

- Change in business practices to respond to consumer demand – more online, and more local.
- Permanent changes to working practices – many never expect staff to return to 5 days in the office.

### Stage 3: long-run spatial implications of ongoing routine Working From Home (WFH)

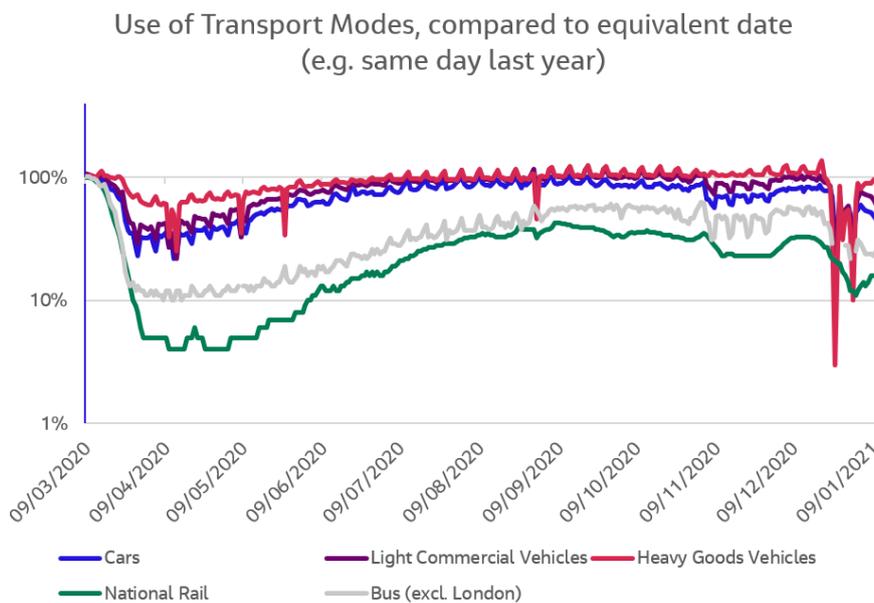
- Change in demand for commercial space as less staff in office 9-5.
- Less traditional city-centre desk space required.
- More collaboration space based around medium-distance transport hubs.
- More distributed workspaces (e.g. hotdesking and conference facilities in every community).

- Proximity to employment reduced as a factor in housing choice of high-skilled mobile workers.
- Less need to crowd around unaffordable cities – relocations to more affordable areas with high amenity values.
- Potentially, increased graduate ‘stickiness’ – if graduate entrants into the labour market are no longer required to relocate, they may just stay where they are.
- Local service firms will adjust to new spatial spending patterns – this may increase low- and medium - skill demand in areas that now attract more high - skill workers.
- As demand for local service sectors is driven primarily by the location of workers (as opposed to offices), a strategy of attracting remote workers to a region could form the basis of a viable local regeneration strategy.
- It is also thought that knowledge spill overs can occur through local community channels; an area that is able to attract a critical mass of remote knowledge workers may trigger the agglomeration cycle discussed above.

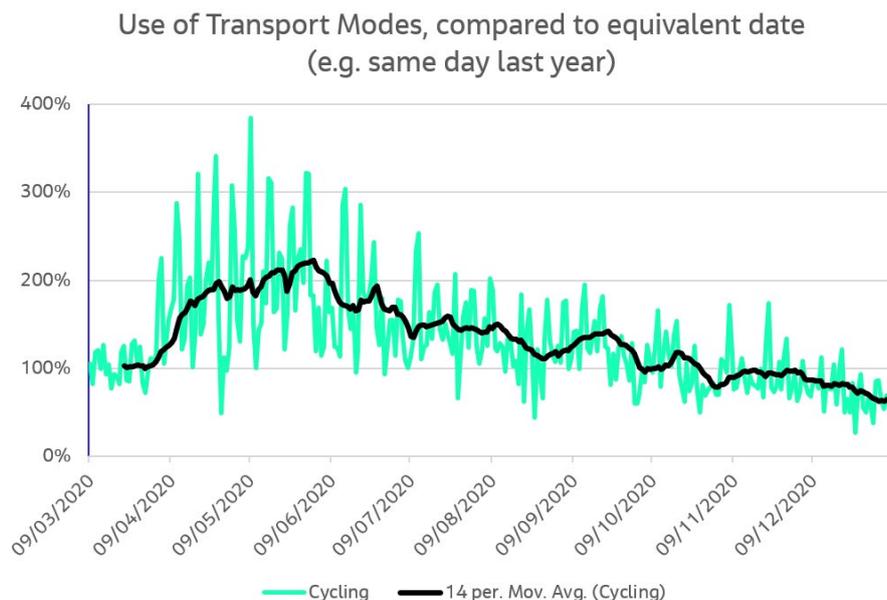
## 2.6 Impact on Transport Demand

In the short-term, the impact of COVID-19 on transport has been a massive reduction of demand, with national rail demand reaching a low point of 4% of the previous year’s demand in April and May 2020. The largest impact for HGVs occurred in December 2020 with a fall to only 3% but consequently saw a speedy recovery. This supply chain halt was due to impediments at ports caused by the upcoming Brexit negotiation deadlines, as opposed to the pandemic (Figure 2.6).

Cycling (and most likely walking, which was not included in the source data) have instead seen a strong shift in the opposite direction. Bicycle use reached as much as 384% of the previous year in May. That initial effect softened significantly with the colder months and as home working became more widespread. Since late October, the negative demand impacts of COVID-19 have started to affect cycling too, with its usage falling below that of last year (Figure 2.7).



**Figure 2.6: Use of transport modes (March 2020 – January 2021)<sup>1</sup>**



**Figure 2.7: Use of bicycles (March 2020 – January 2021) In the long term, patterns of demand over distance and time shifts might evolve as follows:**

- As more people work at home and consume in their local community, demand for very short-distance infrastructure (1-2km) particularly through active modes, may increase as people use local amenities more frequently.
- As less people commute daily into the office, short-distance (5-20km), rush-hour commuting trips may be significantly reduced. This has implications for the design of transport infrastructure systems to service rush hours. Work-from-home culture may persist and even spill over back into a traditional office environment, such as in terms of more flexible working patterns.
- As more people live at greater distance from their place of work, demand for medium-distance (30-100km) transport may increase as they visit clients, colleagues and collaborators on a weekly basis.
- Transport for non-work purposes becomes a higher relative priority
- Having good connections to friends and family, leisure and entertainment opportunities may become more of a factor in residential choice.

Research from the Upjohn institute<sup>7</sup> in the United States has found that the overwhelming impact of increased working-from-home will be the relocation of knowledge workers from expensive urban areas to less expensive, less dense areas. In the US, typically, people are moving between 1 and 3 hours away from their ongoing place of work; this may not translate exactly to the UK where workers have a lower tolerance of long commutes, however, low to medium density areas between 1 and 2 hours travel from major conurbations are the most likely recipients of additional skilled migration in the UK. The eventual rise in prices that might materialise as a consequence to this trend is a risk that will need to be considered as part of the transport strategy.

## 2.7 Industry 4.0 and Labour Demand

Much has been made of the potential for rapid technological change in manufacturing processes and products and in the application of Artificial Intelligence (AI) to automate a wide range of tasks including in professional and business services. Industry 4.0 is a catch-all term for a wide variety of these technological improvements, some of which are already under way and others of which are likely to become widespread during the next few decades. These include the increased use of both automotive technology, advanced sensors and robotics to replace routine and semi-routine physical work. AI also includes advanced data-processing and machine learning techniques to augment and replace systematised cognitive tasks.

<sup>7</sup> <https://www.upwork.com/press/releases/upwork-report-finds-up-to-23-million-americans-plan-to-relocate-amid-rising-remote-work-trends>

There have been several studies published on this subject in recent years, and whilst all speculative by their nature, the conclusions are relatively consistent. The overall demand for labour is unlikely to decrease, but there are likely to be profound changes in demand patterns. The relative demands for high-skilled labour and certain types of non-routine medium-skill labour will increase, while the demand for routine work, some of which is currently categorised as medium skill as well as low skill, is likely to decrease significantly. The probability for high levels of skill mismatch and unemployment is significant and requires policy action now in order to counteract potential negative impacts. The central policy need is for expanded and carefully tailored skills provision, including retraining options for those directly affected, in order to reduce the proportion of the working-age population with only low-level qualifications, and to ensure that the qualifications received are relevant and specifically tailored for the needs of future industry.

Working Futures suggests notable reductions in Manufacturing, Clerical and Secretarial employment as a result of globalisation and technological change (particularly related to information and communication technologies). Increases are projected in Managerial, Professional, Technical Skilled, and Service Industry professions, where creativity, decision-making and intuition are valued.

McKinsey Global Institute reported that 60% of occupations have at least 30% of constituent work activities that could be automated, but the shift towards new ways of working, and the redistribution of capital and labour, will also create new occupations. This is a dual-edged sword, as it provides an opportunity for technology driven productivity and wage growth by shifting towards more skilled occupations, however there is a significant risk of increased levels of unemployment, particularly in lower-skilled workers.

Due to technological advancements, by 2030, between 75m and 375m workers (3% to 14% of the global workforce) will need to switch occupational categories. The growth areas globally are in healthcare; engineering, science/technology, IT, and managers and executives. The major shift is predicted be away from manufacturing and other occupations that can be automated including agriculture, transport, accommodation, and administrative support services.

However, somewhat counter-intuitively, at the local or regional level, the areas that most rapidly embrace new technological processes and innovations will be their areas that maintain a competitive advantage in the global marketplace and be best placed to protect employment in high-tech manufacturing or industrial sectors. The latest evidence suggests that the overall implications for regional labour demand depend on the level of innovative potential and dynamic capability in an economy; in more innovative and dynamic economies, the labour freed up within firms is more likely to be productively reallocated either within the same firm or elsewhere within the sector.

The table (Table 2.1) below cross-references the impacts of remote work and automation on occupational categories; the three highest skill occupations (SOC1-3) are likely to experience increased demand in the future, as well as possible increased propensity to work from home. The other groups likely to see increased share of the workforce are caring and leisure, and sales and customer service occupations, however these jobs are less likely to be done remotely.

**Table 2.1: Labour demand due to Industry 4.0**

	<b>Occupations most likely to experience increased labour demand due to Industry 4.0</b>	<b>Occupations most likely to experience reduced labour demand due to Industry 4.0</b>
<b>Occupations most able to be performed remotely</b>	Managers, directors and senior officials Professional occupations Associate professional and technical occupation	Administrative and secretarial occupations
<b>Occupations least able to be performed remotely</b>	Caring, leisure and other trades occupations Sales and customer service occupations	Skilled trades occupations Process, plant and machine operatives Elementary occupations

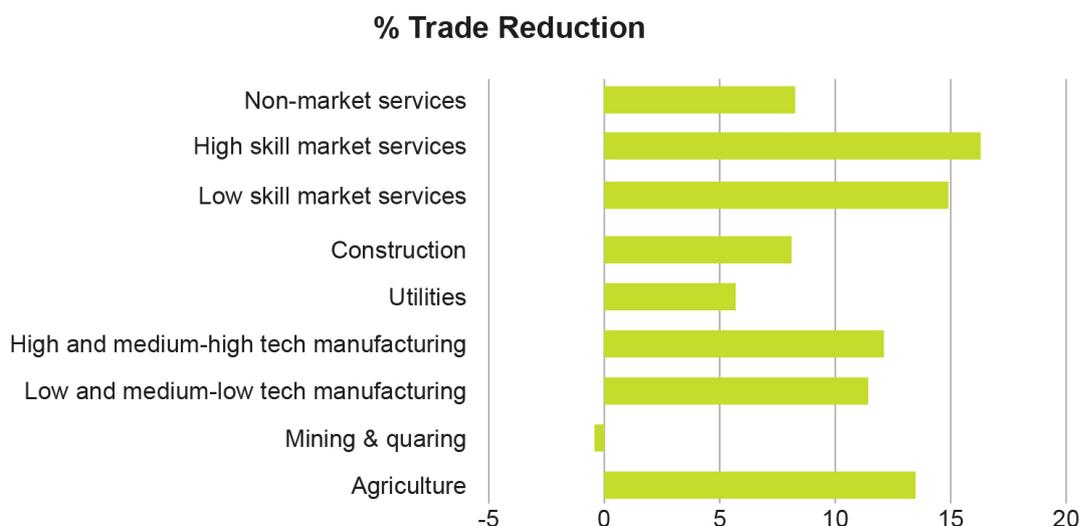
## 2.8 The impact of Brexit

On January 1<sup>st</sup>, 2021, the UK moved into a new relationship with the EU. The sectors most likely to be impacted in the long-run are manufacturing firms that are part of cross-EU supply chains and high-value service firms who serve the EU market.

For individual firms, there are several longer-term options:

- Business-as-usual with the EU – but with significant additional costs.
- Firm adaptation to serve domestic markets, may require new investment, at the firm’s level, this is the only limited upside – there may be opportunities for firms to supplant imports.
- Export-focused firms may look for alternative global markets – none as easy or as close.

The most direct impact of Brexit on the UK economy is through a net reduction in trade. The CE projections for impact by sector are shown in figure 2.8 below, with a reduction of between 5 and 20% seen across the board.



**Figure 2.8: Brexit Reduction in Trade (CE)**

## 2.9 Climate Change

The world is facing a global climate crisis with urgent action required at every level of government, and across multiple sectors, including the transport system.

The recession caused by the COVID-19 pandemic and subsequent lockdown offer an opportunity for public policy intervention to be ‘reset’, providing a stimulus package which could not only help people get back to work but also set the UK on a low-carbon trajectory more aligned with ambitions to become a net-zero economy by 2050.

Proposed categories of potential ‘green’ investment are considered and described in more detail in table 2.2 (adapted from CEP AND Grantham Research Institute (2020) analysis<sup>8</sup>). These initiatives map to the UK’s highest-emitting sectors, while also providing opportunities for robust job creation and associated multipliers in the short term, with potential productivity gains in the longer term.

<sup>8</sup> <https://cep.lse.ac.uk/pubs/download/cepcovid-19-010.pdf>

Table 2.2: Potential green recovery investments in the UK<sup>9</sup>

Investment	Example of employment and growth drivers
<b>Carbon capture, utilisation and storage (CCUS) and hydrogen</b>	<ul style="list-style-type: none"> <li>▪ Construction and operation of scale pilot projects for hydrogen production</li> <li>▪ Construction and operation of CCUS infrastructure in high emitting industrial clusters</li> </ul>
<b>Renewable power generation and distribution</b>	<ul style="list-style-type: none"> <li>▪ Wind turbine and solar PV installation and operation</li> <li>▪ Distribution infrastructure installation and operation</li> <li>▪ Wind turbine and solar PV assembly</li> <li>▪ New nuclear build</li> </ul>
<b>Electric Vehicles (EVs)</b>	<ul style="list-style-type: none"> <li>▪ Construction and operation of EV charging infrastructure</li> <li>▪ Operation and maintenance of EV charging infrastructure</li> <li>▪ UK production of, and R&amp;D related to: <ul style="list-style-type: none"> <li>– Raw materials for electric vehicles (e.g. lithium)</li> <li>– Electric vehicle component production</li> <li>– Electric vehicle assembly</li> <li>– Electric vehicle charging infrastructure</li> </ul> </li> </ul>
<b>Active travel and infrastructure</b>	<ul style="list-style-type: none"> <li>▪ Construction and operation of: <ul style="list-style-type: none"> <li>– Walking infrastructure schemes and networks</li> <li>– Cycling infrastructure schemes and networks</li> <li>– Traffic calming schemes</li> <li>– On-street cycle hire schemes</li> <li>– Improved rail connectivity and services</li> </ul> </li> </ul>
<b>Housing energy efficiency</b>	<ul style="list-style-type: none"> <li>▪ Production and installation of: <ul style="list-style-type: none"> <li>– Loft insulation</li> <li>– Solid wall insulation</li> <li>– Cavity wall insulation (filling)</li> <li>– Floor insulation (draft proofing)</li> <li>– High efficiency glazing</li> </ul> </li> </ul>
<b>Natural capital</b>	<ul style="list-style-type: none"> <li>▪ Creating, maintaining or restoring: <ul style="list-style-type: none"> <li>– Non-woodland ecosystems (e.g. wetlands)</li> <li>– Woodland ecosystems (including tree planting)</li> <li>– Saltmarshes and peatlands for carbon sequestration</li> <li>– Parks and urban green space</li> <li>– Sustainable drainage systems (SuDS)</li> <li>– Continued creation, maintenance and restoration of natural capital</li> <li>– Ecosystems services</li> </ul> </li> </ul>

Recent analysis (October 2020) by CE<sup>10</sup> shows that the implementation of even a limited number of the investments in table 2.2 could boost income, employment and GDP in the UK more than ‘return-to-normal’ stimulus measures, with the added benefit of reducing emissions along a 2050 net-zero trajectory (see Figure 2.9).

<sup>9</sup> Source: CE, adapted from CEP, Grantham Research Institute

<sup>10</sup> <https://www.camecon.com/news/green-recovery-plans-more-effective-than-return-to-normal-stimulus/>

In both the UK and across a range of other countries, green recovery plans based on such investments were found to be more effective than the traditional 'return-to-normal' stimulus approaches that reduce VAT rates and encourage households to resume spending.

However, the findings also reiterate the substantial and longer-term impact of the COVID-19 pandemic on global economic activity, even with substantial green recovery investment.

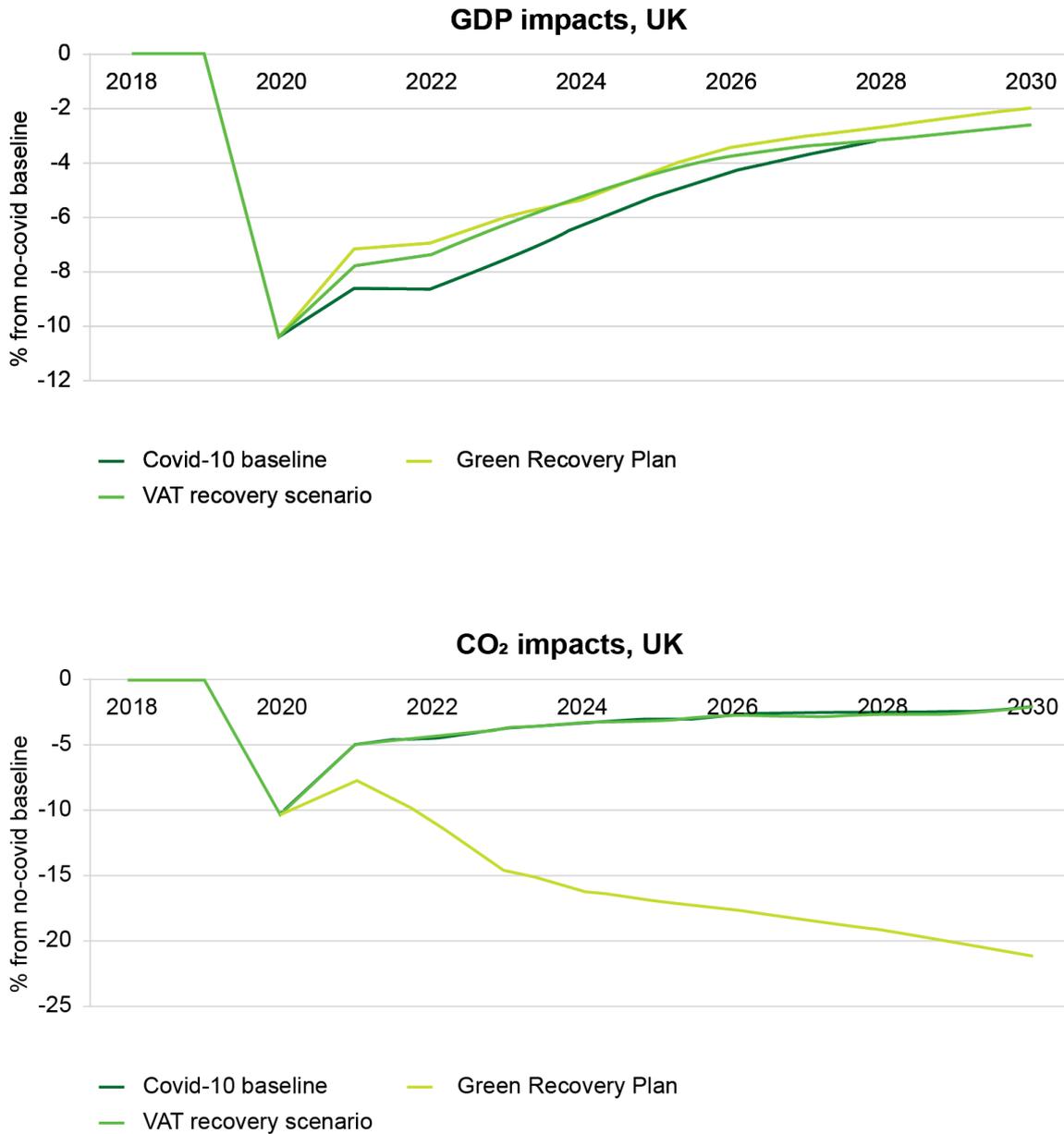


Figure 2.9: UK GDP and CO<sub>2</sub> impacts under various recovery scenarios<sup>11</sup>

<sup>11</sup> CE

## 3 Transport East Regional Economic Context

Before moving on to discussing the specific economic opportunities and challenges faced by the region, it is important to identify and discuss the unique physical and geographical context of Norfolk, Suffolk, Essex, Southend-on-Sea and Thurrock as these will continue to have an important influence over the potential role played by the region both now and in the future.

### 3.1 Physical Assets

#### 3.1.1 Coastal Assets

The East of England coastline represents a significant asset that is worth considering in its own right, providing opportunities in tourism and visitor economies, renewable energy, transport and logistics. The coasts of Suffolk, Norfolk and Essex (the longest coastline in England<sup>12</sup>) are traditional holiday destinations in England with several popular seaside resorts such as Great Yarmouth, Lowestoft, Cromer, Hunstanton, Clacton-on-Sea and Southend. Furthermore, the region has some of the most significant trade and logistics assets in the country, including the ports of Felixstowe, Harwich, Tilbury and London Gateway.

#### 3.1.2 Energy Generation

The Eastern Region has major energy generation capabilities, with a unique mix of wind power, nuclear and natural gas assets. The southern part of the North Sea off the coasts of Norfolk, Suffolk and Essex has traditionally been a gas extraction area, while it has also emerged as a major global hub for wind energy production. There are currently close to 1,000 wind turbines off the East of England coast generating 3.75GW of renewable energy, with an additional investment of £50bn over the next ten years to deliver more than 1,000 additional turbines<sup>13</sup>. The ports of Lowestoft, Great Yarmouth and Harwich have key roles in supporting the offshore energy industry, for construction, operation and maintenance.

Sizewell in Suffolk is the location of a nuclear energy power station with one reactor currently in operation (out of a total of 15 in the UK), with plans of expansion in the future currently in development. An additional nuclear power station, Bradwell B, has been proposed, which would provide enough energy to power 4 million homes. The application is currently undergoing two consent procedures: a Generic Design Assessment (GDA) by UK nuclear regulators and a Development Consent Order (DCO), by the infrastructure planning inspectorate. This power station is not likely to be operational in the short-term.

As government policy pivots towards low carbon energy sources in the future, nuclear and offshore wind have the potential to expand significantly, providing not only valuable jobs and income for the region, but also playing a significant role in helping the UK reduce its carbon emissions. With 60% of offshore wind energy in the UK generated in the East of England<sup>14</sup>, the region is already an important centre of renewable energy and its experience puts it in a prime position to take advantage of the shift towards clean energy.

<sup>12</sup> <https://www.visiteastofengland.com/see-do/essex>

<sup>13</sup> New Anglia LEP (2017a)

<sup>14</sup> East of England Science and Innovation Audit (2017).

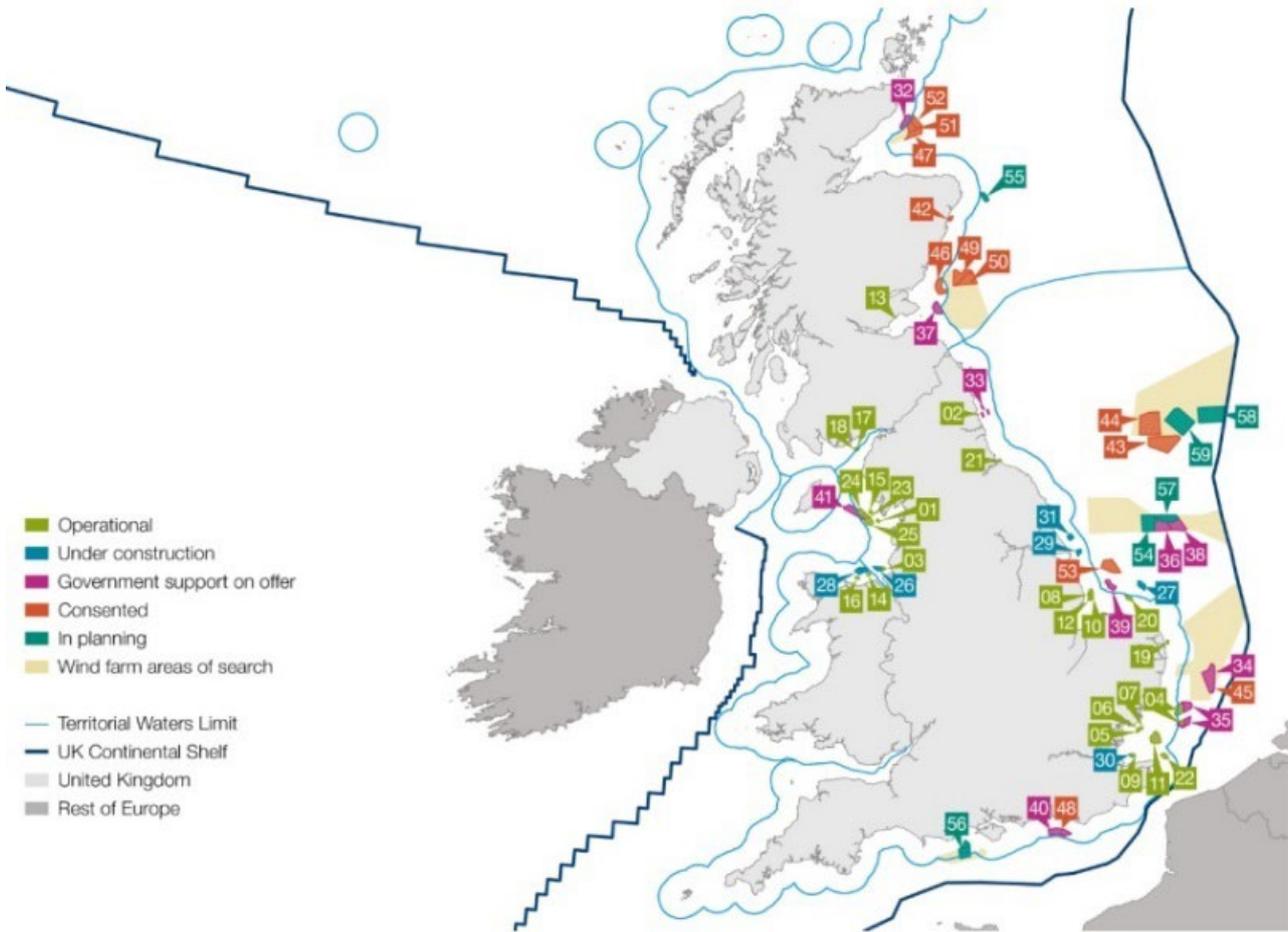


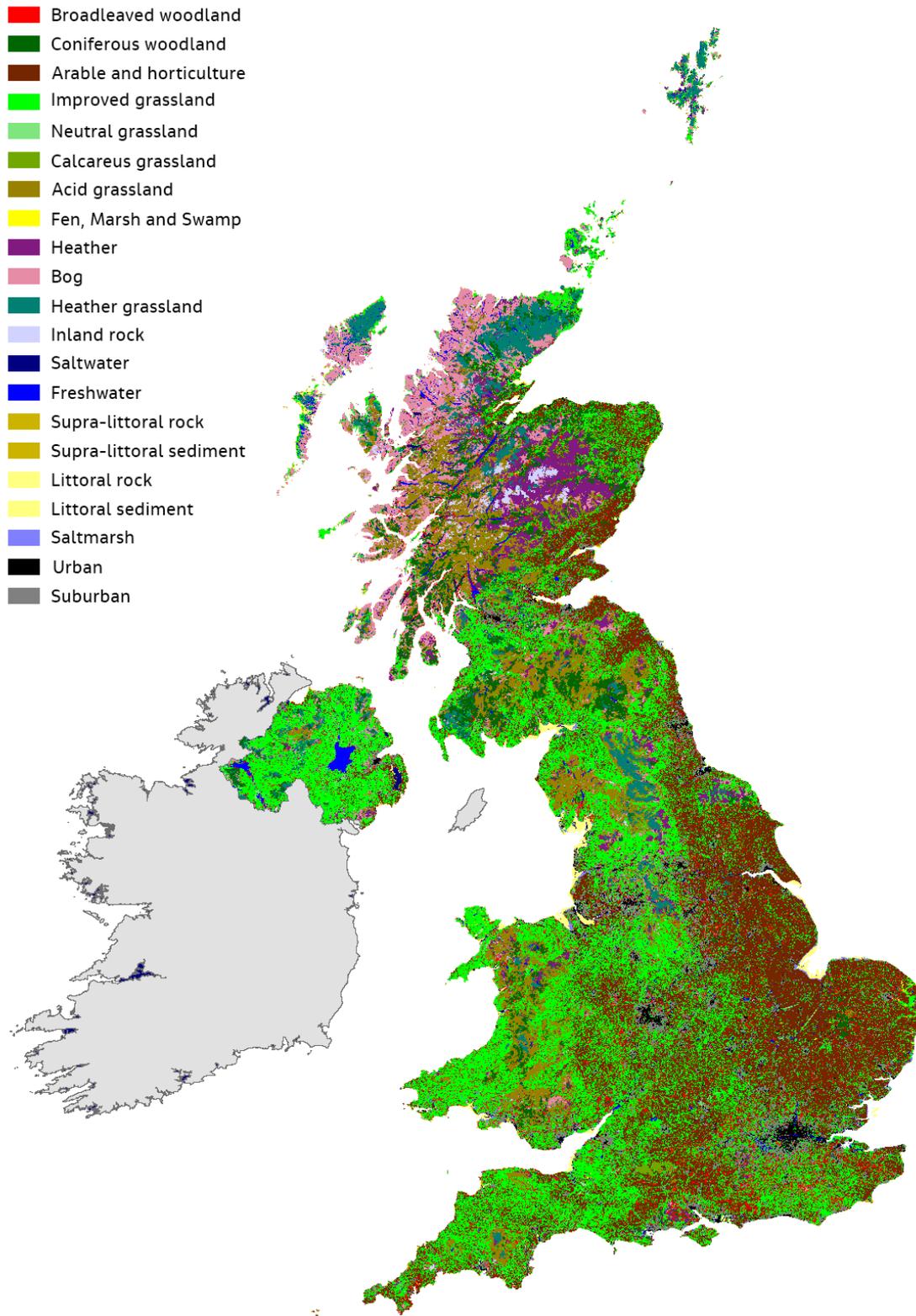
Figure 3.1: Low carbon energy production context<sup>15</sup>

### 3.1.3 Farmland

Another important physical asset for the Eastern region is the extent and quality of its farmland. The region has a total farmed area of 1.4m hectares, accounting for 15.3% of total farmed area in England (second to the South West’s 19.3% share). 79% of the farmed area is arable, by far the highest share and largest arable area among English regions. Figure 3.2 below clearly illustrates that arable land (shown in burgundy) is heavily concentrated in the East.

Combined with the technological and scientific expertise of the area, this has evolved into a significant asset for the region, that can play a major role in the future as increasing focus is placed on the production of high-quality, healthy, ethical and sustainable food. The region’s importance for the future of agri-food is underlined by the fact that for the period 2004-16, the East of England accounted for 35% of UK Research Council Funding in plant and crop science; 24% in agri-environmental science and 16% in food science and nutrition.

<sup>15</sup> <https://www.gov.uk/government/publications/uk-offshore-wind-opportunities-for-trade-and-investment/uk-offshore-wind-opportunities-for-trade-and-investment>



**Figure 3.2: Context of physical assets in the East of England (2015)<sup>16</sup>**

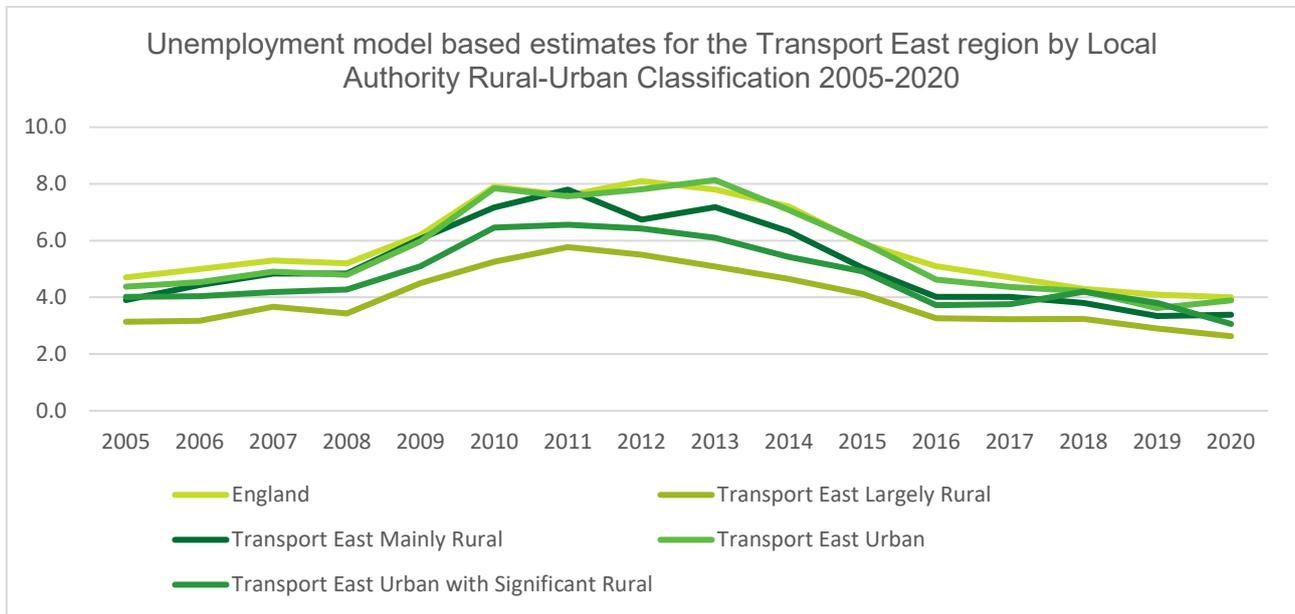
<sup>16</sup> <https://www.ceh.ac.uk/ukceh-land-cover-maps>

### 3.1.4 Urban and Rural Areas

Both Local Enterprise Partnerships (LEPs) for the region identified the need to concentrate growth in and around existing urban settlements where possible. Some of the benefits of high population density are:

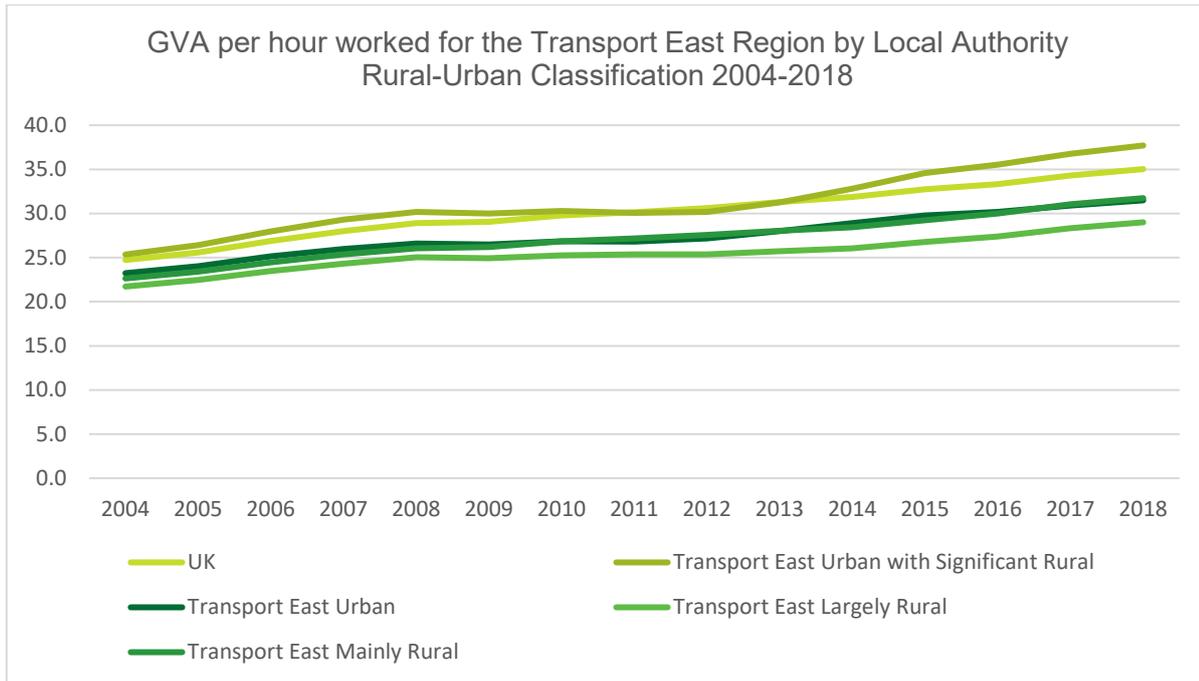
- Lower levels of unemployment (illustrated in figure 3.3 below), however when comparing to the Eastern region characteristics unemployment levels for urban areas were at just under 4% and at just under 2.5% for rural areas therefore being slightly below the national average for England.
- Agglomeration benefits to the economy are described in Section 2 and figure 3.4 below;
- A reduction on private vehicle reliance and therefore an improvement to fluidity of travel, air quality and carbon emissions;
- A reduction in home size and therefore heating-related carbon emissions; and a reduction in overall travel of freight and therefore an improvement to air quality and carbon emissions. It's counterintuitive, but the most environmentally friendly style of living is urban, not rural.

Within the COVID-19 context the effects of working from home are having a myriad of different impacts. On the one hand, energy consumption for both heat and light is far lower in a common space such as an open-plan office, as opposed to many individually lighted, heated and air-conditioned homes. On the other hand, the travel patterns have shifted dramatically, with significant mode shifts to active modes and a general reduction of all travel. Both these and other trends may or may not be long-term.



**Figure 3.3: Unemployment rate in England compared with Regional levels (as a percentage of economically active aged 16+)**<sup>17</sup>

<sup>17</sup> Statistical Digest of Rural England, DEFRA, January 2019



**Figure 3.4: GVA by Local Authority classification (as a percentage of England GVA 2001-2017)<sup>18</sup>**

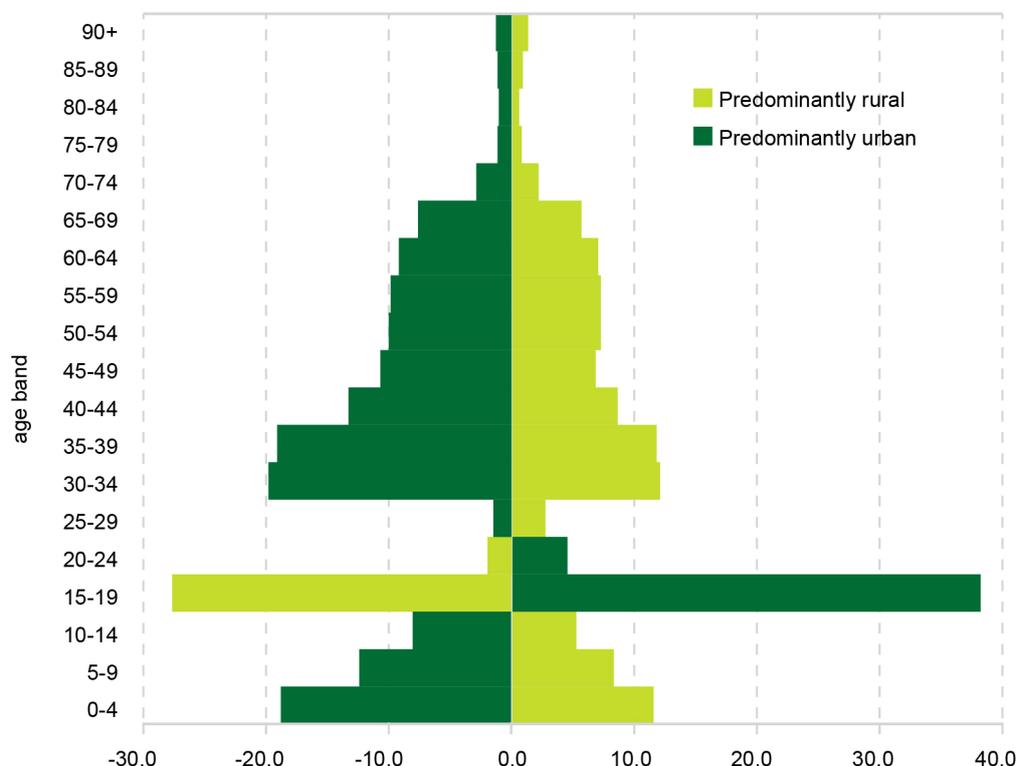
Younger people tend to prefer living in an urban setting, making it significantly easier for businesses located in urban areas to attract them. According to the Statistical Digest of Rural England (2019)<sup>19</sup>, the average age of residents in rural areas is 44.6 years old, while in urban areas it is 39 when comparing this to the Eastern region statistics the average ages are 41 and 46 for urbans and urban areas respectively.

Teenagers migrate in mass to cities, as shown in figure 3.5 below.

<sup>18</sup> Statistical Digest of Rural England, DEFRA, January 2019

<sup>19</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/775109/01\\_Statistical\\_Digest\\_of\\_Rural\\_England\\_2019\\_January\\_edition.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/775109/01_Statistical_Digest_of_Rural_England_2019_January_edition.pdf)

**Net internal (within the UK) migration for predominantly rural and predominantly urban areas, by age band, mid-year 2016, England**



**Figure 3.5: Net internal migration by age band (2016)**<sup>20</sup>

Nevertheless, the ONS Statistical Bulletin on the mid-2018 population estimates<sup>21</sup> finds that most rural parts in England experience net inward internal migration, while on the other hand a lot of urban centres face net outward external migration, with people aged 20-30 years being the exception. Rural areas have advantages as residential communities with lower levels of crime, deprivation and anxiety compared to urban areas, as well as higher levels of life expectancy, happiness and trust in their neighbours.<sup>22</sup>

In England, employment in the Knowledge-Intensive Business Services (KIBS) sector is concentrated mostly in urban centres, with the sector’s employment share in urban areas being 17.4% compared to 11.6% in rural areas. Furthermore, urban areas have higher employment shares across all individual sectors that make up KIBS: finance (3.8% compared to 1.1%), information and communication (4.6% compared to 2.7%) and professional, scientific and technical services (9% compared to 7.8%).<sup>23</sup> This is also reflected in the skills distribution: 44.7% of those working in predominantly urban areas have qualifications at NVQ4 or a higher level, while for those working in predominantly rural areas the share is 35.4%.<sup>24</sup>

This is not to say that rural areas do not have a role to play as employment sites. Their natural and geographical assets support specialisations in agri-food and related activities (employment share in agriculture, forestry and fishing of 7.5% compared to 0.2%), tourism (employment share in accommodation and food service activities of 10% compared to 6.9%), as well as large-scale manufacturing (11% compared to 7.5%).<sup>25</sup>

<sup>20</sup> Statistical Digest of Rural England, DEFRA, January 2019

<sup>21</sup><https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/annualmidyearpopulationestimates/mid2018>

<sup>22</sup> See Statistical digest of rural England 2019 for the relevant data.

<sup>23</sup> Ibid. 2016-17 data.

<sup>24</sup> Ibid. Data for 2015.

<sup>25</sup> Ibid. 2016-17 data.

However, the future of rural areas is not solely limited to this: with the increasing use of digital technology, some of the fastest growing sectors in rural areas are professional services and IT, as knowledge workers choose to work from home or from cost-effective locations and interact with their clients remotely. For example, in the Greater Norwich outer hinterland<sup>26</sup>, the *information & communication* and *professional, scientific & technical activities* sectors were the first and third fastest-growing in the area over the 2009-17 period, with employment growth exceeding 30%.<sup>27</sup>

2011 Census data shows that the East of England ranks third among regions in the UK in share of rural population (28.9%). The following map by the ONS (Figure 3.6) depicts the rural characteristics of the region, as well as the most significant urban conurbations:

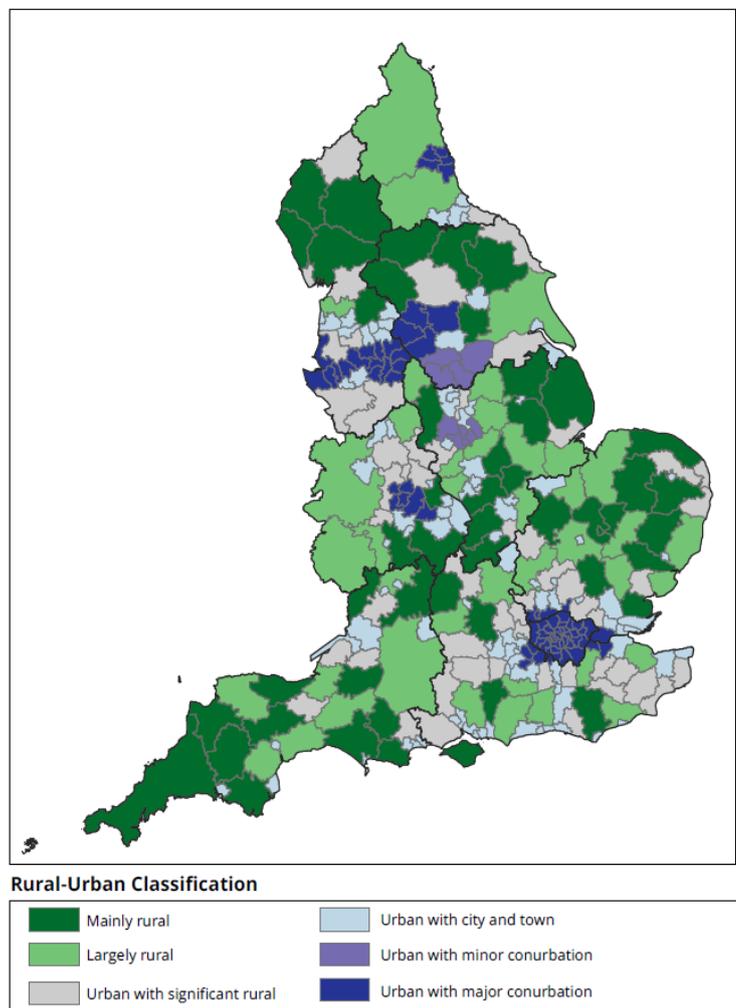
The strategic LEP documents in the region recognise the importance of rural areas from an economic and environmental standpoint, while acknowledging the need for a bespoke approach to tackle the key issues faced by such areas and unlock their potential.<sup>28</sup> The emphasis is placed on improving digital connectivity and transport infrastructure, as well as upskilling the residents to better meet the requirements of technological changes, all of which are expected to boost productivity and innovation and help alleviate deprivation in these areas.

### 3.1.5 Neighbouring Economies

**London Commuter Zone:** Areas to the south and west of the East of England region unambiguously form part of the London Commuter zone (Figure 3.7), and a recognition of this fact plays an important role in the spatial strategy of impacted LEPs (SEMLEP, Herts LEP and SELEP). Far from being seen as a challenge or a threat to local industry, most LEPs recognise this to be an opportunity for collaboration and complementarity with Greater London.

Many households with two or more working adults now make their location decision based on the ability to work in different locations. A location from which commuting to London is feasible does not necessarily imply a loss of workers from the local economy; on the contrary, it may encourage households to locate there, in a scenario where one adult commutes to London while the other is available for work in the local economy.

Close proximity and travel times to London not only allow for ease of commuting, but also of business collaboration or engagement in supply chains. There are recognised agglomeration benefits experienced by firms that are proximate enough to major cities to be able to effectively participate in the urban economy from a distance.

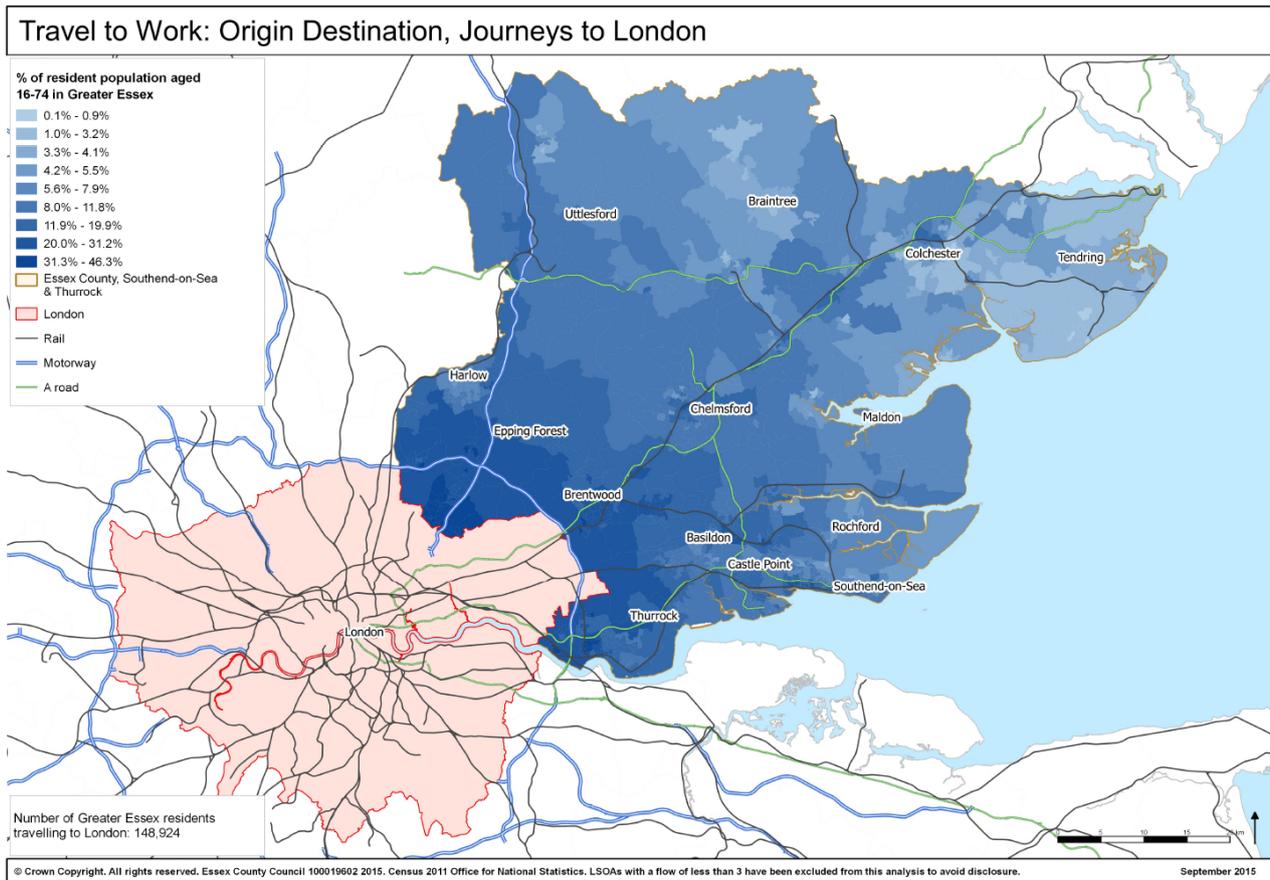


**Figure 3.6: Rural-Urban classification**

<sup>26</sup> Approximated to those areas of Norfolk outside a 10km radius of the city of Norwich.

<sup>27</sup> Nomis data, Cambridge Econometrics calculations.

<sup>28</sup> See for example the New Anglia LEP [Strategic Economic Plan](#), the [South East LEP Rural Strategy](#), and the South East LEP and [Boosting Coastal Productivity](#).



**Figure 3.7: Travel to work origin/destination for journeys to London**

**Economic Corridors:** Brunner (2013)<sup>29</sup> gives the following definition of an economic corridor:

‘Economic corridors connect economic agents along a defined geography. They provide connection between economic nodes or hubs, usually centred on urban landscapes, in which a large amount of economic resources and actors are concentrated. They link the supply and demand sides of markets.’

Growth corridors utilise key infrastructure assets to connect markets, ideas and people, thus supporting the development of economic clusters while also improving the links between urban agglomerations (which are typically where the clusters are located) and more rural areas. Such corridors can help attract private investment and facilitate knowledge diffusion, communication, trade and competitiveness by decreasing costs and delivery times.<sup>30</sup>

A unique characteristic of the Eastern region is the number, as well as the importance, of the growth corridors intersecting the region. London has the largest economic influence over its surroundings of any UK city, by far. London’s neighbouring regions have seen development especially around the capital’s radial economic corridors:

<sup>29</sup> Available here: <https://www.adb.org/sites/default/files/publication/100110/reiwp-117-economic-corridor-development.pdf>

<sup>30</sup> Sources: [https://www.carecprogram.org/?page\\_id=33](https://www.carecprogram.org/?page_id=33) and <https://www.brookings.edu/research/economic-corridors/>



Connecting the Midlands with our Energised coastal communities, this corridor connects to internationally significant offshore wind energy clusters at Great Yarmouth and Lowestoft, as well as connecting multiple growth centres at Norwich and King's Lynn.



Two important corridors including Gateways at Felixstowe and Ipswich Ports, Norwich Airport and growing towns and cities at Norwich, Thetford, Bury St Edmunds and Ipswich. This is a gateway corridor of national importance for both rail and road.



A central spine running north-south through the 'Heart of East Anglia' providing connections to important and fastest-growing towns and cities and serves some of major gateway ports. It includes onward connections by rail and road to the energy coast of east Suffolk and Norfolk.



South Essex corridor is a major location for economic growth, and comprises growing urban areas across Thurrock, Southend and South Essex including Basildon, connecting to neighbouring areas including London and across the Thames to Kent. Thurrock is home to several major international ports of strategic national economic importance including London Gateway, Tilbury and Purfleet.



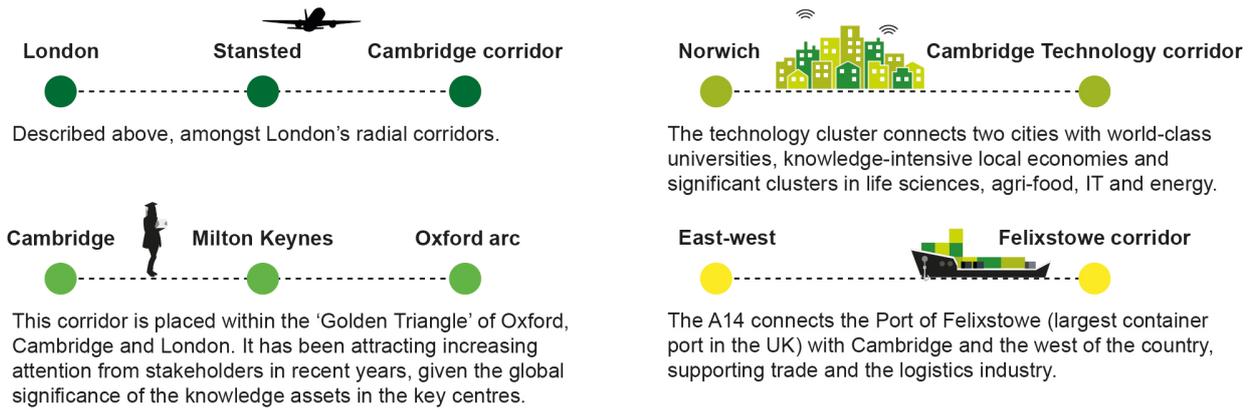
An important corridor providing connectivity between growing towns and cities and linking the M11 Innovation Corridor with gateways at London Stansted Airport and Felixstowe, Ipswich and Harwich international ports.



The UK Innovation Corridor growth partnership is working closely with Transport East, promoting development, transport and better infrastructure around the themes of next-generation science and technology powered by London and Cambridge. The West Anglia Mainline railway and A10 northwards to King's Lynn is a natural extension of this, encapsulating a growing economy based around medical and agritech, life science and bio-sciences.

**Figure 3.8: Growth corridors intersecting the region**

Another core attractor of talent and economic activity is the neighbouring globally significant tech-hub of Cambridge. The Eastern Region is leveraging the City's role as a focal point, by taking a corridor-oriented approach in the region's spatial strategy. The aim is to allow the numerous advantages of the Cambridge 'phenomenon' to spill over into neighbouring regions to the mutual benefit of both those regions and Cambridge-based firms and workers. These corridors include:

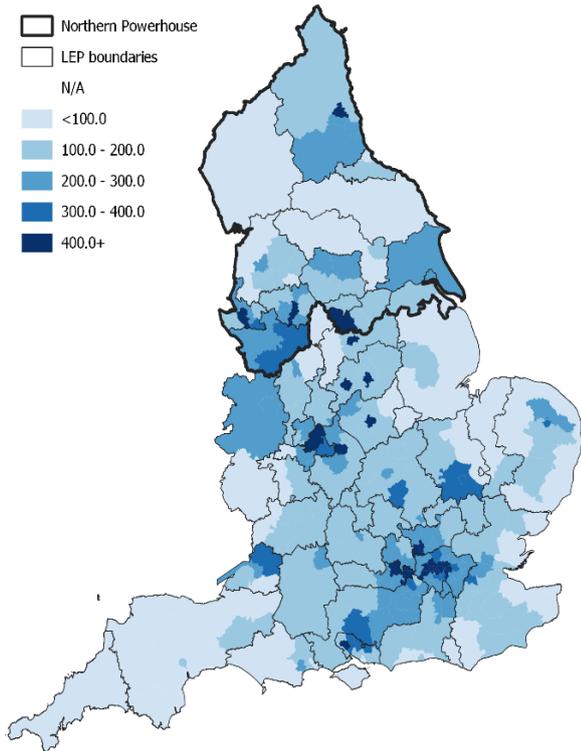


**Figure 3.9: Growth corridors intersecting Cambridge tech-hub**

**3.1.6 The role of Transport Infrastructure in Economic Growth**

The fundamental roles of transport are to provide accessibility to personal enjoyment, such as going to a park or visiting friends or family, and to provide accessibility for citizens to economic activity such as offices or retail. The latter, which is of greater focus to this report, has been measured by the Department for Transport. This measure, called Access to Economic Mass (ATEM), is designed to represent the level of connectivity to economic activity within the country. This is a basic but holistic measure of transport infrastructure provision.

Figure 3.10 below shows estimates of ATEM levels of connectivity across LEP areas within England. There is evidence that ATEM correlates positively with firm productivity. Areas with high ATEM measures tend to either have high levels of employment density or have short transit times to places that do. The Eastern region tends to see lower levels of ATEM than England as a whole, with slightly higher levels seen in the area around Norwich and in the south and west of the region.



**Figure 3.10: Access to Economic Mass (ATEM score)<sup>31</sup>**

<sup>31</sup> CE, Department for Transport, Steer, Prof Bernie Fingleton

## 4 Economic Opportunities and Challenges

This Section will build upon the theoretical basis outlined in Section 2, identifying specific strengths, weaknesses, opportunities and challenges as divided into Sectoral Structure and Human Capital and Skills. Supported by regional examples of excellence.

### 4.1 Sectoral Structure

#### 4.1.1 Strengths and Weaknesses

A region's mix of sectors can have an important influence on productivity, reflecting its exports, its ability to attract income and its ability to compete effectively. However, most evidence shows that the sectoral mix does not explain the productivity gap between regions, not least because it is specialisation by function within a sector (for example, front versus back-office functions in the financial sector, or global versus national focus in manufacturing) that drives productivity differences between regions rather than the sector within which the function is located.

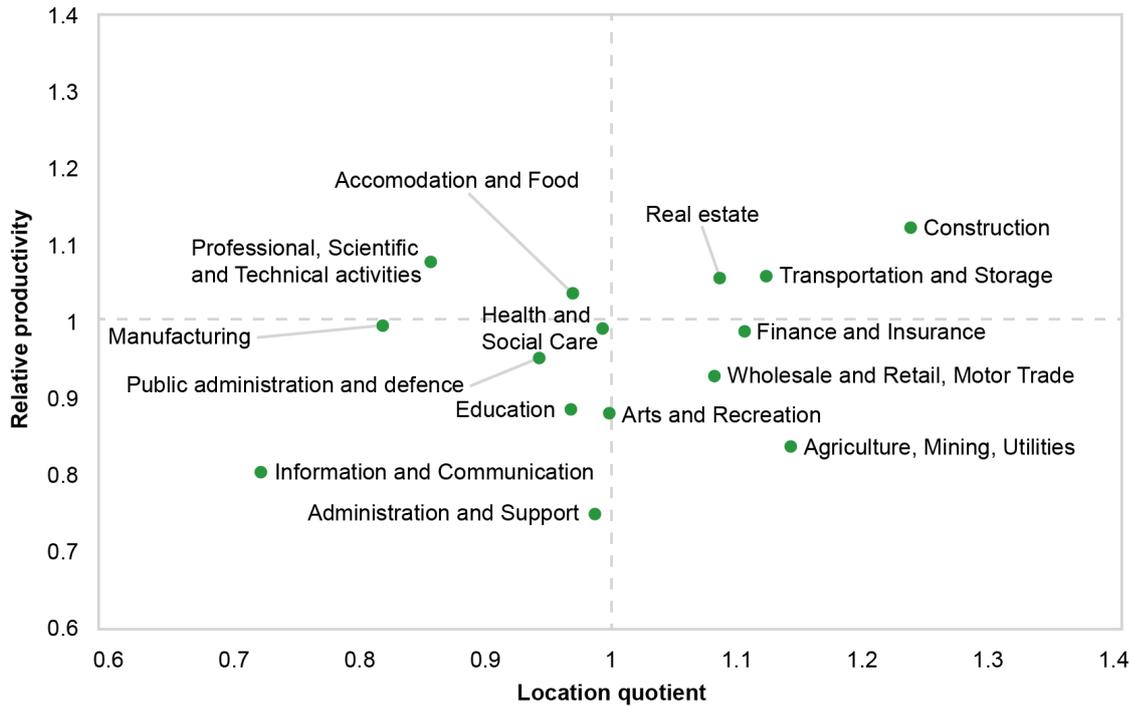
The figures in the remaining part of this section show the relative productivity (y axis) and location quotient (relative employment) (x axis) of each area compared to England excluding London. Relative employment is defined as the ratio of the sectoral employment share in that area to the employment share of the same sector in the comparator area.

$$\text{relative employment of sector } i = \frac{\frac{\text{employment in sector } i \text{ within comparator area } z}{\text{total employment in comparator area } z}}{\frac{\text{employment in sector } i \text{ within comparator area } z}{\text{total employment in comparator area } z}}$$

The definition for relative productivity is similar. The interpretation of these ratios is the following:

- Values above one in relative employment indicate an employment specialisation of an area relative to the comparator area.
- Values above one in relative productivity indicate a productivity advantage of an area relative to the comparator area.

Hence, from Figure 4.1 an area has an employment specialisation and a productivity advantage in sectors placed in the top right quadrant, while sectors in the bottom left quadrant are ones where the area is less specialised and productive than the country average. The top left quadrant represents sectors that the area has high relative productivity in but does not have an employment speciality in; the inverse holds for sectors in the bottom right quadrant.



**Figure 4.1: Relative productivity (y axis) and location quotient (relative employment) (x axis) of each area compared to England excluding London<sup>32</sup>**

While a regional overview provides useful context, it's also necessary to consider the detail at more fine grained level; some smaller niche specialisms do not show up in the figure above but are covered in the two LEPs' strategy documents.

According to the Norfolk and Suffolk Economic Strategy, there are nine sectors in which New Anglia has distinct strengths. These are *energy; life sciences and biotech; ICT, tech and digital creative; agriculture, food and drink; visitor economy – tourism and culture; financial services and insurance; transport, freight and logistics; construction and development; advanced manufacturing and engineering.*<sup>33</sup>

New Anglia is competitive in these sectors which are an important part of the local economy in terms of present and growth potential, as well as linking the area with the national and broader global economies and exemplifying the level and breadth of skills within the enterprises flourishing in the area. Part of this competitiveness relies on New Anglia's natural advantages such as fertile soils that have made New Anglia the most productive farming region in the UK and its 'breadbasket', while its coastal environment has made it possible for the growth of the offshore windfarm renewable energy sector.

Each key sector is represented by a business-led sector group in which members transfer knowledge and skills which harness innovation that feeds the area's growth. For example, the East of England Energy Group (EEEGR) represents over 350 organisations from the area's diversified energy sector which spans oil, gas, wind, and tidal. The energy sector employs 19,000 people directly and is expected to grow further, given that some of the world's largest windfarms are under construction off the East Anglian coast.<sup>34</sup>

Other identified niche strengths, such as in life sciences and biotech or advanced manufacturing, are not visible in figure 4.1 above, due to the breadth of the sectors for which this data is available.

<sup>32</sup> ONS, NOMIS, Cambridge Econometrics  
<sup>33</sup> New Anglia LEP, 2017a (p. 12).  
<sup>34</sup> <https://newanglia.co.uk/project/energy/>

The key sectors in the Greater Essex area include *logistics and transport* with expertise facilitated by the presence of major sea ports and two international airports (Stansted and Southend) and *life sciences and health/social care operations* at Chesterton Research Park and at the county's two main universities. Anglia Ruskin University is developing Med Tech facilities at Harlow and Chelmsford while the University of Essex is undertaking research in healthcare and assisted living at its campus in Colchester.

Other key sectors are advanced manufacturing in automotive and medical/dental/optical machinery and pharmaceuticals; digital and creative services; wholesale and retail trade; and financial and business services.

Examples of hubs/corridors facilitating these key sectors already thriving in the region are outlined in table 4.1.

**Table 4.1: Examples of hubs/corridors facilitating key sectors operating in the region**

New Anglia	Greater Essex
<p><b>Innovator Martlesham Tech Campus</b> – collaborative 'ecosystem' for high-tech ICT companies located on Adastral Park</p>	<p><b>Innovation Centre, University of Essex</b> – business accommodation with access to the business community, academic support and on-campus resources and facilities</p>
<p><b>Ipswich Waterfront Innovation Centre</b> – single point of integration and access between enterprise, facilities and academic expertise. A site for academic and economic regeneration</p>	<p><b>North Essex Energy Group</b> – group of public and private sector organisations working together to unlock energy and low carbon-related growth</p>
<p>Norwich-Cambridge tech corridor:</p> <ul style="list-style-type: none"> <li>▪ Norwich research park - one of the largest European single-site concentration of research in food, health, and life sciences.</li> <li>▪ Hethel engineering centre – innovation hub serving hi-performance engineering and manufacturing in the region</li> <li>▪ The Food Enterprise Park – hub for agri-food innovation</li> </ul>	<p><b>Essex Plant Innovation Centre</b> – combining research skills, expertise and technology to address challenges facing farmers, technologists and those in the agricultural and horticultural sectors.</p>
<p>Great Yarmouth/Lowestoft Enterprise Zone:</p> <ul style="list-style-type: none"> <li>▪ Suffolk Park – business environment for companies in the digital and media, food and agriculture, and high value manufacturing</li> <li>▪ Scottow Enterprise Park – private high voltage renewable electricity network.</li> <li>▪ Egmere Business Zone – site developed to support investment associated with the offshore renewables sector</li> <li>▪ Nar Ouse Business Park – hub built to stimulate business growth, driving research and development, attracting international businesses</li> <li>▪ Stowmarket Enterprise Park – focus on agri-tech, food, health sectors, digital and media-based businesses</li> </ul>	<p>Harlow Enterprise Zone:</p> <p><b>Kao Park</b> – largest Data Centre development with full planning consent under construction in the South East of England</p> <p><b>Harlow Science Park</b> – design and build opportunities with a focus on Med Tech, Life Science and IT sectors, working with Anglia Ruskin University.</p> <p><b>Templefields</b> – industrial estate offering SME manufacturing space</p>

New Anglia	Greater Essex
<p><b>Centre for Environment, Fisheries and Aquaculture Science, Lowestoft</b> – laboratories providing support, analysis and research for marine and freshwater science projects</p>	<p><b>Arise Innovation Hubs (Chelmsford &amp; Harlow)</b> – collaborative workspaces in an entrepreneurial ecosystem, with access to university facilities and support focusing on health, wellbeing and performance businesses.</p> <p><b>South Essex Economy</b> - There is a rich culture of entrepreneurialism and is home to leading brands including Ford, Amazon, National Westminster Bank and Olympus among others.</p> <p><b>Basildon</b> - More businesses start up in Basildon than anywhere else in Essex. Basildon is ranked 9th best in terms of the number of business start-ups per 10,000 population. Basildon has a larger concentration of ICT jobs than anywhere else in Essex. One quarter of Essex's creative jobs are in Basildon, with nearly 50% more jobs in this industry than the nearest comparator<sup>35</sup>.</p> <p><b>Thurrock</b> – London Gateway is increasingly known major operator in international shipping. The first three berths (of an eventual six) have hosted some of the largest ships in the world with further berths under construction.</p>

#### 4.1.2 Opportunities and Challenges

- As outlined in section 2, tackling the climate emergency will require the simultaneous decarbonisation of several different sectors, and significant investment in more sustainable energy and food production, as well as greener logistics and construction. As an area of the country with significant geographical and physical advantages that has resulted in existing specialisations developing in a number of these key sectors, including Offshore Wind, Nuclear Power, Agri-Food and Agri-Tech, Logistics and Construction, East Anglia and Essex are well-placed to be at the forefront of this. Analysis suggests that investment in greening these sectors will also have significant positive benefits for the local economy. Many of these sectors make heavy use of transport infrastructure, and future transport plans should take into account the specific needs of each of these sectors as they drive towards a more sustainable future.
- The region is also home to several high-tech clusters specialising in high-value sectors such as Life Sciences, ICT and Niche High-Tech Manufacturing. Unlike the sectors listed above, these sectors are not anchored to the region due to its physical advantages, rather they exist because specialised agglomeration benefits have developed over time, leading to the formation of a cluster. The presence of a high-value cluster in a local economy has valuable positive spill overs but cannot be taken for granted; if conditions become less favourable, clusters can and do dissipate and relocate elsewhere. Transport connectivity has an important role to play in this, and each cluster will have its own business-specific connectivity requirements and “wish-list”.
- Finally, due to its attractive rural and coastal assets, the region has a strong specialisation in tourism and the visitor economy. Although this is not generally considered a “high-value” sector, it still has considerable positive local economic impact as a source of employment to the region, particularly in more rural and coastal areas. The transport strategy must consider the long-term needs of this sector, in particular how visitors can access and move around the region in an efficient, enjoyable and environmentally friendly manner.

<sup>35</sup> Basildon Borough Council Draft Economic Plan October 2020 [https://www.basildon.gov.uk/media/10297/Basildon-Council-Draft-Economic-Growth-Plan-BEGP-2020-24/pdf/Basildon\\_Council\\_-\\_Draft\\_Economic\\_Growth\\_Plan\\_\(BEGP\)\\_2020-24.pdf?m=637395816147700000](https://www.basildon.gov.uk/media/10297/Basildon-Council-Draft-Economic-Growth-Plan-BEGP-2020-24/pdf/Basildon_Council_-_Draft_Economic_Growth_Plan_(BEGP)_2020-24.pdf?m=637395816147700000)

## 4.2 Human Capital and Skills

### 4.2.1 Strengths and Weaknesses

The evidence linking skills and productivity is well established, and as outlined in section 2, there is a bidirectional and mutually attractive relationship between high-skilled workers and the firms that employ them. An area with consistently high demand for high-skilled or otherwise specialised labour force will induce skilled migration into the area.

While a supply of graduate workers is important for knowledge-intensive industries, these workers are often recruited from a national labour pool. Providing local residents with the right combination of skills required by local industries, often taught in a further education or apprenticeship setting, can have a more direct impact on employment outcomes for resident populations.

Knowledge institutions play a vital role in generating, attracting and retaining skilled workers within a local area. For example, the success of Cambridge and Oxford Universities in providing a constant stream of knowledge workers into the local economies has played a major role in the success of their respective tech and innovation hubs. Growing and strengthening existing knowledge institutions across the region is a vital element of any future regional skills strategy. Similarly, East Anglia's thriving energy sector has deep ties with several leading universities, including University of East Anglia (UEA), University of Cambridge, the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) and the Welding Institute (TWI). Scottish Power has placed East Anglia at the centre of its ambitious skills strategy, engaging with more than 3,000 pupils; including sponsorship of ten engineering masters at UEA.

Within the New Anglia LEP area, there are several institutions of higher and further education which are supporting the area's growing knowledge intensive sectors. These institutions include the University of East Anglia, the Norwich University of the Arts, the University of Suffolk and New Anglia College Group, consisting of 11 colleges. According to the Complete University Guide, the three universities are ranked 21st, 76th and 129th among universities in the UK.

New Anglia is also focussing on building excellence in STEM disciplines across its education and skills system, which are most relevant for the area's high impact sectors such as energy. Examples of specialist centres that were recently completed with a financial contribution from the LEP include:

- Ipswich Waterfront Innovation Centre focussing on STEM and ICT sectors;
- International Aviation Academy at Norwich, a collaboration with KLM Engineering to provide aircraft services;
- Easton and Otley College, a construction training centre with a focus on new technologies; and
- The first National Skills Academy in the UK for financial services, located in Ipswich.

In 2017 30.9% of the working age population in New Anglia had a qualification at the level of NVQ4 or above. About 7% of school-leavers in Norfolk and Suffolk took up apprenticeships in 2015/16 which is slightly higher than the national average of 6%, according to the 2017 New Anglia Economic Strategy Evidence Report.

The area's higher education spending on R&D is about 2.8 times the national average. However, New Anglia's innovative research production in the main science subjects such as biological sciences, computer science, and engineering lies below the national average, according to Research Excellence Framework (REF) results.<sup>36</sup>

The Greater Essex area has several university centres and further education colleges where students acquire skills through courses and research. The universities include the University of Essex, Anglia Ruskin University (which has a med-tech campus in Chelmsford), and Writtle University College, as well as multiple colleges involving traditional courses and apprenticeships.

The area also has specialist skills initiatives such as the Knowledge Gateway at the University of Essex, which aims to improve skills available for knowledge-based enterprises operating in science, technology and the creative sectors in the area including advanced manufacturing, life sciences and healthcare, and digital and creative services<sup>37</sup>. Another example is the Stansted Airport College, which is a partnership between Harlow

<sup>36</sup> <http://smartspecialisationhub.org/wp-content/uploads/2018/02/NEW-ANGLIA-SSH-PROFILE-Dec-2018.pdf>

<sup>37</sup> Enterprising Essex: Opportunities and Challenges

College and Stansted Airport, offering a range of professional and technical courses in subjects such as aviation, engineering, business, hospitality and events. Harlow College also has an Advance Manufacturing Centre with the aim to grow the high technology skillset of local engineering and manufacturing businesses.

Around 33% of the working age population in 2017 were educated to at least NVQ 4 level, therefore in relative terms Greater Essex is more than five percentage points behind Great Britain overall by qualification level.<sup>38, 39, 40</sup> However, the area's GCSE results in 2016 were better than England overall by about four percentage points. People in Essex are more likely to work at a higher level of occupation relative to their highest qualification compared to the UK overall.

#### 4.2.2 Opportunities and Challenges

In the section above, it was identified that the region currently suffers from below-average skill levels, and that this has the potential to constrain economic growth within the region. Fundamentally, there are two methods to address this: skills development programmes for existing residents, and attraction and retention of skilled workers. There is no either/or: both have a crucial role to play. As outlined in section 2, there is a sound logic to a strategy of attempting to attract remote or hybrid workers to locate in the region. Not only does this increase spending on local services and provide induced employment demand, but it also increases the stock of human capital. There is a well-understood link between levels of human capital in a regional economy and productivity, entrepreneurship, and firm growth.

- The role of transport within providing local residents with access to education and training opportunities is discussed in the rural and coastal communities note, however it should be reiterated here as it also has a significant role to play in driving economic growth in a socially inclusive fashion; transport connectivity is important as one of a package of measures, to make it as easy as possible for rural residents to access sites of education through active or public transport means wherever possible.
- There are several different factors that promote the attraction and retention of skilled workers; these include access to employment, access to amenities, and a high quality of life. Both inter-regional and intra-regional transport connectivity has an important role to play in all these factors.
- Within the region, many people will still be travelling to work each day, and their places of work may be in both urban or non-urban locations. Ensuring that these movements are efficient and sustainable allows labour catchments to expand and a more cohesive and integrated regional economy to emerge, with associated agglomeration and regeneration impacts. The same infrastructure also provides for increased spatial access to wider regional amenities – including the unique mix of coastal, rural and urban amenities that would be most attractive to skilled migrants.
- Inter-regional connectivity is also an important driver of regional attractiveness to mobile workers. Remote workers employed by firms located outside the region may still require connectivity to their office a few times a week, and the more speedy, efficient and reliable the connectivity, the more attractive the region is to these migrants. Access for non-employment purposes is also important; to attract migrants from elsewhere in the UK, a good connection to that location is a crucial advantage in allowing people to return to see friends and family regularly.
- Finally, the ability of transport infrastructure interventions to improve quality of life in a place is also a significant driving factor of location decisions; very few people wish to settle somewhere with poor air quality, unsafe roads, or a lack of active transport opportunities. Young graduates in particular tend to have low levels of car ownership and quality of local and regional public transport systems are therefore of fundamental importance.

<sup>38</sup> <https://www.nomisweb.co.uk/reports/lmp/la/1941962833/report.aspx>

<sup>39</sup> <https://www.nomisweb.co.uk/reports/lmp/la/1946157203/report.aspx>

<sup>40</sup> <https://www.nomisweb.co.uk/reports/lmp/la/1946157204/report.aspx>

### 4.3 Summary

The outcome of this review of opportunities and challenges is summarised as follows, which translate into specific economic goals for future appraisal as outlined in the following section:

- The northern and eastern fringes of Norfolk and Suffolk suffer from issues associated with rural peripherality, including patchy infrastructure provision, low levels of enterprise and innovation<sup>41</sup>, as well as difficulty in attracting young graduates and/or accessing suitably further education skilled local workers<sup>42</sup>. The key here is to better integrate these peripheral areas into the economic market areas of their local employment centres, without compromising the high levels of natural capital that make them unique and attractive areas in their own right.
- A challenge facing Greater Essex (including Southend and Thurrock) is to tackle its disadvantaged urban communities in coastal areas.<sup>43</sup> Making better use of coastal assets, including in transport and logistics, offshore renewables, and tourism to provide employment opportunities, is key here.
- The region suffers from low levels of graduate retention.<sup>44</sup> This is partly due to the lack of a single central conurbation with the diverse and exciting entertainment offer available in London or Manchester. The region needs to consider what its unique offer is to attract and retain young workers.
- One almost inevitable outcome from the general low levels of density and lack of a major urban area is a relative over-reliance on private car use. This presents particular challenges for a sustainable agenda.
- Given existing strengths in Offshore Wind, Sustainable Construction and Agri-tech, there are few geographies better placed within the UK to lead a green recovery strategy than the East of England. As outlined above, this would be of significant benefit to the local economy as well as nationally.
- It is thought that post-COVID-19 behavioural changes could be a key driver in the reduction in intra-regional inequalities over the next decade. The study area has the ideal combination of a short distance from London and high amenity values to be an attractive proposition for skilled migrants.
- New Anglia and Greater Essex LEP sub-regions both have strong collaboration and labour market links with neighbouring innovation-superpower, Cambridge, and certainly the greatest national economic influence, London. A policy of ongoing integration with the former provides for opportunities for both resident workers and to attract new clusters of firms, given the right offer for businesses.
- There are opportunities for nationally significant cluster developments in Construction, Life sciences, Agri-tech and ICT, and these are acknowledged by New Anglia and Essex local industrial strategies.

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<sup>41</sup> 48 businesses created per 10,000 residents compared to the UK average of 72, while only 14% of active enterprises introduced a new or significantly improved process or service between 2010 and 2012, below the UK average of 19% **Invalid source specified**.

<sup>42</sup> In 2015, 36.7% of workers in Norfolk and Suffolk had a qualification of the highest level (NQV4 and above; for higher education this implies at least a bachelor's degree), while at the national level the relevant figure was 42.9% **Invalid source specified**. Furthermore, over the academic years 2014-15, more students left Norfolk and Suffolk to study elsewhere than those choosing to study in the area (ibid.).

<sup>43</sup> Parts of the Tendring District in north East Essex are the most deprived parts in the country, according to the Indices of Multiple Deprivation for England, published by the Department for Communities and Local Governments **Invalid source specified**. Furthermore, Castle Point in Essex is one of two authority areas in the country with the smallest proportion of over-16s holding advanced qualifications (ibid.).

<sup>44</sup> CE analysis of Higher Education Statistics Agency (HESA) data shows that the share of graduates from an East of England institution that are employed in the region stands at 53.3%, one of the lowest retention rates in England (more specifically, only the East Midlands, South East and South West have lower rates). When excluding those that did not live in the region prior to their studies, this figure falls to 10.6% (once again 4<sup>th</sup> lowest in England).

## 5 Engaging with Our Partners

### 5.1 Background to Engagement

A key part of the development of the strategy and its associated evidence base is the engagement process throughout each stage. This is vital to ensure that partners are kept informed of progress being made at key stages and to ensure their views are fed into the process, but ultimately that the partners across the region buy into the strategy and can use it to help inform, support and justify measures and initiatives.

During December 2020 Transport East held a series of deep dive workshops to help develop the first stages of the strategy. These workshops involved Transport East engaging with its partners and organisations within the region to develop the following topic areas:

- The role of transport in the economy
- Levelling up rural and coastal communities
- Unlocking international gateways

With regard to the role of transport in the economy a workshop was held virtually with key partners to understand their thoughts, challenges and opportunities associated with the role that transport infrastructure and policy can play in economic recovery.

Transport East reviewed how the Transport Strategy could benefit economic recovery in the East of England following the COVID-19 pandemic and longer-term sustainable growth. As part of this stage of the engagement, feedback was sought on the current issues and challenges facing economic growth and recovery in the region, and how the Transport Strategy could help to address them.

### 5.2 Engagement Feedback

A summary of the workshops, including attendees and the key feedback themes are outlined for each of the topic areas below.

Transport East held two workshops for this topic area:

- Workshop 1 – Monday 14<sup>th</sup> December 2020 between 1pm to 3pm
- Workshop 2 – Tuesday 15<sup>th</sup> December 2020 between 9.30am to 11.30am

Representation at both workshops was spread geographically across the region and included contacts with areas of expertise from the following organisations:

- Suffolk County Council – Economic Development
- Suffolk County Council – Policy and Strategy
- Suffolk County Council – Transport Planner
- East Suffolk Council – Economic Development
- West Suffolk Council – Economic Development
- Ipswich Borough Council – Economic Development
- Breckland Council – Major Projects Delivery
- Breckland Council – Partnership Manager
- Babergh and Mid Suffolk District Council – Economic Development and Regeneration
- Braintree District Council – Economic Development
- Epping Forest District Council – Sustainable Transport
- New Anglia LEP – Infrastructure and Enterprise
- New Anglia LEP – Technical Coordination
- Suffolk Chambers of Commerce – Policy and Research
- Opportunity South Essex – Director level
- CBI – Policy
- Cambridge and Peterborough Combined Authority – Strategy and Transport Policy
- Federation of Small Businesses – Development
- Rail Future – Infrastructure Director level
- Rail Future East Anglia – Freight Group
- England Economic Heartland – Communications and Engagement

Key feedback themes per topic question

Q. How well do you think the current transport network support economic growth?

- North to south transport connectivity is fairly good, including connectivity into London.
- East to West transport connectivity is incredibly poor, including to Cambridge.
- Connectivity between existing clusters such as towns and cities is generally good, but more local connectivity is poor or non-existent.
- Transport doesn't currently support existing industry well enough, e.g. lack of sufficient motorway access for Port of Felixstowe, but also for future infrastructure development in the region, particularly near the coast.
- The unreliability of the transport network is a drag on productivity for businesses – need a more resilient network. The road network has pinch-points that are a constraint to growth.
- More walking and cycling routes are needed but there are many rural areas with dependency on transportation by car.
- General consideration for locations on the edge of sub-national transport bodies to not be forgotten about.

Q. What are the challenges and opportunities as part of the COVID recovery and the long-term economic growth?

Challenges

- Need improved broadband and 5G networks to improve working from home life and to ensure high quality connectivity.
- Encouraging a move away from using a car to help tackle climate change is difficult when so much of the region is reliant on cars for travel.
- Housing demand continues to increase so there is increased pressure on transport to accommodate this growth. Increased overcrowding will also put a strain on international travel, such as the ports/airports ability to accommodate larger numbers of customers.
- People returning to the region following a period working in London need reliable transport connectivity to make this move attractive, including links to amenities and schools.
- Lack of trust in public transport services contributes to increased car use, but concern if bus and rail companies will present viable transport options in future if there is less demand for the services.
- Needs to be a balance between delivering short term recovery, to meet existing demand, and the long-term strategy, what we want the future to be.

Opportunities

- Improving transport connectivity to amenities and public services could encourage investment in the region, therefore encouraging business relocation, and helping to retain the younger, skilled workforce that typically move to London or Norwich/Chelmsford for work.
- This would also improve the visitor economy if tourists were able to travel reliably and efficiently throughout the region.
- With increased working from home likely post-COVID-19, there an opportunity to increase active travel modes to serve local communities as less people will be commuting into the larger cities.
- Exploring the use of alternative fuels, such as electric and hydrogen, to create sustainable travel solutions and meet the decarbonisation agenda.
- A shift to alternative forms of public transport that are demand responsive will prevent reliance on an unreliable transport service.
- Opportunity to join up future housing development with required transport connectivity.

Q. What are the most important sectors in your region?

Q. How might they evolve or adapt over the next decade?

Q. How can the transport system support them?

- The energy sector in the East of England is one of the most prominent in the UK, including offshore wind, solar, nuclear, EfW and more. This industry will only continue to grow and innovate, so the transport infrastructure needs to support this.

- Manufacturing hubs are prevalent, and the Transport Strategy needs to improve the connectivity to the site itself and from the site to the customers. Tech-hubs/research facilities are also growing in the region which need to be factored in.
- Agriculture and food production sectors have significant facilities across the East of England – often busses are contracted to help workers travel across the county to work as they are unable to afford their own private car, but also because public transport services are non-existent.
- The tourism sector and visitor economy need to be supported by greener and more reliable transport links, including improving walking and cycling routes. Transport needs to improve connectivity around the region without reliance on cars.
- Freeports and logistics support several sectors including the wider supply chains. They need to be served by the right infrastructure, which could include greater use of rivers and waterways for freight. Consideration that Brexit will change customs requirements for ports.
- Small businesses are prevalent on local high streets and in town centres – increased working from home and the unlikelihood of people returning to large office spaces will change the transport patterns for these employees.
- The knowledge sector needs to be attracted from further west through improved rail links, including through the delivery of East West Rail.

Q. What would make the region a more attractive place for graduates or other skilled workers to want to locate?

Q. What else could we do to attract inward investment?

Q. How does the potential growth in remote working affect this/how can we achieve this whilst also acting to reduce transport emissions?

- Public transport needs improving to travel around the region – there is an expectation that people moving from London need a car to travel around and are very limited without one.
- Public transport needs modernising as it is not a fashionable mode of travel or appealing for longer distance travel.
- Longer term strategy should be for self-driving/autonomous vehicles.
- Increased housing, amenities, higher quality education facilities and developing local 'homeworking hubs' will attract younger and more skilled workers. The transport network should improve accessibility and unlock further growth in these areas.
- Infrastructure to support e-bikes and e-scooters within urban areas, particularly for college and university students.
- Improving public realm and closing roads could transform town centres, providing leisure and outdoor business opportunities, also helping to boost the night time economy. Improving walking and cycling routes generally across the region, including consistency of quality across the region, promotes an active lifestyle.

Q. What are your thoughts on the role of transport in economic growth?

- Transport is significant piece of the puzzle to supporting economic growth, but recognition that it is just a piece and there are other contributing factors.
- The region has existing assets and industry to thrive so it is a question of how can transport can help to capitalise.
- Demand responsive transport would particularly help in rural areas to help connect between market towns without using cars.
- Transport needs to be well funded, whether through the private or public sector.

## 6 The Role of Transport in Achieving Wider Outcomes

Addressing the challenges and realising the opportunities will require a wide range of policy agendas, of which transport plays a crucial part. Appropriate transport infrastructure is a necessary but not a sufficient condition of economic growth and building new infrastructure itself is expensive and high-in-emissions/carbon – therefore new infrastructure needs to be carefully selected and only the most strategically advantageous interventions pursued. It is important for policy to identify areas where transport is, or will be, once other policies are implemented, the constraining factor to achieving the desired objectives.

Transport also has a role in a wider place-making agenda, with transport policy being closely coordinated with both spatial planning and industrial strategy to deliver high-quality places that are both attractive and sustainable.

Long-term economic objectives need to be considered in conjunction with environmental and inclusivity agendas, and a balance struck between supporting firms and workers, tackling inequalities, and rapidly reducing emissions. The key here is the identification of complementary interventions that achieve multiple objectives simultaneously. In the face of changes to travel patterns, either as a result of new working patterns, or in response to the climate emergency, opportunities to make better use of existing assets, and to “design in” sustainability and inclusiveness to economic growth plans from the start.

The “Stage 1A Wider Outcomes” report identified a set of key public policy themes that are most relevant and aligned across national, regional and local levels. These prevalent outcomes, described in Section 1.3, represent the public sector’s call for action and intention to fund and finance. Naturally, they include elements from all three components of the triple bottom line: economic, social and environmental goals.

- The requirement for new jobs, housing and development are clearly a priority for economic prosperity. Additionally, there is a recognition that future economic growth will hinge on digital advancement, sector diversification and a modernisation of the energy sector, towards more sustainable forms of energy production.
- Climate action and decarbonisation also feature with very high frequency across relevant policy documents, backing the UK’s significant commitment to tackling climate change.
- Socially focused objectives are also top priorities, with policy documents emphasizing the need for schemes to concentrate on delivering health benefits such as active travel and mitigating health risks such as pollution. It is also made explicit that investments in specific geographies should take into high consideration the benefits on the local populations of those areas.

In the table below, it is possible to connect the wider outcomes from Section 1.3 and the economic goals from Section 4.3, to the role infrastructure will have in achieving these. Even though most of these goals and outcomes are cross-cutting, the table provides a clear normative to operational link between aims and practical approaches:

**Table 6.1: Role of infrastructure in facilitating identified strategies and wider Outcomes**

Wider Outcomes	Economic Goals	The Role of transport strategy
Protect and enhance the built and natural environment	Implement green recovery strategy	Infrastructure enables both modal shift and technological shift (as appropriate) and drives transition to sustainable / zero carbon.
Support skills, retention and inclusion and employment opportunities	Attract skilled home workers	High quality local infrastructure can improve quality of place, but mostly by improving access to main cities, London and international gateways, area becomes attractive proposition to “1 day a week” commuters.
	Improve Graduate Retention	Transport and digital infrastructure can improve attractiveness – either through improved quality of place, or greater accessibility to family, friends and leisure opportunities.

<b>Wider Outcomes</b>	<b>Economic Goals</b>	<b>The Role of transport strategy</b>
Promote a productive and diverse economy	Integration with Cambridge and London economies	For those nearer districts – well coordinated infrastructure led development that maintains high quality business and residential locations to allow Cambridge and London innovation ecosystems to expand organically.
Focus on locally important growth areas	Build high-value clusters	Enabling extension of existing centres, coordinate infrastructure with housing and commercial property developments, identify needs of specific clusters, improved access to domestic and international markets.
Support the energy sector (primarily offshore wind)	Bring jobs to coastal communities	Infrastructure can have a range of direct and indirect impacts, from boosting local service demand via encouraging tourism and WFH relocations, to providing greater access for coastal residents to employment and education opportunities.
Reducing carbon emissions in the East of England and Promote active, healthy and safe lifestyles	Address over-reliance on private car use	Infrastructure can enable modal shift where possible, however more than most geographies, East of England is reliant on a strong roll-out of EV infrastructure to encourage rapid technology shift in order to meet zero carbon goals.
Digital connectivity	Address rural peripherality	Targeted combination of digital and local transport infrastructure towards local centres allows rural residents to partake more easily in local economy.

## 7 Conclusions

This note began by outlining the agreed desired regional outcomes that emerged from workstream 1A. It then went on to discuss the theories of economic growth and the role of transport, and the national and regional economic and geographical context.

Finally, it built on this theoretical basis to identify several specific opportunities and challenges, divided into Sectoral Structure and Human Capital and Skills. To compliment the development of Transport East's Strategy to 2050, it is integral to consider transport's role in addressing these challenges and opportunities, indicating what is required within the strategy to support economic goals.

### 7.1 Key Findings and what this means for the Strategy?

Academic economic geographers identify the critical role that transport infrastructure can play in driving effects such as dynamic agglomeration forward, as both a facilitator of the integration of neighbouring economic areas and as a direct attractor of key businesses and workers. In practice however there is often a dichotomy between centralisation and dispersed models of growth. The next stages of the transport strategy development will start to test this aspect in terms of an optimal economic vision.

An assessment of current constraints to economic growth within the region suggested that while international connectivity and north-south connectivity were above average, poor east west connectivity, a lack of first-mile-last mile options in some areas, and high levels of car dependency all presented significant challenges to developing, attracting and retaining firms and workers. It should also be noted that there are pockets of poor north-south connectivity particularly via sustainable modes of travel. These can be seen in the South of Essex in particular.

Other growth constraints identified included skill levels in the region being below the UK average and relatively low levels of innovation and entrepreneurialism; it was concluded that high-quality transport infrastructure has a role to play in tackling these by attracting skilled workers to the region, and better connecting residents to employment and education opportunities.

Following the deep dive analysis, there seems to be alignment with existing strategic plans and that the greatest opportunities for high-value cluster development revolve around offshore renewables, agri-food, ICT, modern construction, high-tech manufacturing, tourism, and logistics, and that each requires their own consideration within a future transport plan.

The impacts of both macro-economic (e.g. Brexit), social (e.g. growth in remote working) and technological (e.g. automation) factors will be felt on both firm strategies and location decisions. Resident migration and commuting patterns, both need to be carefully considered in any strategic transport plan whether this be dispersed or centralised growth plans.

Finally, the workstream concluded that complementary strategies should be sought that balance long-term economic development objectives with both other social and environmental objectives and where possible, short-term economic recovery strategies. Most importantly, transport planning must be integrated with wider spatial and sectoral development plans wherever possible.

The key challenges and opportunities identified were:

- 1 Skills development is below the UK average and relatively low levels of innovation and entrepreneurialism. This needs to change.
- 2 The greatest opportunities for high-value cluster development revolve around offshore renewables, agri-food, ICT, modern construction, high-tech manufacturing, tourism, and logistics, and each required their own consideration.
- 3 The impacts of both macro-economic (e.g. Brexit), social (e.g. growth in remote working) and technological (e.g. automation) factors will be felt on both firm strategies and location decisions, and resident migration and commuting patterns.

**Conclusions**

It should be noted however that given the current lack of understanding of the true impacts of COVID-19 it is difficult at this stage to be definitive as to whether these conclusions will remain in a post COVID-19 scenario. Some of the potential impacts as a result of COVID-19 on the transport system include more people working at home and consuming in their local community increasing the demand for very short distance infrastructure primarily through active modes as people use local amenities more frequently.

Peak period travel may also be reduced as less people will be undertaking daily commutes, in addition flows may alter with people adopting a more flexible working pattern. This has implications for the current necessity for transport infrastructure systems to be designed around peak period travel e.g. passenger transport provision. As a result of less commuting and more flexible options to allow working at home people may live greater distances from their physical place of work which may at certain points during the working week increased middle distance transport as workers visit client’s colleagues and collaborators. This may also mean that transport for non-work purposes because a higher relative priority e.g. through having good connections to friends, family, education, leisure and entertainment opportunities become more of a factor in residential choice.

The resultant transport strategy must balance long-term economic development objectives with both other social and environmental objectives, and short-term economic recovery strategies. Focus from an economic perspective needs to include:

- Improve the poor transverse connectivity across the region and beyond, to support our key sectors.
- Maintain and improve international / UK connectivity and our radial connections.
- Improve first-mile last-mile options and reduce high car dependency.

Finally, and in order to move forward the deep dive follows on from the work completed to derive the wider outcomes for the resultant transport strategy and helps enrich/corroborate the findings already identified through the Regional Evidence Base and area based non-transport documents such as Local Plans and Local Industrial Strategies. In summary the following table (Table 7.1) shows the key issues highlighted in this report and the resultant next steps for the strategy on how these could be addressed:

**Table 7.1: Key Issues and Resultant Actions for the Transport Strategy**

Key Issues	Key Actions for the Transport Strategy to 2050
<p>Poor east-west connectivity (and poor north-south in South Essex) and a lack of first mile options in some areas and high levels of car dependency.</p>	<ul style="list-style-type: none"> <li>• Lobbying and Support for strengthening east-west connectivity throughout the region as well as north-south in South Essex.</li> <li>• Work with Local Transport and Planning Authorities in strengthening PT and active mode provision to encourage mode shift in urban areas.</li> </ul>
<p>Rural peripherality in the northern and eastern fringes of Norfolk &amp; Suffolk – Inconsistent levels of infrastructure provision.</p>	<ul style="list-style-type: none"> <li>• Improve connectivity (by digital means for those who can work remotely and by sustainable infrastructure means for those unable to do so) of rural areas with urban centres, linking with the key Transport East theme of levelling up rural and coastal communities.</li> </ul>
<p>Disadvantaged urban communities in coastal areas.</p>	<ul style="list-style-type: none"> <li>• Improving connectivity with disadvantaged communities particularly in Essex with employment and educational opportunities but also other parts of rural and coastal areas in Norfolk and Suffolk.</li> </ul>
<p>East of England tends to see lower levels of Access to Economic Mass than England as a whole (representing the level of connectivity to economic activity)</p>	<ul style="list-style-type: none"> <li>• The strategy needs to ensure through the wider outcomes that it supports Local Authority Economic Strategies.</li> <li>• From the Strategy itself improve connectivity of disadvantaged communities in the East of England with employment and educational opportunities.</li> </ul>

Key Issues	Key Actions for the Transport Strategy to 2050
Low levels of graduate retention across the region due to the lack of a single central conurbation with the diverse and exciting entertainment/lifestyle offer.	<ul style="list-style-type: none"> <li>The strategy needs to consider as part of the linkages to wider outcomes the unique offering of the region to graduates, improving connectivity to employment and entertainment opportunities.</li> </ul>
Overall reliance on private car use due to the general low density and lack of major urban areas, presenting particular challenges to the sustainable agenda.	<ul style="list-style-type: none"> <li>The strategy needs to consider opportunities for modal shift to Passenger Transport (addressing transport deserts) or active modes in lower density residential areas, ensuring reliable connectivity to local services and education and employment.</li> </ul>
Compared to England (excluding London) both Norfolk and Suffolk, and Greater Essex, have a higher share in middle skill (non and semi routine) occupations, where more than half the jobs could be replaced through automation in the future.	<ul style="list-style-type: none"> <li>The strategy needs to as part of its linkages to wider outcomes consider how it will attract business clusters resilient to automation to the area through greater connectivity, service provision and skilled population.</li> </ul>
Growth constraints include skill levels in the region being below the UK average and relatively low levels of innovation and entrepreneurialism.	<ul style="list-style-type: none"> <li>The strategy needs to consider as part of the linkages to wider outcomes the unique offering of the region to graduates, improving connectivity to employment and entertainment opportunities.</li> </ul>
Prominent sectors – low carbon energy generation, agri-tech and agri-food make heavy use of transport infrastructure.	<ul style="list-style-type: none"> <li>As a first step the strategy needs to consider what these sectors require to ensure more efficient supply chain and modal shift to encourage modal shift and resiliency of transport infrastructure.</li> </ul>
High tech clusters are not location bound and can easily relocate as conditions become less favourable	<ul style="list-style-type: none"> <li>The strategy needs to look at connectivity required for businesses, ensuring high levels of accessibility, encouraging business to remain and relocate to coastal areas within the region.</li> </ul>

The next steps for the overall strategy development are to complete the evidence-based documents and identify and test a series of different scenarios testing different approaches to spatial distribution and economic conditions both of which will have an impact on the transport networks. In parallel with this a draft set of transport outcomes will be developed in order to deliver the necessary policies and procedures to address the challenges and issues identified.

Once the transport outcomes have been developed, engaged upon and agreed, the development of the transport approach can begin to identify precisely how to deliver the strategy, e.g. thematically, spatially or a combination of the two. This will then ultimately inform the strategy document itself.