Transport East

Integrated Sustainability Appraisal

Scoping Report

June 2021

Transport East

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1.   Introduction

1.1   Background

Transport East is the Sub-national Transport Body for the East of England, comprising public and private sector partners across Norfolk, Suffolk, Essex, Southend-on-Sea and Thurrock, providing a 'Single Voice' for the Transport Strategy and investment in the region. The partnership is developing its first Transport East Transport Strategy which aims to provide a sustainable strategic approach underpinning the region's future transport investment and support Transport East's ambitious and inclusive economic, social and environmental goals for the region to 2050.

Transport East currently has a pre-statutory status and while this also affects the status of the strategy and the legal requirements for environmental assessments, the intention is that preparation of the strategy will follow the same process as for a statutory transport plan. Transport East therefore is undertaking an Integrated Sustainability Appraisal to inform the development of the Strategy as part of ensuring that opportunities for enhancement are included and potential constraints are addressed by the Strategy.

The Integrated Sustainability Appraisal (ISA) incorporates:

- Strategic Environmental Assessment (SEA) in accordance with the Environmental Assessment of Plans and Programmes Regulations 2004 (SI 2004/ 1633, "2004 Regulations" as amended) (SEA regulations).

- Health Impact Assessment (HIA) using guidelines set out by the Public Health Observatories.

- Equality Impact Assessment (EqIA), as required by section 149 of the Equality Act 2010, as amended.

- Community Safety Assessment (CSA) as required by the Crime and Disorder Act 1998 and the Police and Justice Act 2006, as amended.

- Habitats Regulations Assessment (HRA) as required by the Conservation of Habitats and Species Regulations 2017, as amended.

- Natural Capital assessment to meet requirements in the Environment Bill (expected to be enacted autumn 2021).

Further detail for each type of assessment is provided in Chapter 3.

The SEA regulations provide a framework process including a scoping stage to determine the approach for the assessment of a plan or strategy. As part of scoping, feedback from the statutory consultees is sought and additionally scoping provides an opportunity for early consultation to be undertaken with a wider stakeholder group.

1.2   Purpose of this Report

This Scoping Report considers the policy and legislative context for the ISA and the development of the Transport Strategy and identifies the current baseline environment and how this is likely to change in the future. Potential constraints and opportunities relevant for the Transport Strategy are highlighted. The Scoping Report sets the proposed ISA methodology and how the ISA will be undertaken alongside the development of the Transport Strategy so that the sustainability objectives are addressed.

1.3   Report Structure

This report includes the following chapters:

- Chapter 2: introduces Transport East and the Transport Strategy, including its rationale and the geographic and temporal scope of the plan

- Chapter 3: provides a summary of the ISA approach, looking at the overall process of the ISA as well as additional supporting assessments required

- Chapter 4: summarises the review of Plans, Policies and Strategies (PPS)

- Chapter 5: provides an overview of the current baseline conditions and trends and pressures influencing likely future changes to the baseline, referred to as a baseline review and identifies key issues and opportunities

- Chapter 6: sets out the proposed ISA Methodology, the ISA objectives and additional assessment or topic specific methodology

- Chapter 7: identifies the next steps required for consultation and the ISA

- Appendix A: Supporting figures (Appendix A: Figure 1-6)

- Appendix B: Review of all relevant PPS, which have been summarized for Chapter 4 of the main scoping report

- Appendix C: Designated sites of international importance

- Appendix D: Habitats and Ecosystem Services

2. Transport East Transport Strategy

2.1 Context

The vision for the Transport East Transport Strategy is to create a thriving economy for the region, with fast, reliable, and resilient transport infrastructure driving forward a future of inclusive and sustainable growth for decades to come. Figure 2.1 shows how the Transport Strategy will help deliver the goals for the region.

Figure 2.1 The role of the Transport Strategy

The audience for the Transport Strategy will be wide-ranging and the aim is that the Strategy will provide:

- Confidence to national decision-makers and delivery bodies to invest in the region: including Government, transport delivery agencies and private sector investors.

- Clarity and co-ordination for local and regional partners: including local authorities, community groups, businesses, transport operators and the general public.

The Transport Strategy is currently under development and is being addressed in three stages.

The first stage focusses on developing the evidence base and identifying the wider objectives that the Transport Strategy should support. The evidence base comprises of a series of "deep dive" studies covering the region's road and rail network, international gateways, rural and coastal communities, and the specific role of transport in economic growth. Alongside this, work on potential opportunities for decarbonization has identified the following four key areas of focus for the strategy which are as follows:

1. **Decarbonisation** – Achieving net zero emissions from the transport system at the earliest opportunity.

2. **Unlocking our International Gateways** – Better connecting our 13 ports and 3 airports, helping UK businesses thrive and boosting the nation's economy. Connecting the UK to international markets and attracting Foreign Direct Investment post-Brexit.

3. **Re-energising our Rural and Coastal Communities** – A reinvented, sustainable coast for the 21st century which delivers on our ambition to become the UK's foremost all-energy coast. Levelling up the critical inequalities in our rural and coastal communities.

4. **Connecting our Growing Towns and Cities** – Enhanced links within and between our fastest growing places and business clusters – connected to the rest of the UK. Enabling the East to function as a coherent economy and improving UK productivity and post-COVID recovery.

2.2 Regional Challenges

The "deep dive" studies, along with the production of the road and rail focused regional evidence base and decarbonisation review, identified challenges which are summarised against each theme in the table below.

Table 2.1 Summary of challenges per key theme

Key Theme	Challenges
Decarbonisation	Brexit impact on UK trade, imposing heightened barriers for accessing a range of decarbonisation capabilities and selling products & services to European Union member states.
	Public funding is currently skewed in favour of electrification compared to other alternative fuels. There is also currently significant public funding invested in fossil fuel related transport.
	There are concerns about the sustainability of battery manufacturing and whether an effective recycling method can be developed to minimise the environmental impact of lithium/rare metals earth mining but there are also potential replacements for lithium under development such as silicon or sodium-ion batteries. Recycling technologies for lithium batteries are not keeping pace with the rapid rise in EVs.
	Safety concerns over the reactivity, storage and transportation of hydrogen to be overcome to make it an acceptable and credible fuel source.
	Technological gap in electric vehicles (EVs) to enable longer distance ranges, and broader applications.
	Rollout of EV charging infrastructure.
	Hydrogen fuel cells are currently more expensive to manufacture than their EV counterparts but there are potential areas for future development such as large scale storage of hydrogen produced using renewables such as offshore wind energy.
	There is potential to consider use of recycled biofuels
	There are limited initiatives advancing ways to mass-produce biomethane.
Unlocking our International Gateways	Ports and airports are reliant upon the resilience and reliability of the road and rail networks. More resilience and better recovery from disruption is required to support gateway expansion, encourage sustainability and encourage intra-regional connection. Specific issues include:

Key Theme	Challenges
	Rail network operations are close to or at operational capacity for freight and passenger movement.
	Rail connectivity is London centric, with a lack of east-west connections some initiatives are underway to help address this.
	The Strategic Road Network is essential for major ports, and the local road network is essential for regional ports. Many of the key routes have varying levels of infrastructure provision with unreliable journey times and are lacking resilience.
	There is a need for integrated logistics and manufacturing in the region to be support by growth at ports and airports, attracting inward investment within the region, and boosting jobs and regional exports.
	COVID-19 has posed one of the most significant challenges to freight and passenger movements in recent history with long-term consequences potentially for patterns of travel.
	Support is needed to lower operational, surface access and supply chain emissions in line with the national decarbonisation towards NetZero.
	Passenger movements are the primary function of airports but a minor function for some ports in the region. Much of passenger movement is London centric, with a need to boost accessibility catchments within the region, and tourism.
Re-energising our Rural and Coastal Communities	Coastal areas are significantly more likely to be below the average for England for many of the Index of Multiple Deprivation indicators, with rural areas tending to perform better in relation to these indicators, with the exception of education.
	Rural areas' main issues are around retaining skilled workers, particularly with a lack of real and perceived transport options to gain access to education, training and employment.
	Strategies to level up coastal and rural communities need to reflect their different challenges and opportunities.
Connecting our Growing Towns and Cities	The region has poor east-west connectivity as well as some pockets of poor north-south connectivity, a lack of first mile-last mile (beginning and ending of a journey, for example travelling to a bus stop or railway station) options in some areas, and high levels of car dependency.
	Growth constraints include skill levels in the region being below the UK average and relatively low levels of innovation and entrepreneurialism.
	High-quality transport infrastructure has a role to play in tackling constraints by attracting skilled workers to the region, and better connecting residents to employment and education opportunities.

2.3   Wider Outcomes

Transport East has set a series of wider outcomes to be supported through the delivery of the Transport Strategy to 2050. These will form the strategic goals of the Transport Strategy and aid in the testing of future transport scenarios. They have been used to set the foundations of the planning and implementation of a successful transport strategy. These were developed through policy and plan review and early engagement with local stakeholders. shown in Figure 2.2.

Draft Wider Outcomes
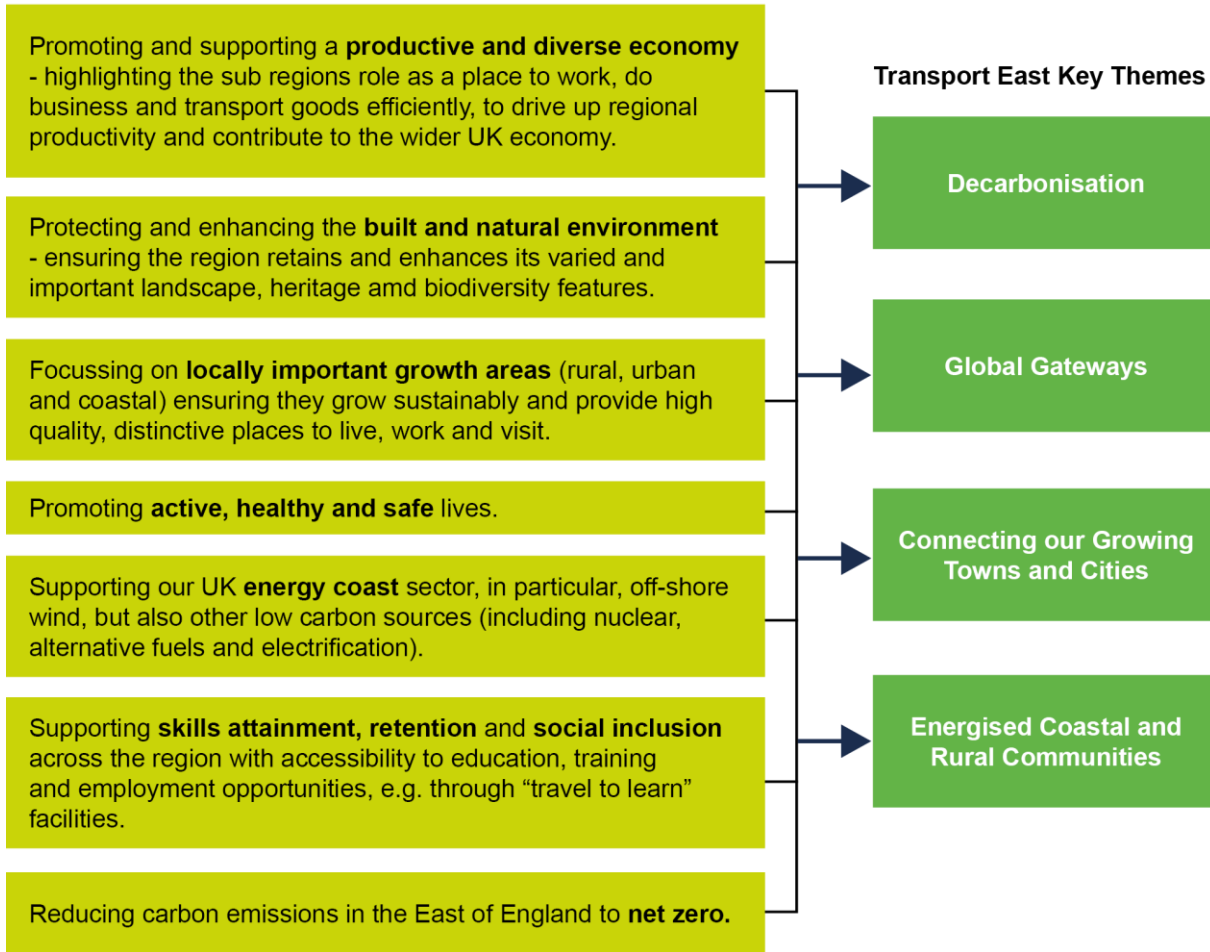
Figure 2.2 Transport East wider outcomes and association with key themes

2.4   Emerging Strategic Approach

Following the identification of wider outcomes, the Strategy should seek to support and address the challenges that the region faces, pathways have been developed for each of the four key themes that set out key activities that need to be undertaken to achieve the vision for each of these key themes. These are set out in the table below.

Table 2.2 Transport East Emerging Pathway Activities

Key Theme	Strategic Activities
Decarbonisation	• **Negative Carbon Developments:** All development is located and designed to generate zero emissions from transport, and to potentially facilitate the removal of carbon from the wider transport network. This cancels out the emissions growth under a 'do nothing' scenario. • **Substitute Trips:** Trips are substituted through digital, transport and land use planning interventions. (Reducing the need to travel through working from home and online conferencing/meetings where working practices, employer and employee preferences and broadband connections allow. Working near home and integrating public transport and active travel links into new residential developments.)

Key Theme	Strategic Activities
	• **Shift Modes:** Vehicle trips are reduced by switching modes to active and public transport, based on current UK best practice benchmarks. Under the 'additional target', trips are further reduced through increased mode shift to active and public transport, based on more ambitious assumptions that exceed current UK benchmarks. • **Switch Fuels:** Private vehicles, public transport and freight switch to zero carbon fuels in line with the projected UK national pathway up to 2030.
Unlocking our International Gateways	Ports: • **Capacity and Reliability Improvements:** Rail Capacity and journey time improvements for freight. • **Alternative Fuels:** Charging and Hydrogen infrastructure plus electrification of rail routes. • **Mode Shift:** HGV Shift to electrified rail or short sea shipping freight. Also, mode shift for employees. Airports: • **Improve connectivity to airports:** Sustainable surface access to airports for passengers and employees. • **Mode Shift:** Vehicle trips are reduced by switching to more sustainable modes based on current UK best practice benchmarks. • **Alternative Fuels:** Both ground and air operations.
Re-energising our Rural and Coastal Communities	• **Getting people to places sustainably**: Use of alternative fuels and vehicle trips are reduced by switching modes.. The role of active modes to reduce car dependency can improve local health indicators and leisure and tourism opportunities. • **Getting services to people:** Connectivity for businesses, and how transport accessibility and connectivity can assist deprivation levels in rural and coastal areas. Improving levels of rural/coastal accessibility via passenger transport facilities & rural hubs. • **Substitute transport trips with digital:** Vehicle trips substituted through digital transport and land use planning. • **Connectivity of coastal areas:** Improvement in connectivity and accessibility to coastal communities & economies.
Connecting our Growing Towns and Cities	• **Intra-Urban Connectivity & Accessibility:** Connectivity between key attractors within the urban centres and corridors in the region. • **Inter-Urban Connectivity & Accessibility:** Connectivity between key urban centres and corridors in the region, improving retention of skill and business sectors. • **Mode Shift:** Vehicle trips are reduced by switching modes to active and public transport, based on current UK best practice benchmarks. The strategy needs to consider opportunities for modal shift to PT or active modes in urban and low-density residential areas.

Each pathway will plot a trajectory to achieving Transport East's goals, setting out a detailed and rigorous assessment of each theme, with an ambitious and appropriate action plan. These will be agreed with partners.

2.5   Emerging Delivery Approach

In order to understand the resilience of focussing the Transport Strategy on the four key themes, a series of scenarios were tested and the results compared against the proposed wider outcomes, transport outcomes and each ot the four key themes. The purpose of the scenario development

and testing procedure was to identify a set of possible futures for the region, to quantify these in a rigorous manner, and then to explore their implications for the ability of the ultimate Transport Strategy to deliver both the wider and transport outcomes. Assumptions were made to create a range of alternative potential outcomes regarding the future of the Transport East area. These assumptions, classified in three broad categories (Economic, Spatial and Workplace) are given below:

- Three Economic Trajectories
    - Central Trajectory – The baseline economic trajectory for the local authority districts within the TE area, representing a "business-as-usual" case.
    - High Investment, High Housing Growth – This trajectory is intended to represent the ambitions of the two LEP areas covering the region, with high levels of investment leading to growth in productivity, employment and GVA in key sectors, and regional housing needs being fully met.
    - Low Investment, Low Housing Growth – This trajectory is intended to represent a situation in which it is assumed that both investment in the region and workers are lost to other areas of the UK who have taken more proactive steps to develop their region, resulting in a more pessimistic outlook for the East.
- Two Spatial Scenarios
    - Centralised – Urban growth rate doubled after Local Plan period (up to 2035) and rural growth rate scaled down accordingly.
    - Dispersed – Urban growth rate halved after Local Plan period (up to 2035) and rural growth rate scaled up accordingly.
- Two Workplace Scenarios
    - Back to normal – Share of people working remotely by occupation will return to 2019 levels.
    - Remote – Share of people working remotely by occupation will be at the level of March/April 2020.

The results of the scenario testing have demonstrated that location of growth and take-up of remote working would affect the delivery of the "optimum economic vision" for the region.

If future growth was more centralised (around urban areas), with high participation in remote working, the transport solutions might focus on local mode shift to sustainable modes. The other scenarios presented additional transport challenges, for example a dispersed growth trend, or return to higher long-distance commuting, could increase demand for car use, and alternative fuels may need to play a bigger role in decarbonisation.

In all scenarios, high levels of investment and growth would increase productivity, prosperity and wage levels within the region while remote working would offset the potential emissions impact of high growth and locating growth in urban areas would reduce car dependency.

All of the scenarios could play out in the future, and therefore the strategy needs to be resilient and flexible to meet the needs of the region.

Transport East are looking to develop a clear delivery pipeline that sets out key actions / initiatives / schemes that are required under each of the four key themes to deliver the strategic actions of

each pathway. In taking this approach there is flexibility to ensure that Transport East addresses the challenges of the region, enables growth and is aligned to central government's key ambitions. For instance, there is curently a focus on levelling up which would enable Transport East to progress schemes that deliver the rural and coastal pathway, and there have been funds such as Transforming Cities, which would see schemes that enable growth in and between the region's urban areas.

Following the identification of challenges across the region and the development of the pathways, through extensive stakeholder engagement, potential solutions have been gathered and will be assessed in a multi-criteria assessment (MCA) framework. The framework will look to identify solutions that best meet the requirements across one or more of the pathways.

The assessment framework will include assessment of peformance against a range of outcome, feasibility and deliverability criteria. A separate assessment against ISA objectives will feed into this framework to inform the selection of the best approaches including testing how these perform under the different scenarios. The ISA will also identify the types of mitigation that may be required and measures to be included for the implementation of the strategy.

Following the assessment, the best performing solutions to achieve the strategic actions of each of the four pathways will be put forward as the proposed investment and delivery plan for the region, setting out clear timescales to create a pipeline of solutions to come forward over the strategy lifetime.

The draft Transport Strategy will be published for public consultation along with the ISA documents and HRA and the consultation period will be 12 weeks. The comments received will then be considered in the finalisation of the Transport Strategy and delivery plan. The final adopted strategy willl be reviewed every 3 – 5 years to enable the strategy and delivery plan to adapt to the latest Government objectives.

2.6   Geographical and Temporal Scope of Transport East

Geographical Scope

Transport East is the sub-national transport body bordered by the Midlands Connect, England's
Economic Heartland, Transport for the South East transport regions as well as Greater London
(Figure 2.3). Transport East region is made of the counties of Norfolk, Suffolk, and Essex, and the
unitary authority areas for Southend-on-Sea and Thurrock (Figure 2.4). It comprises of five
transport authorities, 24 district/borough authorities and two Local Enterprise Partnerships (New
Anglia LEP and South East LEP).

Figure 2.3 Map of Sub-national Transport Bodies in England
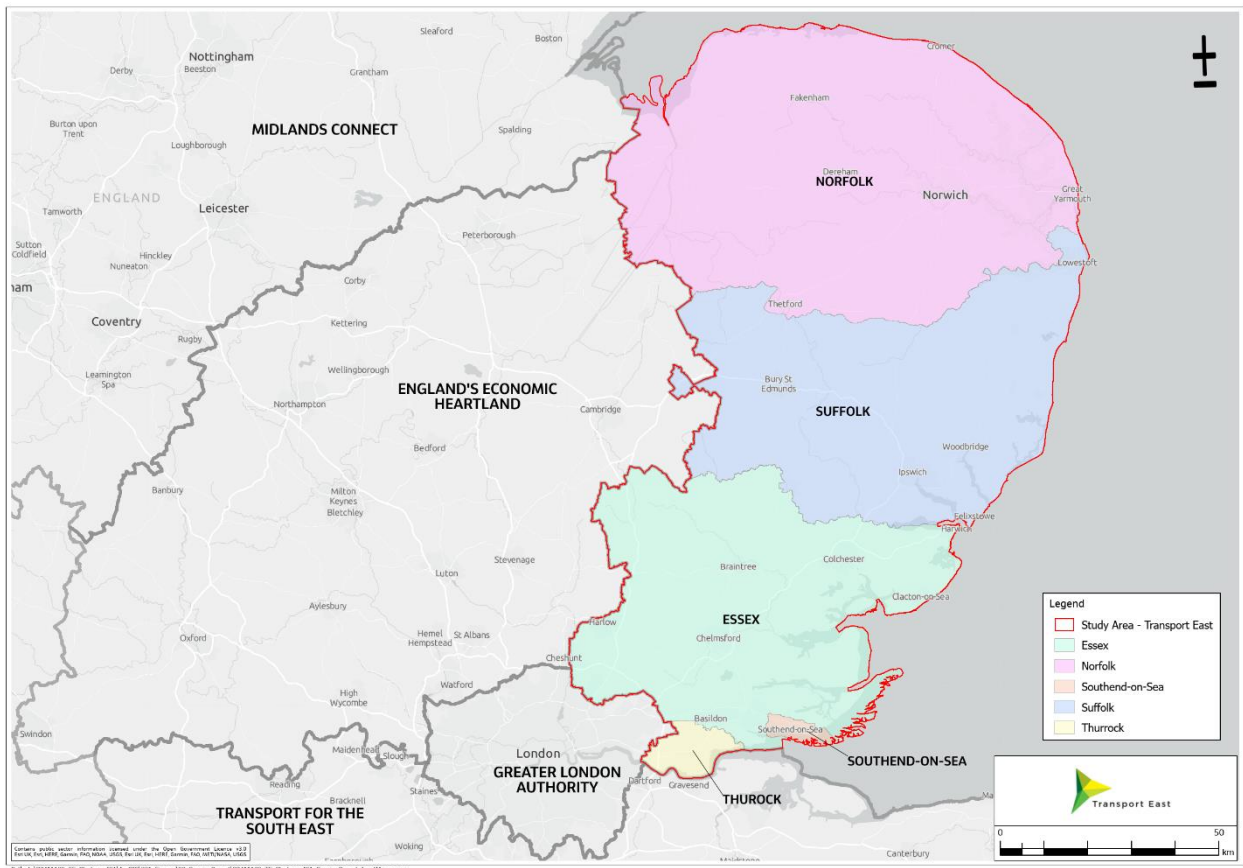
Figure 2.4 Transport East region and neighbouring sub-national transport bodies

The focus for the Transport Strategy will be meeting the needs of the Transport East area however the region's links to the north, west and south are part of the strategy as are connections through the ports and airports. In terms of the ISA, consideration will need to be given to the effects not just within the Transport East region but also for the bordering regions including potential for cumulative effects.

Temporal Scope

The Transport Strategy will be a plan to 2050. The best performing solutions to achieve the strategic actions of each of the four pathways will be put forward as the proposed investment and delivery plan (IDP) for the Region, setting out clear timescales to create a pipeline of solutions to come forward over the strategy lifetime. It is currently proposed that this will be reviewed every 3 – 5 years to enable the strategy and delivery plan to adapt to the latest government objectives.

3. ISA Approach

3.1 ISA Process

Transport East is committed to improving environmental, social, and economic wellbeing of the Region as indicated in the wider outcomes studies outlined in Chapter 2. As part of this commitment Transport East is undertaking Integrated Sustainability Appraisal (ISA) to inform the development of their Transport Strategy.

An ISA is a process for assessing the social, economic, and environmental impacts of a plan in a systematic and transparent way with the aim that sustainable development principles underpin the strategy.

The ISA is based around the strategic environmental assessment (SEA) process and has five key stages (Figure 3.1), including an initial scoping stage providing context and focus for the assessment, and iterative assessment of the developing plan, followed by consultation on the assessment and draft strategy documents. Consultation responses are taken into account in the finalisation of the strategy and a statement is then published identifying how the ISA has been taken into account. The final stage is to monitor the implementation of the strategy and environmental and social impacts.

| Scoping the Assessment | Assessment of the developing draft Strategy | Reporting: Draft Transport Strategy and ISA report | Consultation | Finalisation of Transport Strategy, ISA Statement & Monitoring Plan implementation |

Figure 3.1 Key Stages in the ISA process

3.2 ISA Assessments

The ISA brings together a full range of environmental and social assessments which are each outlined below:

- Strategic Environmental Assessment (SEA)
- Natural Capital Assessment (NCA)
- Health Impact Assessment (HIA)
- Equality Impact Assessment (EqIA),
- Community Safety Assessment (CSA)
- Habitats Regulations Assessment (HRA)

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Strategic Environmental Assessment

SEA is a means of systematically assessing the likely impact of a public plan, programme or strategy on the environment. SEA aims to offer greater protection to the environment by ensuring public bodies and those organisations preparing plans of a 'public character' (in this case, Transport East) consider and address the likely significant environmental effects.

SEAs are required under the SEA regulations[1], which transpose the SEA Directive (2001/42/EC). An SEA is mandatory for any plans, programmes or strategies which cover the following sectors: agriculture, forestry, fisheries, energy, industry, transport, waste or water management, tourism, town and country planning or land use and which set the framework for future development consent of projects subject to EIA regulations.

Qualifying plans under the SEA regulations as those which are '*subject to preparation and/or adoption by an authority at national, regional or local level or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government and required by legislative, regulatory or administrative provisions'.* Currently Transport East and the Transport Strategy under development does not have this formal status but there is commitment to undertake assessment complying with the regulatory requirements as part of supporting sustainable development objectives.

SEA is an iterative process involving collecting relevant data and establishing evidence of current baseline conditions and future trends, assessing potential environmental effects and proposing mitigation measures and recommendations to address the environmental effects identified at a strategic level.

Key guidance on SEA followed for the assessment approach for the TE Transport Strategy is set out in the *Planning Practice guidance on SEA and Sustainability Appraisal (2015)[2]* and the *Practical Guide to SEA (2005)[3].* In addition, consideration is given to the Department for Transports Transport Analysis Guidance (TAG) including *TAG A3 Environmental Impact Appraisal (2019)[4]* and *TAG A4.1 Social Impact Appraisal (2020)[5]* in so far as they address qualitative assessments and define topic area issues and also *TAG Unit 2.1 Strategic Environmental Assessment for Transport Plans and Programmes[6]*.

An assessment framework is developed comprising objectives and assessment criteria relevant to the area and strategy proposals based on an understanding of environmental issues and opportunities from the policy and baseline review. This also forms the framework for integrating the requirements of each of the assessments below.

Natural Capital Assessment

The Government's 25-year Environment Plan and the Environment Bill (once given assent) introduce requirements for the use of natural capital assessment and the concept of infrastructure development providing biodiversity and environmental net gain. These requirements and their implications for schemes will be considered in the Transport Strategy and ISA.

A natural capital approach can be used to understand the interdependencies between the natural environment, society and the economy, so that natural capital is considered holistically and integrated appropriately within decision making.

There are several policy and guidance documents which have identified the potential for transport infrastructure to contribute to the restoration and enhancement of natural capital and ecosystem services (particularly through proactive management of the 'soft estate) and these include:

- A Natural England report in 2014, investigating how land within or adjacent to transport corridors could be used or enhanced for green infrastructure that delivers biodiversity gain, ecological connectivity, and ecosystem services.

- The Environment Agency's Achieving Net Zero document [7], containing information on grassland management, with a focus on road verges. It identifies management measures that could improve the ecosystem service provision of road verges, including carbon sequestration.

- The National Infrastructure Commissions' Natural Capital and Environmental Net Gain discussion paper, considering the impact of infrastructure development on natural capital assets, identifying current approaches to natural capital and environmental net gain, and setting out next steps to ensure the impact of infrastructure on natural capital is understood and addressed.[8]

Health Impact Assessment

Health Impact Assessment (HIA) is a process in which the likely or potential health effects on populations of a proposed plan or project are identified along with the potential mitigation methods to reduce or avoid any negative impacts. The process will also seek to identify opportunities to maximise benefits.

There is no formal requirement for HIA or specific methodology to be followed but there is good practice and policy guidance which can be applied. The approach taken for this ISA is to include and combine the HIA assessment within the ISA 'Health' topic throughout the assessment. The approach used for the HIA follows guidelines set out by the Public Health Observatories[9].

Community Safety Assessment

Community Safety Assessments (CSA) are used to identify where possible community safety issues could occur. CSAs can also address potential issues by identifying opportunities to improve design function for future development, such as lighting design considerations to reduce road traffic collisions. In addition, personal security risks are considered such as how to improve personal security through either the reduction of opportunities for crime or through improvements to perceptions of security (where this perception would otherwise prevent potential users from travelling). Community Safety Assessments are required by the Crime and Disorder Act 1998 and the Police and Justice Act 2006, as amended.

Community Safety is included as an ISA topic for the assessment of the Transport Strategy.

Habitats Regulations Assessment

Habitats Regulations Assessments (HRA) are required in respect of any plan or project which, either alone or in combination with other plans or projects would be likely to have a significant effect on a site designated within the Natura 2000 network. An HRA is required by the Conservation of Habitats and Species Regulations 2017, as amended. Guidance on the Habitats Directive[10] sets out four distinct stages for assessment:

- Stage 1: Screening: the process which initially identifies the likely impacts upon a Natura 2000 site of a plan or project, either alone or in combination with other plans or projects, and considers whether these impacts are likely to be significant – this is undertaken without considering mitigation;

- Stage 2: Appropriate Assessment: the detailed consideration of the impact on the integrity of the Natura 2000 sites of the plan or project, either alone or in combination with other

plans or projects, with respect to the site's conservation objectives and its structure and function. This is to determine whether there will be adverse effects on the integrity of the site;

- Stage 3: Assessment of alternative solutions: the process which examines alternative ways of achieving the objectives of the plans or projects that avoid adverse impacts on the integrity of the Natura 2000 site; and

- Stage 4: Assessment where no alternative solutions exist and where adverse impacts remain: an assessment of whether the development is necessary for imperative reasons of overriding public interest (IROPI) and, if so, of the compensatory measures needed to maintain the overall coherence of Natura 2000 network.

The HRA requirements are incorporated into the ISA objectives and will be considered as part of the development of the strategy. In addition, to meet HRA requirements a Stage 1 assessment will be undertaken once the range of potential strategy interventions and proposals are identified and this will determine the requirement for a Stage 2 strategic level appropriate assessment to be undertaken for the Transport Strategy.

Equalities Impact Assessment

An Equalities Impact Assessment (EqIA) assesses the likely equalities effects of a policy, project or plan, as required by section 149 of the Equalities Act 2010, as amended. Its primary aim is to ensure that the policy project or plan does not cause disadvantages or discriminate against anyone whilst also considering potential opportunities for improving equality. The following protected characteristics are covered:

- Age
- Disability
- Sex and Gender
- Gender Reassignment
- Marriage and Civil Partnership

- Pregnancy and maternity
- Race
- Religion or belief; and
- Sexual Orientation

Equality and Diversity will be included as an ISA topic throughout the assessment of the Strategy.

3.3   ISA Topics

The topics used for this ISA bringing together all the different assessment are:

- Population and Socioeconomics
- Equality and Diversity
- Health
- Community Safety
- Biodiversity
- Water Environment
- Air Quality
- Noise and Vibration

- Climate Change
- Landscape/Townscape and Visual
- Cultural Heritage and Archaeology
- Soils, Geology and Contaminated Land
- Material Assets, Resources and Waste
- Natural Capital and Ecosystems Services

3.4 Consultation

Overview

Collaboration for strategy development and stakeholder engagement throughout the ISA process is essential as it provides the opportunity for each participating party to bring their expertise and views to the process.

ISA Steering Group

An ISA Steering Group has been established to assist in the development of the ISA. The Steering Group comprises local authority environmental representatives who review the approach and draft outputs throughout the development of the ISA. It will review the approach, influence future considerations and discuss any relevant queries.

The ISA Steering Group meets every 2 weeks to maintain efficient communication links and provide up-to-date feedback.

General Engagement

Prior to the Scoping Report, the early stages of developing of Transport Strategy has involved significant wider engagement, to ensure the strategy aligns with both regional ambition and local priorities, whilst contributing to national goals.

The approach to wider engagement has included the use of presentations, workshops, one-to-one meetings and an online questionnaire. Each method of engagement has proved useful in developing the strategy and has presented significant relevant feedback.

Initial engagement involved the introduction of Transport East and the developing Transport Strategy to 36 district representatives directing the relative importance of the key themes emerged (Table 3.1). One recommendation was to involve younger generations throughout the process, which was consequently actioned through a school engagement campaign.

Table 3.1 Summary of key themes identified in the Engagement Report Summary.[11]

Stage	Key Themes and Messages
Stage 1 A- Developing Non-Transport Objectives	Importance of decarbonisation and focus on electric vehicles New infrastructure must have minimal environmental impact Importance of ports and energy coast to the region's development
Stage 1B – Evidence Building	The role of the Transport Strategy in boosting and supporting the region's economy. Future transport options should be sustainable long term A shift to active travel Importance of reliable, improved public transport services Digital connectivity could compliment the transport sector, maximising assets and services. Opportunity to improve rail, while contributing to wider decarbonisation goals

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Stage	Key Themes and Messages
	Importance of working with other Sub-national transport bodies and Transport for London to improve key corridors.
Stage 1C – Exploring Future Scenarios	A baseline is crucial Identifying rural and urban areas and the key 13 urban areas within the Region
Online Public Engagement	Changes of transport use and behaviour due to COVID including preference for transport type. Reduction in people using private cars and traditional commuting transport post COVID. General consensus included long term predictions of fewer journeys, reduction in public transport and increase in active travel. Importance of reliability, convenience and frequency for public transport.
Stage 2B – Ensuring Effective Delivery	Importance of decarbonisation Engagement of young people in the consultation of the strategy

Consultation on this Scoping Report

This ISA Scoping Report will be subject to the statutory 5-week consultation under the SEA regulations. This period will provide an opportunity for consultees to raise queries and provide feedback which will then be taken into consideration during the development of the ISA for the draft Transport Strategy.

Under the SEA regulations the following are the statutory consultees that are required to be consulted:

- Environment Agency
- Historic England
- Natural England

In addition, a wider group of stakeholders have been identified as representing a range of interests nationally or within the region and are invited to comment on the ISA Scoping Report:

- County Councils/Unitary Councils within region (including planning, environmental and public health departments)
- District and Borough Councils
- Marine Management Organisation
- Suffolk Coast and Heaths AONB management unit
- Norfolk Coast Partnership AONB
- The Broads Authority
- Essex Wildlife Trust

- Norfolk Wildlife Trust
- Suffolk Wildlife Trust
- New Anglia Local Enterprise Partnership LEP
- South East LEP
- Transport Action Network
- Public Health England
- National Trust: East of England Regional Office
- Local Nature Partnership Wild Anglia

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- Friends of the Earth - county level
- CPRE
- Norfolk Rural Community Council
- Rural community council of Essex RCCE/Essex Rural Partnership ERP
- Action with Communities in rural England ACRE

- Broadland Catchment Partnership
- RSPB
- Age UK
- Neighbouring Sub-national Transport Bodies (STBs)

The ISA Scoping Report is also made available to the public to comment on through access to the following https://www.transporteast.org.uk.

Future Consultation

In addition to the consultation on this ISA scoping report, the draft Transport Strategy and ISA and the draft HRA will be subject to a full public consultation and stakeholder engagement process over a 12 week period.

3.5   Summary of the Strategy Development and ISA Process

The summary flow chart below (Figure 3.2) shows the key stages of the ISA process and HRA integrated with the strategy development.

TE Transport Strategy

Integrated Sustainability Assessment

Habitats Regulations Assessment

Initial review and Development of Methodology

- Advance engagement with stakeholders and communities Develop evidence base and identify wider outcomes
- Identify pathways for each key theme
- Scenario development and testing
- Assessment Framework

Scoping

- Identify Baseline
- Set ISA objectives
- Agree outline framework for assessment

Baseline information collection on International Sites within the study area

ISA Scoping Report and consultation

Stage 1. Screening

Identification of potential LSEs for options

Determine if the strategy is likely to have significant effect(s) (LSEs) on a European site alone or in-combination with other identified plans or projects

Input to early option sifting and assessment

Development of the draft Strategy

Application of Assessment framework with initial sifting and options assessment

Packaging and prioritisation

Scenario testing

Iterative assessment and refinement of proposed Strategy and alternatives

Assessment

Input to option sifting and assessment framework

Comparison of alternative approaches

Identification, prediction, evaluation, and mitigation of potential effects

- Identify likely effects and evaluate significance
- Consider alternative options
- Assess cumulative effects
- Identify mitigation measures and monitoring programme

Stage 2. Appropriate Assessment

Determine if the likely significant effects (LSEs) could lead to adverse effect(s) on site integrity (AESI). Where AESI are identified, propose mitigation to remove any potential adverse effects.

Draft Transport Strategy and IDP

ISA Report

Draft HRA report including stage 1 and stage 2 assessment

Consultation

Public consultation

Analysis of responses

Amendment to finalise the strategy/IDP

Adopt the strategy and IDP

Consultation

Consultation with statutory consultees and the public

Amendment to strategy or assessment if needed

Final Transport Strategy for Transport East and first **Investment Delivery Plan**

ISA Statement on how ISA influenced the strategy and how consultation comments have been taken into account

Final HRA report including stage 1 and stage 2 assessment

Future Investment Delivery plans

Monitoring Plan implementation and feedback to future IDP preparation

Figure 3.2 A summary flow chart of the strategy development and ISA process

4.   Review of Plans, Policies and Strategies

4.1   Overview

The Transport East Transport Strategy will both affect and be affected by other plans, policies and strategies (PPS), at a national, regional and local level. It is therefore necessary to review these PPS to identify key themes and issues to be considered in the ISA. This potential for interaction between relevant plans is a stated requirement of the SEA regulations, requiring information (Box 4.1)

Box 4.1. SEA regulations requirements for the Review of Plans, Programmes and Environmental Protection Objectives

> The relationship of the plan or programme with other relevant plans and programmes (Schedule 2 (1))
>
> The environmental protection objectives, established at international, or national level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation (Schedule 2 (5))

The focus for the review is the national and regional level including county and unitary PPS. A high-level review of the relevant PPS has been undertaken and is documented in Appendix B. From this review, key policy documents relevant for the Transport Strategy and ISA are briefly summarised below and the main themes influencing the approach for the ISA are provided in Table 4.1.

National Level

Key national level PPS are described below.   International treaties and commitments that are covered in the PPS review but as these are implemented through national legislation and policy, they are not considered separately.

Transport Investment Strategy[12]

The Transport Investment Strategy was published by the Department for Transport in 2017. The strategy sets out the departments' priorities and strategic approach for decisions regarding future transport investment. The strategy is a crucial part of other Government strategies and, particularly the Future of Transport Programme and industrial strategy. Building on recent progress to upgrade national road and rail networks, the strategy explains how transport investment can deliver national goals, such as a stronger, fairer Britain.

National Planning Policy Framework[13]

The National Planning Policy Framework (NPPF) sets out the Government's economic, environmental and social planning policies for England which articulates the national vision for sustainable development. The NPPF should be interpreted and applied locally to meet local aspirations. The framework replaces all existing Planning Policy Statements and Planning Policy Guidance Notes. The NPPF recognises that the purpose of the planning system is to achieve sustainable development, which can be achieved when economic, social and environmental gains are considered and achieved together.

As a result of this, the NPPF seeks to contribute to protecting and enhancing natural, built and historic environment, and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives). There are therefore economic, social and environmental objectives, with more detail provided in Appendix B.

The 25 Year Environment Plan[14]

The 25-year Environment Plan, published by DEFRA in 2018, sets out the aims and actions of the UK Government over the next 25 years. The plan compliments and builds on other national strategies such as the Industrial Strategy and Clean Growth Strategy, which all address sustainable growth for the nation.

Broadly the plan aims to deliver cleaner air and water in cities and rural landscapes, protect threatened species and provide richer wildlife habitats. (Refer to Appendix B).

Environment Bill 2020[15]

The Environment Bill was published by DEFRA in 2020 sets targets, plans and policies which aim to improve the natural environment.

The provisions include creation of an Office for Environmental Protection, introducing the application of a natural capital approach and a general duty to enhance biodiversity and requirements for development to provide 10% biodiversity net gain compared to predevelopment value. On air pollution the Bill provides for new powers to set legally binding air quality targets and powers to recall vehicles not meeting emissions standards. The Environment Bill is expected to be enacted in Autumn 2021.

Clean Air Strategy[16]

The Clean Air Strategy shows how the UK Government will tackle all sources of air pollution, making air healthier to breathe, protecting nature and boosting the economy. Published by DEFRA in 2019, the Clean Air Strategy adds to other national strategies including the Industrial Strategy, Clean Growth Strategy and the 25 Year Environment Plan. National targets to reduce greenhouse gas emissions by 2020 and 2030 have been set, with the goal of reducing harm to human health (from air pollution) by 50%. In addition to human health, improved air quality will also directly benefit flora and fauna.

Biodiversity 2020:Strategy for England's wildlife and ecosystem services[17]

Biodiversity 2020 is the strategy for England's Wildlife and Ecosystem services, published by DEFRA in 2020. The biodiversity strategy for England provides a comprehensive review of how the Government are implementing international and EU commitments. It sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea. Strategic goals focus on improving and enhancing biodiversity, as well as safeguarding

ecosystems, species, and habitats. More information on the five key strategic goals can be found in Appendix B.

Inclusive Transport Strategy[18]

The Inclusive Transport Strategy was published by the Department for Transport in 2018 and sets out the Governments plans to make the national transport system more inclusive and improve ease of travel for disabled people. Although the focus of the strategy is on inclusion of disabled people, it is likely that many improvements will benefit other transport users. Key themes within the strategy include raising awareness and enforcement of passenger rights, improving staff training and improving the physical infrastructure. More detail of the strategy can be found in Appendix B.

National Networks National Policy Statement[19]

The NPS sets out the need for, and Government's policies to deliver, development of Nationally Significant Infrastructure Projects (NSIPs) on the national road and rail networks and strategic rail freight interchanges in England. The NPS sets the policy against which the Secretary of State for Transport will make decisions on applications for development consent for NSIPs. The statement is based on existing government policy in England. The National Networks NPS supports both development of major rail infrastructure, including an expanded network of strategic rail freight interchanges, and major road improvements. The Appraisal of Sustainability for the National Networks NPS identifies that some NSIPs for these developments will have local environmental impacts.

Airports National Policy Statement[20]

This NPS supported the expansion of airport capacity in South East England through a new third runway at London Heathrow and supported other major airports in South East England (including Stansted in the TE region) making best use of their existing capacity and infrastructure. The Appraisal of Sustainability for the NPS identifies a number of potential adverse effects on local communities and the environment. The NPS was reinstated by the Supreme Court in late 2020 following the resolution of a court challenge related to the expansion of Heathrow.

Decarbonising Transport - Setting the Challenge[21]

In 2020, the UK Government published its Decarbonising Transport: Setting the Challenge report, which provided an overview and highlighted key areas for further work to help achieve net zero greenhouse gas emission targets and has committed to publish a full Transport Decarbonisation Plan later in 2021.

Bus Back Better: National Bus Strategy for England[22]

Published in March 2021, the Strategy proposes major reforms to the deregulated bus transport system outside London. It sets an ambitious timetable for bus operators and local transport authorities to agree plans to achieve the 'substantial and untapped potential of buses', through either new Enhanced Partnerships (statutory arrangements which can specify timetables and multi-operator ticketing, and allows the local transport authority to take over the role of registering bus services) or franchising. Bus operators must in future work closely with local

transport authorities and mayoral combined authorities to design coordinated, easy-to-understand bus networks. In lower-density rural areas not served by conventional buses, new forms of provision will be supported such as demand responsive transport using smaller vehicles. New zero emission buses will be funded, and a date will be set for ending the sale of new diesel buses.

The Government's statement on the historic environment for England 2010[23]

This Statement identifies six strategic aims for the UK Government with respect to cultural heritage which are focused around the strategic leadership of heritage policy, guidance and standards, ensuring protection of heritage assets, ensuring local capacity in heritage capabilities, involving the public, ensuring heritage assets in public ownership are well cared for and promoting the role of historic environment in the Government's response to climate change.

Regional Level

Regional plans and policy relates to any policy or plan set by government at a sub-national level, but above Local Authority level (this would be local policy). For the Transport East region these include (but ais not limited to):

- Integrated Transport Strategy for Norfolk and Suffolk (New Anglia Local Enterprise Partnership, 2017)
- Broadland Futures Initiative
- Economic Strategy for Norfolk and Suffolk (New Anglia Local Enterprise Partnership)
- East Inshore and East Offshore marine plans 2014
- Transport for South East Transport Strategy
- England's Economic Heartland Transport Strategy
- Mayors' London Transport Strategy
- Midlands Connect Strategy and Midlands Connect Transport Strategy Refresh

Local Level

Local Transport Plans

Local Transport Plans are developed and implemented by local transport authorities, which in the Transport East region are the three County Councils and two Unitary Authorities.

Local Transport Plans outline the Local Transport Authorities' long-term objectives for their transport networks. They can also include short-term Implementation Plans to indicate how the authority proposes to deliver the Local Transport Plan proposals, including their priority issues and schemes over the plan period. Strategic Environmental Assessments are undertaken for Local Transport Plans.

The Local Transport Plans in the TE region have been reviewed by both the PPS review (Appendix B), and the Task 1A initial review, listed below:

- The Essex Transport Strategy: The Local Transport Plan for Essex 2011 - 2025
- Norfolk County Council Local Transport Plan 2026

- Suffolk County Council Local Transport Plan 2011 - 2031

- Southend Local Transport Plan 3 2011 - 2026

- Thurrock Transport Strategy 2013 - 2026

Development Plans

The Planning and Compulsory Purchase Act 2004 requires Local Planning Authorities (LPAs) to determine applications for planning permission in accordance with the Development Plan for their area unless material considerations indicate otherwise. The Development Plan for an area will include:

- the relevant Local Plan prepared by the District or Borough Council (including Unitary Authorities);

- the relevant Minerals and Waste Plan/s prepared by the County Council (including Unitary Authority); and

- any adopted Neighbourhood Plans prepared by Parish Councils.

Local Plans set out a vision and strategic priorities for the development of their area, to address housing needs (including to identify a 5 year housing land supply in accordance with the National Planning Policy Framework) and other social, economic and environmental priorities. Local Plan allocations and policies for housing and other economic development will influence the need to travel and for transport infrastructure, and vice versa. All Development Plans are subject to SEA and are prepared in consultation with the community. The current Local Plans and Minerals and Waste Plans for the Transport East Region are listed in Appendix B.

Other local level plans

Other local level plans and strategies have been identified in the Transport East Region, related to the local economy, climate change, flood risk management, landscape, heritage, walking, cycling and rail travel, infrastructure, strategic planning, health, and rural communities. Those prepared by County and Unitary Authorities are listed in Appendix B.

4.2   Key Themes

From the review of international, national and regional PPS, relevant key themes were identified (Appendix B).

Table 4.1 Key PPS and key themes identified from review

ISA Topic	Key PPS	Key Themes	Draft ISA Objectives
Population and Socioeconomics	Road Investment Strategy 2 (RIS2) National Planning Policy Framework Clean Growth Strategy Economic Strategy for Norfolk and Suffolk	Housing requirements Improve transport networks and access to employment sites	Protect and enhance accessibility to economic, employment and community facilities

ISA Topic	Key PPS	Key Themes	Draft ISA Objectives
	Local Industrial Strategy Economic plan for Essex The organisational strategy (2017 – 2021) and plan (2021) The Essex Transport Strategy: The Local Transport Plan Norfolk Delivery Plan Together for Norfolk Suffolk County Council Local Transport Plan Suffolk Framework for Inclusive Growth Bus Back Better: National Bus Strategy for England Southend Local Transport Plan Thurrock Local transport Plan	Support local business and economies Prosperity – Support Economic growth Schemes must achieve social benefits Aims to maximise social and economic benefits Sustainable recovery post-covid Connectivity of population to facilities and resources/international gateways	
Equality and Diversity	Inclusive Transport Strategy The Future of Essex Essex Joint Health and Wellbeing Strategy Together for Norfolk Suffolk County Council Business Plan Suffolk County Council, Safety, Health and Wellbeing Strategy Suffolk Framework for Inclusive Growth	Inclusive Growth Promote equality Create inclusive communities Improving access to transport networks to ensure full inclusiveness	Support and promote improved access for all
Health	Clean Air Strategy The Future of Essex The organisational strategy (2017 – 2021) and plan (2021) The Essex Transport Strategy: The Local Transport Plan Essex Joint Health and Wellbeing Strategy Norfolk County Council Public Health Strategy Suffolk County Council, Safety, Health and Wellbeing Strategy Suffolk Framework for Inclusive Growth	Planning policies should aim to achieve healthy, inclusive safe places Improving access to health services Reduce health inequalities Promote healthy lifestyles	Protect and enhance quality of life in relation to transport Protect and enhance health and well being

ISA Topic	Key PPS	Key Themes	Draft ISA Objectives
	Suffolk Road Safety Strategy		
Community Safety	Road Investment Strategy 2 (RIS2) The Future of Essex The organizational strategy (2017 – 2021) and plan (2021) Essex Flood Risk Management Strategy Norfolk Transport Asset Management Plan Suffolk Framework for Inclusive Growth Suffolk Flood Risk Management Strategy Bus Back Better: National Bus Strategy for England	Improve road safety Safe Technology Improve quality and reduce negative impacts of existing strategic networks Create safe communities	Support and promote community safety
Biodiversity	Environmental Bill 2020 25 Year Environmental Plan UK Post-2010 Biodiversity Framework Biodiversity 2020: Strategy for England's wildlife and ecosystem services Green Essex Strategy	Conserve and Enhance, particularly designated sites Restoration of natural habitats Net Gain opportunity Contribute to local biodiversity action plans	Protect and enhance biodiversity Protect and enhance International and European (HRA) sites
Water Environment	National Planning Policy Framework National Flood and Coastal Erosion Risk Management Strategy (FCERM) Future Water: Water Strategy for England East Inshore and East Offshore marine plans Anglian Water Plan Essex Flood Risk Management Strategy Norfolk Local Flood Risk Management Strategy Suffolk Flood Risk Management Strategy Broadlands Futures Initiative	Improve and maintain good water quality Minimise the risk and impacts of flooding Adapt plans to account for the impacts of climate change	Protect and enhance water resources and water quality and contribute to reduction in flood risk and disruption from flood events

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ISA Topic	Key PPS	Key Themes	Draft ISA Objectives
Air Quality	National Planning Policy Framework (NPPF) The 25 Year Environment Plan Clean Air Strategy	Reduction of polluting emissions Improve Air Quality	Contribute to the mitigation of air pollution issues from transport and optimize potential for reduction in air pollution
Noise and Vibration	National Planning Policy Framework Noise Policy Statement for England Draft Road Investment Strategy	Avoid noise disturbance Promote good health and quality of life through effective management of noise	Contribute to mitigation of traffic noise and optimize potential for reducing noise/vibration
Climatic Factors	Clean Growth Strategy National Planning Policy Framework Decarbonising Transport - Setting the Challenge 25 Year Environment Plan Norfolk Climate Change Strategy Suffolk County Council Business Plan Suffolk Climate Emergency Plan Suffolk Framework for Inclusive Growth	Reduction in GHG emissions Mitigating and adapting to climate change Utilise renewable energy Net Zero aims Decarbonisation of transport	Minimise contributions to climate change (including greenhouse gas emissions) from construction of new/upgraded transport infrastructure or operation of existing and new transport networks, modal changes or new technologies. Improve resilience to climate change for the transport network and promote environmental resilience to climate change.
Landscape/Townscape and Visual	Norfolk Access Improvement Plan 25 Year Environmental Plan National Planning Policy Framework (NPPF)	Conserve and enhance landscape and scenic beauty Protect landscape and townscape character	Protect and enhance the character and diversity of the landscape/townscape and minimise adverse visual effects on sensitive, designated landscapes and public views
Cultural Heritage and Archaeology	National Planning Policy Framework 25 Year Environmental Plan Government's statement on the Historic Environment	conservation and enhancement of designated and non-designated heritage features maintain local distinctiveness	Protect cultural heritage and archaeological assets and contribute to improvement for access to cultural heritage sites
Soils, Geology and Contaminated Land	National Planning Policy Framework The 25 Year Environment Plan	Protect sites of geological value and soils	Avoid conflicts with geological sites of value. Minimise loss of soil resources and contribute towards the appropriate

ISA Topic	Key PPS	Key Themes	Draft ISA Objectives
		Sustainable use of minerals Reduce landfill disposal Maintain environmental standards	management of soil resources and quality.
Material Assets and Resources	Transport Investment Strategy National Planning Policy Framework Airports National Policy Statement National Networks National Policy Statement Economic Strategy for Norfolk and Suffolk Local Industrial Strategy East of England Route Strategy The organisational strategy (2017 – 2021) and plan (2021) Green Essex Strategy Norfolk Transport Asset Management Plan Suffolk Rail Prospectus Decarbonising Transport - Setting the Challenge	Sustainable development	Promote the sustainable use of natural resources including land, encourage reuse, recycling and waste minimization and effective use of existing infrastructure.
Natural Capital and Ecosystem Services	25 Year Environmental Plan Environment Bill 2020 Biodiversity 2020: Strategy for England's wildlife and ecosystem services The Natural Capital Evidence Compendium for Norfolk and Suffolk Green Essex Strategy	Minimise resource footprint Work towards sustainable land management Support carbon sequestration initiatives Work to increase species richness, abundance, and ecological resilience Improve biosecurity Develop plans in preparation for increasing likelihood of extreme climate events	Protect natural capital and associated ecosystem services, whilst seeking to provide opportunities for enhancement

ISA Topic	Key PPS	Key Themes	Draft ISA Objectives
		Protect and enhance designated sites and habitats	
		Increase use and inclusivity of natural assets across all user groups	

5. Baseline Constraints and Opportunities

5.1 Introduction

This chapter set out the study baseline against which changes due to the Transport Strategy proposals can be assessed. It considers current conditions, existing pressures and future trends and how the baseline is likely to develop without the influence of the proposals in the Transport Strategy. Potential issues and opportunities relevant to the assessment of the Strategy are also identified.

The study area for the baseline includes the Transport East region and bordering and connected areas where there are potential pathways for impacts such as, for example, within river catchment areas and the key transport corridors between neighbouring regions.

Information used to establish the baseline is based on publicly available data sources.

Section 5.16 identifies potential inter-relationships between ISA topics, needing further consideration.

5.2 Population

Transport East's area covers a total area of 12,849 sq km, and comprises five Local Transport Authorities: Norfolk, Essex, Suffolk, Southend-on-Sea, and Thurrock. In 2019 the population of this area was approximately 3.5 million[24]. The population of each local authority area and the population density are presented in Table 5.1.

Table 5.1 Population of each constituent area in the Transport East Area

Constituent Areas	Population[25] (rounded)	Population Density (per sq km)[26]
Norfolk	907,800	169
Essex	1,489,200	431
Suffolk	761,400	200
Southend-on-Sea	183,100	4,294
Thurrock	174,300	1,064
Transport East Area Total	3,515,800	273
England	56,343,100	432

Essex has the largest population with just under 1.5 million and is approximately 43% of the Transport East population. Thurrock and Southend-on-Sea are much smaller in geographical size and therefore have a significantly smaller population compared to Norfolk, Essex, and Suffolk. Of the constituent areas, the Unitary Authority of Southend-on-Sea has the highest population density of 4,294 people sq. km, this is significantly larger than the other counties. Norfolk and Suffolk have the lowest population density at 169 per sq km and 200 per sq km respectively. These are lower than the Transport East (273 per sq km) and England national average (432 per sq km).

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5.3   Socio - economics

Multiple deprivation (intra-regional comparison)

When a cross reference to all the Index of Multiple Deprivation (IMD) Metrics is compared across the Transport East Region, there are some stark differences between Coastal areas and Rural areas (see Figure 5.1) with shows the overall IMD score for the region. The general pattern shows that the least deprived areas are more clustered towards urban centres and most deprived areas are dispersed along the coast and clustered in parts of north west Norfolk and east Essex.

There is a difference between the levels of deprivation between the types of settlement across the deprivation domains, with coastal communities to be below England's average, and in the bottom 20% or 40% respectively Within many coastal communities, there are relatively affluent neighbourhoods adjacent to some of the most deprived neighbourhoods despite similar access to key services by walking and public transport.
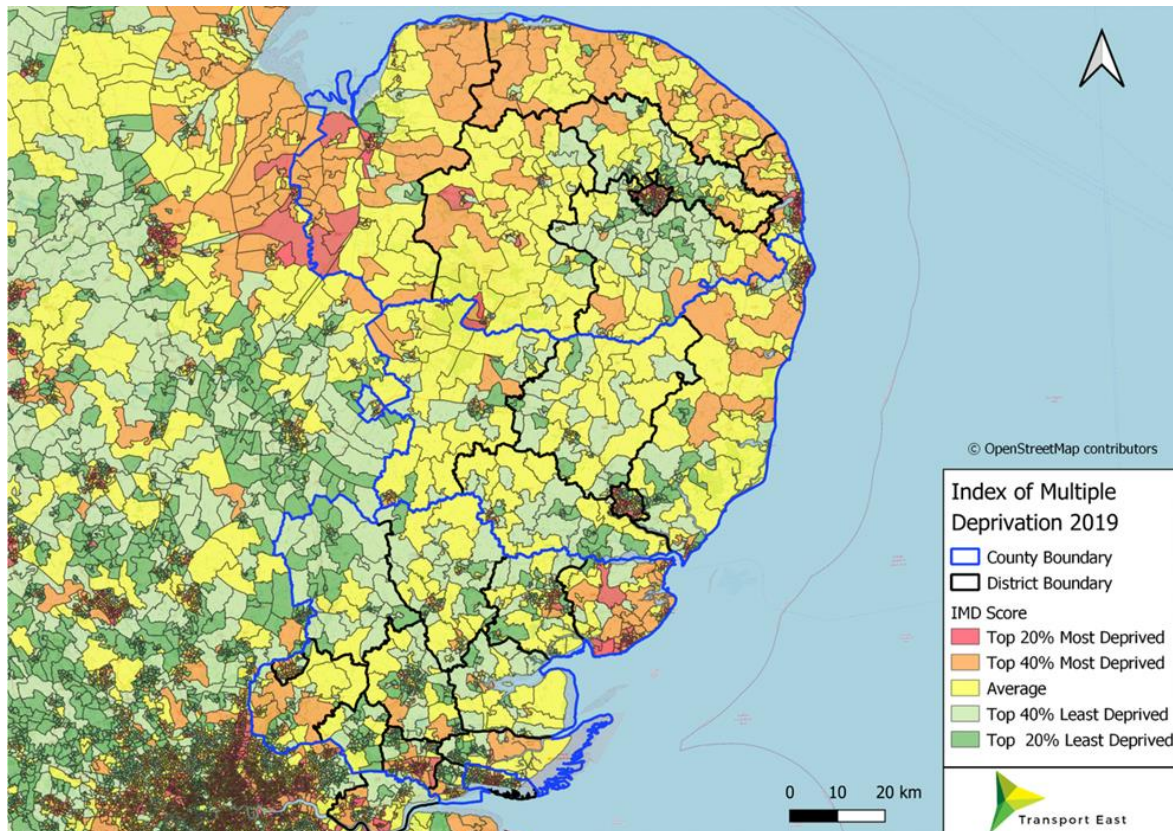
Figure 5.1 IMD scores for the Transport East Region (Source: MHCLG)

Deprivation is also often correlated quite closely with car/van ownership in most cases, suggesting that there is a need to decouple individual and community prosperity from car ownership. Those living in the least deprived areas of these communities are more likely to have a car or van, this is either likely because they are living in more affluent areas and therefore can afford a car, or the car is necessary in order to reach employment elsewhere.

According to the 2011 census, approximately 700.000 people in the Transport East region live in coastal areas accounting for about 21% of the population. All Coastal Districts have over the UK average of 18% of over 65s with the exception of Southend-on-Sea and Thurrock with 17.8% and 12.7% respectively.

The Coastal Districts of North Norfolk and Tendring have the highest proportion of their population that are over 65 years old with 29% and 27% respectively. Coastal areas in the Region tend to have higher levels of deprivation compared to the national average across all metrics. The region's coastal resorts are reliant on seasonal tourism, with other job opportunities more limited.

According to the 2011 census, 33% of the Transport East Region live in rural areas, which is considerably higher than the national average of 18.5%. This varies considerably within the Region with Norfolk and Suffolk more rural (50% and 40% of their populations living in rural areas respectively) than Essex (26%) and Thurrock (13%), with no rural population in Southend-on-Sea.

Within rural areas 22% of the population is over 65 years old, and 58% are between 18-65. Rural areas tend to have higher levels of car ownership due to limited access to public transport and unwalkable journey times to key services. Many areas suffer with retention issues for young graduates who are more attracted to more skilled, better paid jobs in urban areas.

Education

Qualification data from the Census 2011 is presented in Table 5.2. The constituent areas with the largest percent of no qualifications was Thurrock, closely followed by Norfolk. The proportion of people with level 1 to level 4 qualifications is broadly the same across the constituent areas. Norfolk and Suffolk had the largest proportion of apprenticeships (both 4.2%).

Table 5.2 Qualification levels across the Transport East population, 2011 (%)

Constituent Areas	No qualifications	Level 1 – 1-4 GCSEs	Level 2 – 5 or more GCSEs	Level 3 – 2 or more A levels	Level 4 - degree, professional qualification	Apprenticeships	Other qualifications
Norfolk	26.3%	14.3%	16.2%	11.8%	21.9%	4.2%	5.3%
Essex	23.9%	16.1%	17.2%	11.6%	23.0%	3.8%	4.5%
Suffolk	24.3%	14.4%	16.5%	11.6%	23.5%	4.2%	5.5%
Southend-on-Sea	24.6%	16.4%	17.5%	11.4%	21.8%	3.0%	5.3%
Thurrock	26.5%	18.1%	17.5%	10.9%	17.4%	3.4%	6.1%

Some 48.9% of residents in the Transport East region are married or in same-sex civil partnerships, with 51.4% residents in Norfolk having the highest percentage of married couples. This overall percentage of marriages across Transport East region are seen to be slightly higher than the national at 46.8%[27].

Employment and the Local Economy

In 2019, the employment rate across the Transport East area was 77.6%, similar across all authorities and is higher than the average for England (76%)[28]. Thurrock has the greatest proportion of unemployment across the counties with 5.5%, followed by Norfolk with 4.1%. The unemployment rate across the Transport Area is 3.8%, higher than the average for the region (3.3%) but slightly less than the national average (4%). Employment is highest in the motor trades, wholesale and retail industry sectors for Norfolk (16.2%, Essex (16.4%), Suffolk (15.2%) and Thurrock (25.7%). The health sector provides the largest proportion of employment in Southend-on-Sea with 17.2%[29]. Table 5.3 shows the industry breakdown of employment across the Transport East area...

Table 5.3 Industry Breakdown of employment across the constituent areas, 2019[30]

Industry Sector	Norfolk	Essex	Suffolk	Southend-on-Sea	Thurrock
Agriculture, forestry and fishing	2.2%	0.8%	1.5%	0.2%	0.2%
Mining, quarrying & utilities	1.2%	1.0%	1.4%	0.3%	1.5%
Manufacturing	9.2%	6.8%	9.5%	6.2%	4.5%
Construction	5.4%	7.8%	5.5%	4.7%	7.6%
Motor trades, wholesale, retail	16.2%	16.4%	15.2%	14.1%	25.7%
Transport and storage	3.2%	5.1%	6.1%	2.3%	16.7%
Accommodation and food	8.4%	6.9%	7.3%	9.4%	6.8%
Information & communication	1.9%	3.4%	3.0%	2.3%	1.5%
Financial & insurance	3.5%	2.9%	2.7%	2.7%	0.9%
Property	1.6%	1.9%	1.4%	2.0%	1.2%
Professional, scientific & technical	6.2%	8.8%	6.1%	9.4%	3.8%

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Industry Sector	Norfolk	Essex	Suffolk	Southend-on-Sea	Thurrock
Business admin & support services	6.8%	8.1%	11.3%	7.8%	7.6%
Public admin & defense	4.9%	3.1%	4.0%	5.5%	3.4%
Education	9.2%	9.2%	8.2%	10.9%	9.1%
Health	15.4%	13.2%	11.9%	17.2%	7.6%
Arts. Entertainment, recreation & other services	4.6%	4.6%	4.9%	5.5%	3.0%

Gross value added (GVA) is the value generated from the production of goods and services. GVA per head on average across the Transport East area is £23,431. GVA per head is greatest in Essex (£22,017) followed by Norfolk[31] (£21,343). The GVA for the Transport East Region is much less than the national for England which was £27,949 in 2017[32].

The industry sector which contributes the most to GVA across Suffolk and Thurrock is distribution, transport, accommodation, and food contributing 20% and 39% of GVA, respectively. In Norwich and Southend-on-Sea, the greatest contribution to GVA is from the public administration, education and health sectors, contributing 21% and 24% to GVA, respectively. In Essex, real estate activity contributes the largest proportion to GVA, approximately 15%[33].

Between October-December 2013 and October-December 2020, the number of disabled people in employment across the UK increased by 1.41 million, an increase of 47%[34]. There were 3.5 million disabled people in work in 2017, with the Government aiming to increase this to 4.5 million by 2027.

Business Health

The business health indicator was obtained using data from the ONS on 2019 Business Demography startups and closures. All areas had a growth in business health with more business startups than closures in 2019[35]. In 2019, Essex had the largest growth with 1,495 businesses, compared to Southend-on-Sea which had the smallest growth with only 60 businesses. Thurrock saw a growth of 430 businesses, while Norfolk and Suffolk saw a growth of 255 and 370, respectively[36].

Tourism

Within the Transport East Region Norfolk has three of the top 10 paid attractions in the East of England, (Norwich Castle, Banham Zoo and National Trust's Blickling Estate) with over 650,000 visitors in 2019. Essex has two attractions in the top 20 paid attractions in the East of England (RHS Garden Hyde Hall and Audley End House and Gardens) with over 535,000 visitors in 2019. Suffolk had one attraction in the top 20 paid attractions in the region (Suffolk Zoo) with over 100,000 visitors in 201937.

In addition to tourism attractions, large recreational areas have become tourism hotspots. For example, there are nearly 200 nature reserves across the Transport East Region, including the Suffolk Wildlife Trust, North Cove Nature Reserve and Suffolk Coast and Heaths AONB.

5.4   Equality and Diversity

A social has been compiled using public Census data from 2011 and supplemented with more recent information where available.

Data from the Office for National Statistics (ONS) has also been gathered on the following protected characteristics from Section 4 of the Equality Act 2010:

- Age
- Sex and Gender
- Race
- Disability

- Marriage and Civil Partnership
- Pregnancy and maternity
- Religion or belief; and
- Sexual Orientation

Equality and diversity element strongly tie in with the concept of 'levelling up' introduced by the UK government in 2020. From previous assessments on the Index of Multiple Deprivation, it was observed that multiple disparities existed amongst the intra-regional areas within Transport East's area of influence. Of these, the biggest difference groups were observed to be the communities living in the rural areas and the coastal areas which are further described in the subsequent sections. Levelling up will contribute to addressing the needs of individual rural or coastal communities as each have different issues and challenges.

Age

Table 5.4 presents the split of the population across the different age ranges: Under 19s, 19 to 44 years old, 45 to 69 years old and the Over 70s. In 2019, Thurrock has a much younger population in comparison to the other areas, with the greatest proportion of under 19s (27%) and 19 to 44 year old's (35%). Thurrock also has a much smaller proportion of over 70s with 10%, compared with Norfolk and Suffolk who have 18% and 17% respectively. Accessibility to health care facilities is especially important for the older population.

Table 5.4 Age structure of the Transport East population, 2019 (%)[38]

Constituent Areas	Under 19	19-44	45-69	Over 70s
Norfolk	20%	29%	33%	18%
Essex	22%	31%	32%	15%
Suffolk	21%	28%	33%	17%
Southend-on-Sea	23%	31%	31%	14%

Constituent Areas	Under 19	19-44	45-69	Over 70s
Thurrock	27%	35%	28%	10%

Gender

Within the Transport East Region, approximately 49.1% of population are male and 50.9% female, which is comparable with the national male and female percentage of 49.2% and 50.8% respectively[39]. Despite the near even split of gender of the population, the gross weekly pay (full time workers) difference between men and women are seen to be highest in Suffolk (£100.8) whilst the lowest difference is seen in Southend-on-Sea which has a difference (£45.7) lower than the national average (£78.6).

Similarly, the overall hourly pay (excluding overtime) is seen to be higher among men across the Region, with the exception of Southend-on-Sea. The hourly pay difference between gender is seen to be the highest in Suffolk (£1.42) and higher than the average national difference (£1.22)[40].

Ethnicity

Ethnicity Table 5.5 shows the split of the population across different ethnic groups. The largest proportion of the Transport East population stated they were white British (89.9%), this proportion was largest in Norfolk (90.8%). This proportion was much higher than the national average (78.7%). The second highest ethnicity across the Transport East area was all other white (4.4%), followed by Asian/ Asian British (2.5%).

Table 5.5 Ethnicity across the Transport East constituent Areas, 2016[41]

Constituent Areas	White British	All Other White	Mixed / Multiple ethnic groups	Asian / Asian British	Black/ African / Caribbean / Black British	Other ethnic group
Norfolk	90.1%	5.6%	0.6%	2.1%	0.8%	0.8%
Essex	89.8%	3.4%	1.4%	2.6%	1.8%	1.0%
Suffolk	88.9%	5.6%	1.5%	1.9%	1.3%	0.8%
Southend-on-Sea	86.7%	5.0%	1.7%	2.8%	2.2%	1.7%
Thurrock	77.2%	6.6%	1.8%	3.0%	9.0%	2.4%
Transport East	89.9%	4.4%	1.5%	2.5%	1.9%	1.1%
England	78.7%	6.2%	1.8%	8.0%	3.5%	1.9%

Data from the latest Annual Population Survey (Jan –Dec 2019) shows that BAME women currently make up 16% of the female working age population of England and Wales. White women make up the remaining 84%. BAME men currently make up 15% of the male working age population[42].

Disability

Table 5.6 shows the proportion of the population whose day to day activities are limited by a long-term health problem or disability. The proportion of people with significant disabilities that affect their day today across the Transport East Region (8.1%) is line with the England average (8.3%) while Norfolk has the highest proportion of people with long term health problems or disabilities at 20.1% compared to the 17.6% England average.

Table 5.6 Proportion of the population whose day to day activities are limited by a long-term health problem or disability across the Transport East constituent Areas, 2011[43]

Constituent Areas	Day-to-day activities limited a lot	Day-to-day activities limited a little	Day-to-day activities not limited
Norfolk	9.1%	11%	79.9%
Essex	7.7%	9.4%	82.9%
Suffolk	7.9%	10.1%	82.1%
Southend-on-Sea	8.8%	9.7%	81.5%
Thurrock	7.2%	8.3%	84.4%
Transport East	8.1%	9.7%	82.2%
England	8.3%	9.3%	82.4%

Religion

Table 5.7 shows the breakdown of religious groups across the Transport East area.

Table 5.7 Religion across the Transport East constituent Areas, 2016[44]

Constituent Areas	Christian	Buddhist	Hindu	Jewish	Muslim	Sikh	Other	None/ not stated
Norfolk	60.0%	0.5%	0.3%	0.3%	0.9%	*	1.6%	36.4%
Essex	58.3%	0.3%	0.8%	0.3%	1.3%	0.1%	1.4%	37.5%
Suffolk	62.8%	0.5%	0.3%	0.1%	0.9%	0.0%	1.65	33.7%

Southend-on-Sea	56.7%	0.6%	1.1%	1.7%	0.6%	0.0%	2.2%	37.2%
Thurrock	61.4%	0.6%	1.2%	*	2.4%	0.6%	1.8%	31.9%
England	56.6%	0.5%	1.7%	0.5%	5.6%	0.7%	1.5%	32.8%

* Data not available

Sexual orientation

Recent data on sexual orientation is limited, data from 2015, presented in Table 5.8 shows that the majority of the population across the constituent areas in Transport East identified as heterosexual/straight[1].

Table 5.8 Sexual Orientation for the constituent areas, 2013 to 2015 (%)[1]

Constituent Areas	Heterosexual or straight	Gay or lesbian	Bisexual	Other	Don't know or refuse to say
Norfolk	94.8%	0.5%	0.6%	0.3%	0.8%
Essex	96.7%	0.4%	0.2%	0.2%	0.6%
Suffolk	n/a	n/a	n/a	n/a	n/a
Southend-on-Sea	95.2%	0.6%	0.4%	0.45	1.1%
Thurrock	96.4%	0.6%	0.4%	0.3%	0.9%

Pregnancy and maternity

Table 5.9 shows that the conception rate varied across the constituent area for women aged 15 to 44. Thurrock had the highest rate with 91% while Norfolk had over 20% fewer with 69.2% in 2018. Essex, Suffolk and Southend-on-Sea where all broadly in line with the conception rate for England as a whole. Southend-on-Sea had a larger percent of Under 16 pregnancies with 5.2%, Thurrock had the least with 1.9%.

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[1] Sample sizes less than 3 in at least one or more of the categories means that we cannot publish estimates for 4 of the 35 English Counties: Buckinghamshire, Cumbria, Lincolnshire and Suffolk.

Table 5.9 Conceptions across the constituent areas, 2018[45]

Constituent Areas	All conceptions (rounded)	Conception rate per 1,000 women aged 15 to 44	Conceptions Under 16	Conception rate per 1,000 women aged 13 to 15
Norfolk	10,400	69.2%	38	2.9%
Essex	20,300	78.2%	47	2.0%
Suffolk	8,900	72.6%	26	2.1%
Southend-on-Sea	2,600	78.9%	12	5.2%
Thurrock	3,200	91.0%	6	1.9%
England	800,200	75.7%	2,266	2.5%

Accessibility

Figure 5.2 shows the dominance of dispersed rural villages and rural towns with the 'urban city and town' close to, Norwich, Ipswich and Colchester. Thurrock, and Southend-on-Sea are

closer to London and there is therefore a greater concentration of areas classed as 'urban city and towns' compared to the rest of the Region.
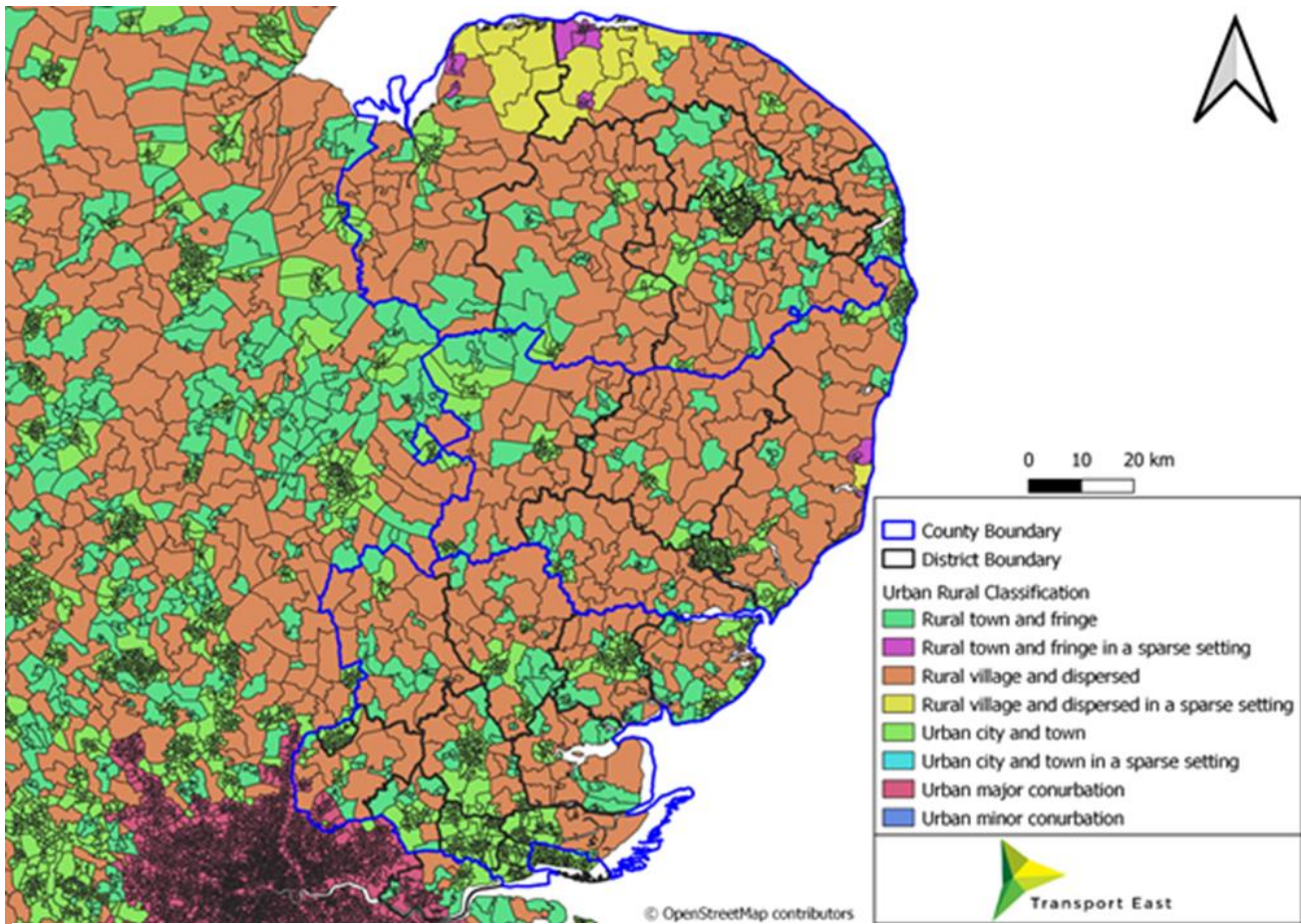
Figure 5.2 Urban / Rural area classification across the Transport East area

The characteristics of urban/rural geography of the Transport East region is shown in the Figure 5.2[46]. The focus of journey time calculations analysis has been on public transport / walking across these different urban/rural areas, to provide an understanding of accessibility that is available for the vast majority of potential users. There may be pockets of relative inaccessibility by walk/public transport, where cycling provides good access to services or transport hubs, but as often is the case, in these locations there is likely to be high car dependency.

Figure 5.3[47] shows the time taken to reach a town centre by walking and public transport, from 0 to 120 minutes. It shows that only a minority of coastal and rural communities have good access to town centres by walking and public transport. Across the Transport East Region, only 48% of the rural population can access a town centre in 30 minutes. This figure with 36% of rural Norfolk and 71% for rural Suffolk. Compared to an England average of 53%, accessibility to town centres from rural areas are low. Only 48% of residents over 65 are within 30 minutes of a town centre while only 50% of those aged between 14 and 19.
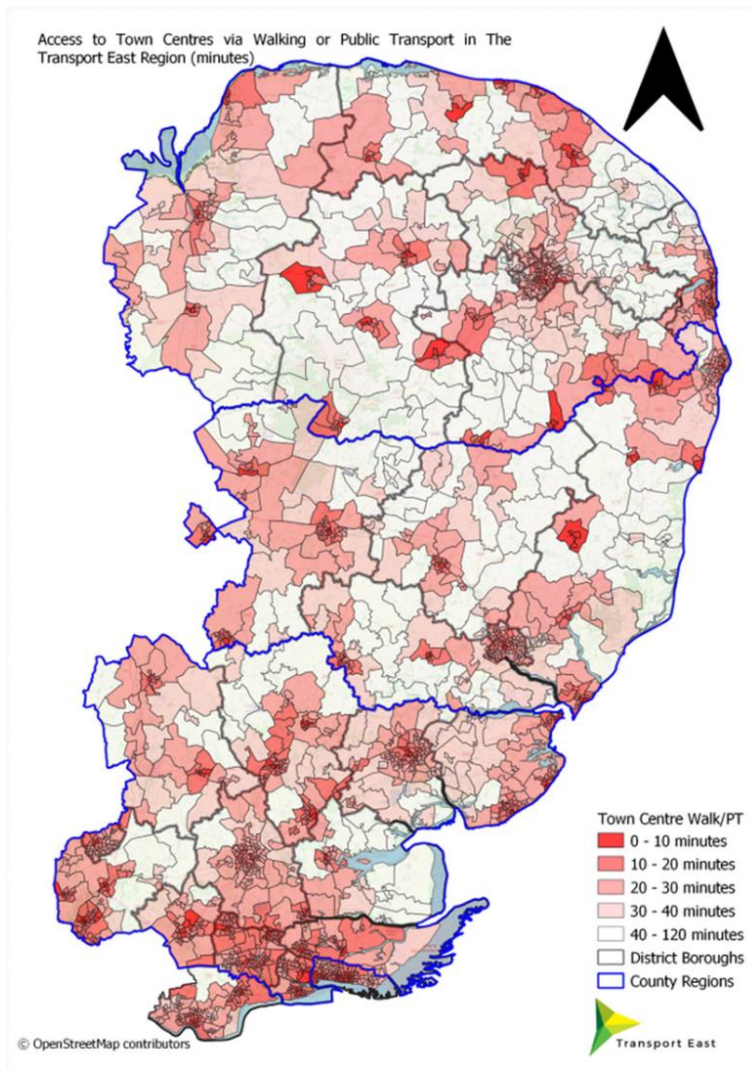
Figure 5.3 Journey times to town centres

Rural areas and those who live in urban areas are more likely to not have a car in their household (see Table 5.10). Just over 43% of the households have access to one car or van, in line with the national average (42.2%).

Table 5.10 Car / van availability for households across the Transport East Area

Constituent Areas	No car / van	1 car / van	2 car / van	3 car / van	4 or more car / van
Norfolk	18.8%	44.8%	27.4%	6.4%	2.5%
Essex	18.0%	42.1%	29.6%	7.4%	3.0%
Suffolk	17.9%	43.5%	29.2%	6.8%	2.6%

Constituent Areas	No car / van	1 car / van	2 car / van	3 car / van	4 or more car / van
Southend-on-Sea	27.3%	44.5%	22.2%	4.6%	1.4%
Thurrock	20.1%	43.9%	27.3%	6.45	2.3%
Transport East	18.8%	43.3%	28.4%	6.8%	2.6%
England	25.8%	42.2%	24.7%	5.5%	1.9%

Coastal areas are generally seen to have a higher rate of households with no car or van even if the coastal community is also rural.

Inaccessibility and loneliness, especially those residents living in households aged over 65 and those aged 16-24 years is a health consideration, however this challenge does not appear to exist beyond pockets in Norfolk's rural towns and some coastal communities according to the ONS dataset[48]. Loneliness appears to be more prevalent in more urban areas often with a correlation with the Index of Multiple Deprivation, especially in Tendring, Kings Lynn and West Norfolk, and Castle Point.

ONS data published in 2020 looked at coronavirus and loneliness and described a phenomenon of "lockdown loneliness". Collecting more than 5,000 individual responses during the UK's initial lockdown period (April 3–May 3, 2020), the survey found that the lockdown affected everyone asked, with 31% reported that their well-being had been impacted by loneliness. There was no link between lockdown loneliness and objective indicators such as having a health condition or disability.

Although the ONS survey included adults only, similar findings have been reported in young people. Place2Be, a UK-based organisation that provides mental health services in primary and secondary schools, found in a recent survey of over 200 frontline mental health professionals that loneliness and isolation was the most common topic discussed by young people, parents and carers during the lockdown.

Accessibility to recreational areas can encourage physical activity and provide access to nature having a beneficial effect on wellbeing, through increased opportunity for physical activity, social interaction and relaxation[49]. Socially deprived communities are likely to benefit the most from the health benefits of natural environments, through reductions in stress, mortality and morbidity. Moreover, access to green space promotes community cohesion, reducing social isolation for minority groups and the elderly[50]. Across the 2019/2020 period 65% of the Transport East adult population were physically active, slightly less than the 66.4% for England[51]. Of adults aged 18 and above, over 62% were classified as overweight or obese, this was greatest in Thurrock (69.4%) and lowest in Norfolk (62.7%). The Transport East Region has a greater proportion of overweight or obese adults than the national average (62.8%)[52].

Key Trends

Population growth 2030 and 2040 (see Table 5.11) will see the Counties populations increasing by over 10%. Thurrock has the largest expected growth of 11% in 2030 and 21% in 2040. This increase in population will place greater demand on the transport infrastructure and network.

Table 5.11 Population Projections 2030 and 2040

Constituent Areas	2019 (rounded)	2030[53]	% Increase from 2019	2040[54]	% Increase from 2019
Norfolk	907,800	974,300	7%	1,017,668	12%
Essex	1,489,200	1,580,618	6%	1,647,398	11%
Suffolk	761,400	794,838	4%	819,172	7%
Southend-on-Sea	183,100	195,024	6%	203,587	11%
Thurrock	174,300	191,662	10%	202,327	16%
England	56,343,100	59,181,798	5%	61,157,868	9%

Data has also shown that ethnic diversity in the population make up across the Transport East Region is projected to increase between 20 to 40% and some areas increasing by 50 to 60%[55].

Parts of the coastal communities such as North Norfolk and the former Suffolk Coastal District are projected to have over 37% of their residents over 65 by 2043[56][57], potentially contributing to an increase in loneliness.

Table 5.12 Population Projections by state pension age and working 2030 and 2040[56][57]

Indicator	Norfolk	Essex	Suffolk	Southend-on-Sea	Thurrock	TE area total	England total
State Pension 2019	218,553	301,301	175,905	34,840	23,530	754,129	10,127,000
Working age 2019	538,206	905,212	448,855	112,849	110,524	2,115,646	35,393,000
State Pension Age 2030	240,920	324,374	196,600	37,618	24,950	824,462	11,211,000
% Increase from 2019	11%	9%	13%	10%	8%	9%	11%
Working Age 2030	582,383	972,378	468,940	122,399	125,073	2,271,173	37,529,000
% Increase from 2019	7%	6%	3%	7%	11%	7%	6%
State Pension Age 2040	282,504	376,518	230,975	44,933	30,339	965,269	13,209,000

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Indicator	Norfolk	Essex	Suffolk	Southend-on-Sea	Thurrock	TE area total	England total
% Increase from 2019	31%	27%	33%	31%	32%	28%	30%
Working Age 2040	581,414	983,716	459,634	123,528	130,121	2,278,413	37,481,000
% Increase from 2019	6%	7%	1%	8%	16%	8%	6%

Table 5.12 shows population projection by state pension age and working age across the Transport East constituent areas for 2030 and 2040. Thurrock is the area with the highest increase from 2019 of working age population by 2030 and 2040, 11% and 16% respectively. In comparison, Suffolk is the area with the lowest increase from 2019 of working age population with only 3% for 2030 and 1% for 2040. Similarly, Suffolk is the area that is estimated to experience the highest increase of state age pension population by 2040 (33%). This is in line with the other areas within Transport East, whose state age population is predicted to increase an average of 30%.

Issues and Opportunities

Key issues and opportunities around population, equalities, and socioeconomics are:

- Population growth across all age groups will place pressure on the transport network, housing availability, amenities, education and health facilities.

- The transport network should aim to support and improve access to services and facilities for vulnerable groups including the elderly population, disabled, women, families with young children, and single parent families.

- There are opportunities to improve access to rural areas through transport services, digital services and bring services to people.

- COVID-19 has changed work habits increasing the number of people seeking to live outside the city centre, as the need to access workplaces is reduced. This may reduce daily commutes but will place different demand on transport services as more people travel into urban centres for leisure and social interaction

- COVID-19 is expected to increase staycations in the short term therefore transport infrastructure needs to be able to accommodate increased demand to coastal hotspots – an influx of tourists can create parking issues, congestion, environmental impacts e.g. litter

- Transport is a facilitator that allows efficient business and is essential for modern living. Sustainable transport interventions can support inclusive growth for communities which further helps social cohesion, access to employment and access to vital services.

- By helping disabled people into work, enables people to reach their potential and economic independence. Employers will also enjoy the advantages of a diverse workplace, the talents of disabled people and the potential for greater productivity[58.]

5.5   Health

The World Health Organization (WHO) constitution defines health as '*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*'[59]. Health is determined by a complex interaction between individual characteristics, lifestyle and the physical, social and economic environment. Most public health experts agree that these 'wider determinants of health' have a greater influence than formal healthcare for ensuring a healthy population. Figure 5.4[60] provides a conceptual illustration of wider determinants of health in our natural and built environment.

A related issue, of key importance to public health, is the issue of health inequalities. The Marmot Review into health inequalities[61] looked at differences in health and wellbeing between social groups and described how the social gradient on health inequalities is reflected in the social gradient on educational attainment, employment, income, quality of neighbourhood and other issues. Understanding the wider determinants of health is seen as an important means of tackling health inequalities and improving population health.
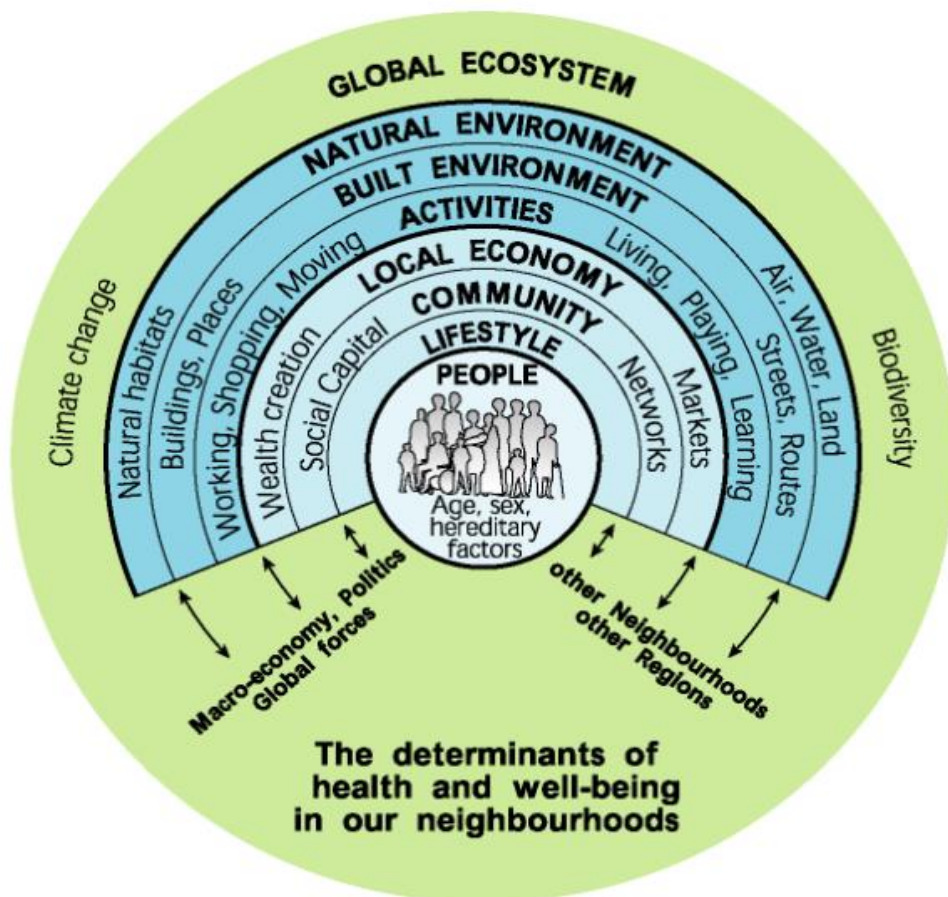
Figure 5.4 Determinants of health and wellbeing in our neighbourhoods

Transport can have both positive and negative effects on health, and these effects can be distributed unequally across populations. Figure 5.5 illustrates potential pathways between transport policy and physical and mental health (including health inequalities). Physical and mental health are strongly interconnected, with physical health problems significantly increasing the risk of poor mental health and vice versa.

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Health inequalities

➢ Affordability barriers for low income households, older people and rural households[72]
➢ Accessibility barriers for disabled people[72]
➢ People living in deprived areas of England less likely to have good access to greenspace or undertake regular physical activity[80 81]

Health inequalities

➢ Disabled people and children in deprived areas more likely to be injured in a road traffic collision[82 83]
➢ Women, BAME individuals and younger people more likely to suffer adverse mental health impacts[65 84]

Access to facilities, services, education, employment and green and blue space

▪ Mental health and wellbeing (employment opportunities, access to green and blue space)[72]
▪ Physical health (access to medical facilities, opportunities for recreational physical activity)[72]

Physical activity levels

▪ Several types of cancer[73]
▪ Cardiovascular disease[74]
▪ Mental health and wellbeing[75 76]
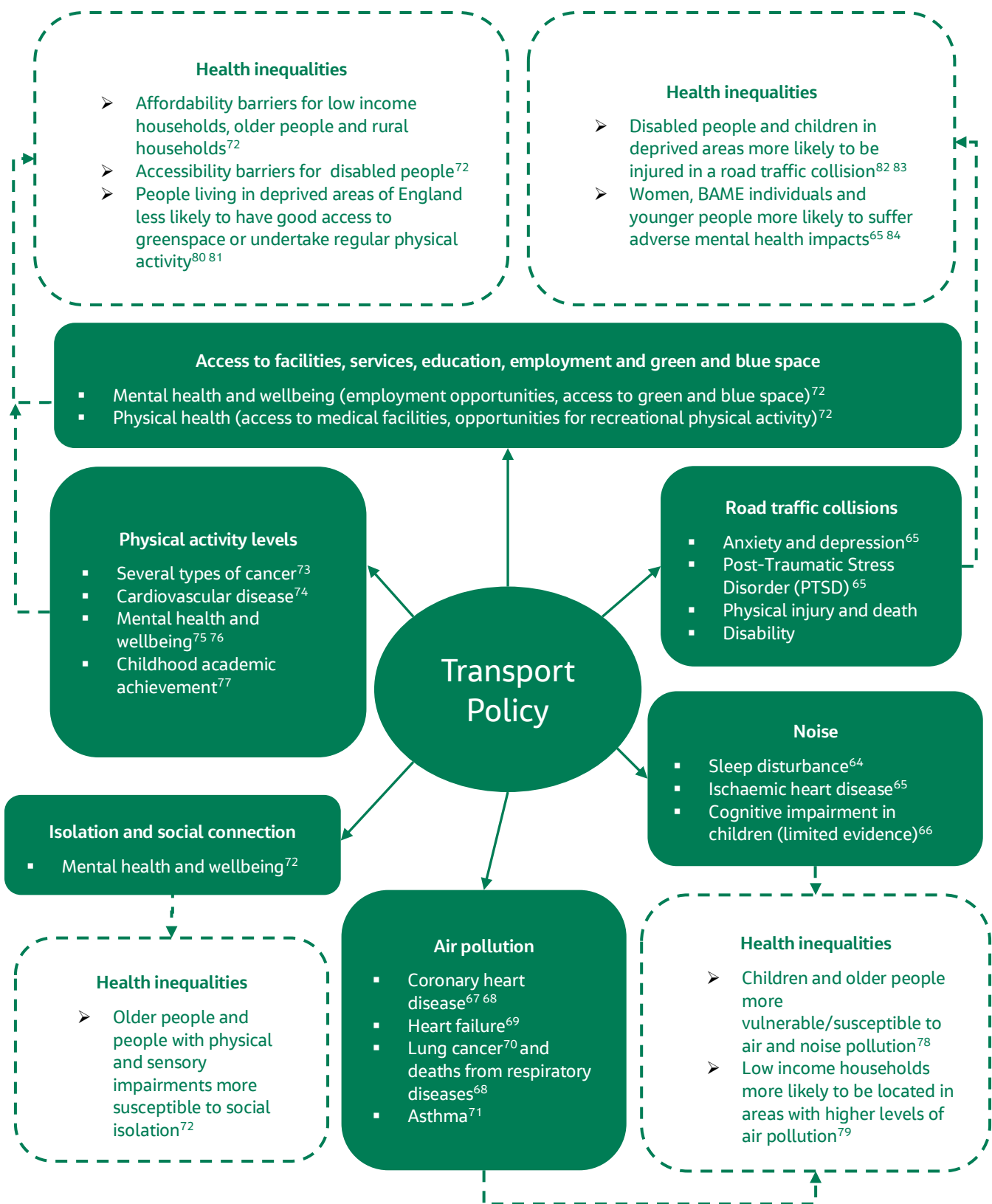▪ Childhood academic achievement[77]

Road traffic collisions

▪ Anxiety and depression[65]
▪ Post-Traumatic Stress Disorder (PTSD)[65]
▪ Physical injury and death
▪ Disability

Transport Policy

Noise

▪ Sleep disturbance[64]
▪ Ischaemic heart disease[65]
▪ Cognitive impairment in children (limited evidence)[66]

Isolation and social connection

▪ Mental health and wellbeing[72]

Health inequalities

➢ Older people and people with physical and sensory impairments more susceptible to social isolation[72]

Air pollution

▪ Coronary heart disease[67 68]
▪ Heart failure[69]
▪ Lung cancer[70] and deaths from respiratory diseases[68]
▪ Asthma[71]

Health inequalities

➢ Children and older people more vulnerable/susceptible to air and noise pollution[78]
➢ Low income households more likely to be located in areas with higher levels of air pollution[79]

Figure 5.5 Links between transport policy and health outcomes

Whilst the Strategy has potential to alter transport patterns outside the Region, the primary health effects would be occurred within rather than beyond the Region, consequently, baseline information for the Region has been derived from the following sources:

- Public Health England's (PHE) Local Authority Health Profiles webtool (https://fingertips.phe.org.uk/profile/health-profiles)

- PHE's Health Inequalities Segment Tool (https://analytics.phe.gov.uk/apps/segment-tool/)

- Suffolk County Council[84], Thurrock County Council[8586], Norfolk County Council[87], Essex County Council[88] and Southend-on-Sea Borough Council[8990] Joint Strategic Needs Assessments (JSNA)

- Transport East Regional Evidence Base[91]

- Levelling up Rural and Coastal Communities evidence base[93]

Table 5.13 presents key socio-demographic and health indicator data identified in Figure 5.4 as being particularly relevant to transport interventions. Data is presented at local authority level for the purposes of this scoping assessment. It is acknowledged that this will mask variation at the local level. For example, an initial review of local level data (Lower Layer Super Output Areas, or LSOA, is a geographic hierarchy designed to improve the reporting of small area statistics in England and Wales) using PHE's Local Health webtool shows that rates of premature mortality all causes are higher in coastal towns in Norfolk, Suffolk and Essex than in other parts of the study area. At the assessment stage local level (LSOA where available) data will be obtained and reviewed in relation to specific transport interventions.

Table 5.13 Population health indicator data

Indicator	Local Authority					England average
	Essex	Norfolk	Southend-on-Sea	Suffolk	Thurrock	
Indicator data for populations particularly vulnerable to health impacts associated with transport						
Life expectancy at birth (male) (2017-2019)	80.4	80.1	79.1	80.9	79.4	79.8
Life expectancy at birth (female) (2017-2019)	83.5	84.1	82.5	84.3	82.7	83.4
Population aged under 19 (2019) (%)	See Table 5.4					18.9
Population aged over 65 (2019) (%)	See Table 5.4					18.8

Indicator	Local Authority					England average
	Essex	Norfolk	Southend-on-Sea	Suffolk	Thurrock	
Long term health problem or disability (2011) (%)	17.1	20.1	18.5	17.9	15.6	17.6
Deprivation score (IMD 2019)	See 'Multiple deprivation (intra-regional comparison)					
People aged 16-64 in employment (%) (2019/2020)	76.9	78.0	77.6	78.4	76.6	76.2
Health indicators relevant to transport						
Physically active adults (%) (2019/2020)	67.6	66.2	63.2	69.5	58.3	66.4
Adults aged 18+ classified as overweight or obese (%) (2019/2020)	63.8	62.3	65.1	62.7	69.4	62.8
Prevalence of obesity (including severe obesity) at Year 6 (%)	19.5	19.7	19.5	18.7	25.2	21.0
Physically active children and young people (%)	45.5 (East of England region)					44.9
Premature mortality rate (aged under 75) from all causes (2017-2019) (standardised rate per 1000)	300	304	353	281	329	326
Under 75 mortality rate from all cardiovascular diseases (2017-2019) (standardised rate per 1000)	60.7	64.7	75.5	60.3	74.5	70.4
Under 75 mortality rate from cancer (2017-2019) (standardised rate per 1000)	126.1	121.5	141.6	117.9	137.0	129.2
Emergency hospital admissions from COPD (2019/2020) (rate per 1,000)	351	341	535	327	582	416

Indicator	Local Authority					England average
	Essex	**Norfolk**	**Southend-on-Sea**	**Suffolk**	**Thurrock**	
Estimated prevalence of common mental health disorders (2017) (% of population aged over 16)	14.9	15.8	17.5	14.8	17.3	16.9
Estimated prevalence of common mental health disorders (2017) (% of population aged over 65)	9.5	10.1	10.6	9.4	10.4	10.2
Killed and seriously injured (KSI) casualties on England's roads (2016-2018) (crude rate per 1000)	54.3	47.6	43.5	39.2	49.5	42.6
Note: shaded cells indicate values that are either statistically significantly worse than the England average or are within the worst quintile for England (IMD data only)						

Table 5.14 describes the baseline for each of the six main pathways between transport policy and health identified in Figure 5.5, including evidence of health inequalities where available.

Table 5.14 Health outcomes and inequalities within the study area

Potential pathway to health impacts	Health outcomes in the study area	Health inequalities in the study area
Access to facilities, services, employment, education and green and blue space	Male and female life expectancy in Southend-on-Sea are significantly lower than the England average, and rates of premature mortality (all causes) are significantly higher. Female life expectancy is Thurrock is also significantly lower than the England average. Other leading and lagging health indicators linked to access to facilities, services and greenspace are generally similar or better than the England average.	Norfolk and Suffolk have a relatively high proportion of residents aged over 65 and with a long term health problem or disability, both to experience accessibility difficulties. King's Lynn and coastal areas in Norfolk, Suffolk and Essex in particular have a high proportion of residents with long term health problem or disability. As described in detail in 'Accessibility' (Refer to Section 5.3) only a minority of coastal and rural areas have good access to town centres and hospitals by walking and public transport, and for rural communities' access to GPs is worse than the England average[92].
Road traffic collisions	Three of the five local authorities (Essex, Norfolk and Suffolk) within the study are have rate of KSI casualties which is significantly higher than the England average.	Small area analysis of relationships between areas with high proportions of older people, people with a disability or high levels of deprivation and KSI casualty rates will be undertaken to support the health assessment in the ISA should relevant options taken forward to assessment

Potential pathway to health impacts	Health outcomes in the study area	Health inequalities in the study area
Air and noise pollution	An AQMA is declared in Southend-on-Sea with another planned. Other AQMAs are within the Essex urban conurbations. A total of 46 NIAs are mainly at major road junctions within urban areas (see 'Noise'). Rates of emergency hospital admissions for COPD are significantly higher than the England average in Southend-on-Sea and Thurrock. Respiratory diseases are the main contributor to the life expectancy gap between Southend-on-Sea and England in men and one of the main contributors for women.	Southend-on-Sea Joint Strategic Need Assessment (JSNA)[104] [105]recognises that there are higher levels of transport related pollution within the more deprived areas. Whilst coastal areas in Norfolk, Suffolk and Essex have high proportions of older residents, elevated air and noise pollution levels occur within urban conurbations.
Physical activity levels	Rates of physically active adults, overweight or obese adults and obese children are statistically significantly higher than the national average in Thurrock. However, data for health outcomes linked to physical activity levels (cardiovascular disease, cancer, anxiety and depression) are similar to the England average in Thurrock and across the Region	Data on rate of physical activity in adults and children is not currently publicly available at small area level. Small area analysis of relationships between leading health indicators and health outcomes linked to physical activity levels and levels of deprivation will be undertaken to support the health assessment within the ISA. An initial review suggests there is some correlation between deprivation and rates of premature mortality from cancer and circulatory diseases in coastal towns in Norfolk, Suffolk and Essex, and in Thurrock.
Social connection and isolation	The prevalence of common mental disorders (anxiety and depression) in people aged over 16 is similar to the England average across all local authorities.	Older people are more susceptible to social isolation, and Norfolk and Suffolk have a high proportion of residents aged over 65, particularly within coastal areas. However, health indicator data shows rates of common mental health disorders in over 65s is similar to the England average. However, levels of loneliness are generally higher in urban areas with a few exceptions such as a few rural towns in Norfolk and some coastal communities[93] (see 'Accessibility' for further detail).

Key Trends

- All local authorities but particularly Norfolk and Suffolk, anticipate increases in the proportion of residents aged over 65 in the coming decades.

- Physical activity levels in some areas of Essex are declining, in contrast to the national trend.

- Rates of KSI casualties on roads in Essex and Norfolk have increased over the last decade, a trend common across the UK.

- Levels of deprivation are rising in coastal Suffolk.

Issues and Opportunities

Key issues and opportunities include:

Health protection

- Interventions which seek to reduce road traffic collisions would focus on encouraging modal shift towards public transport and active travel (see 'Health promotion' opportunities identified below), but where necessary would also include traffic calming measures such as speed limits and addressing new challenges such as from e scooters.

- Interventions reducing air and noise pollution also address inequalities in exposure to poor air quality such as within the existing AQMAs in Essex, Thurrock and Southend-on-Sea and NIAs within urban areas.

Health promotion

- Consideration of age friendly design, including design for dementia, and potential for increasing access to health services in development of transport proposals to better an older population.

- Interventions to encourage a shift towards public transport, walking and cycling which will provide benefits across several including air pollution and physical activity levels. These would include measures to improve the public realm within urban areas and increase public transport connectivity within rural and coastal areas, as well as provision of good pedestrian and cycling infrastructure.

- Continued support for access to recreational facilities and green and blue space, with opportunities to improve access.

5.6   Community Safety

Safety is an important consideration for road users. In addition, safety is an indicator of crime and the fear of crime.

There was a total of 5,923 reported road accidents in the Transport East Region in 2020, of which 2,727 were on urban roads whilst 3,196 were on rural roads[94]. The highest number of these road accidents was in Essex (2,385) whilst the lowest was in Thurrock (272).

Taking an average across the Transport East Region, 46.8 people (per 100,000 resident population) are killed or seriously injured (KSI) on the roads.[95] Suffolk has the lowest KSI at 39.2 per 100,000 population, lower than the England average of 46.7. Thurrock has the highest number of KSI at 49.5. The highest number of fatal accidents across the Transport East Region in 2020 were recorded in Essex with 38[96] while there were 98 fatal, 1513 serious, and 4,312 slight accidents across the Region in 2020.

Across England, car occupants accounted for 42% of road deaths, pedestrians 27%, motorcyclists 19% and pedal cyclists 6% in 2019[97]. Whilst 2019 saw an increase in pedestrians and pedal cyclists' accidents, 2020's change in travel patterns have contributed to a larger percentage reduction for pedestrians and a smaller reduction for pedal cyclists compared to other road users[98].

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A public transport survey (2020) for the Transport East Region shows that safety is among the top three categories considered 'Important' or 'Very important' when people use public transport. Further data showed that safety tends to be more of a factor for specific groups such as women and those retired and over 65 years of age. Women are also more likely to see safety as a 'very important' issue compared to men. When comparing personal security, especially on public transport services women tend to rate personal security as more important compared to men to tend to rate it of 'neutral' importance.

Transport interventions may affect the level of security for transport users. This includes vulnerability to crime both at stations and on the transport network. Different social groups have different perceptions and vulnerability to crime.

Evidence suggests that, younger people are likely to be more susceptible to crime as they have less ability to protect themselves or recognise the danger of a situation [99]. Older individuals are also likely to have a greater fear of crime due to their insecurity or inability to protect themselves or withstand the effects of a crime. Moreover, the physical and mental weaknesses caused by old age make the elderly easy targets to those with criminal intent. Similarly, women's susceptibility to sexual assault and frequent experiences of various forms of harassment make them feel more vulnerable and perceive higher security risks[100]

Ethnic minority groups tend to live in low-income urban areas where the risk of assault is higher. Furthermore, individuals living in deprived areas have less choice about where they live making them more exposed to crime[101].

In 2017/2018, the number of reported sexual offences committed on public transport in the UK, increased by 7.6% (over 60% of these assaults were against females). The number of violent offences increased by 16% to 13,591 in 2018/19. These trends have changed in 2019/2020 which saw recording of sexual offences decrease by 7.53% whilst violent offences still increased by 1.11%. In 2019/2020 for the Transport Police B division area North (which includes the Transport East Region in addition to Cambridgeshire) reported 248 sexual offences against females compared to 19 against men.[102]

Between 2014 and 2016, the numbers of disability related hate crime incidents in England reported to the British Transport Police decreased by 37% while since 2016, the number of incidents has seen an increase of 24%.[103]

Key Trends

Except for Suffolk, the number of people seriously hurt or killed on the roads is higher than the national average. As the population increases, this could lead to a greater number of vehicles on the roads with potential for increased accident risk but the demographic changes also indicate this population increase will be mainly in older age group so the number of two car households could decline and the average distance travelled could decline in some areas. There is also the general trend for declining accident rates despite increased vehicle numbers on the roads. Safer roads have contributed to this trend in the past and in the future road safety improvements and better technology in vehicle automation might be beneficial to help reduce accident rates further. New challenges include concerns over safety associated with e-scooter use.

Highways England has set a clear long-term goal to bring the number of people killed or injured on the network as close as possible to zero by 2040. It has committed that, by the end of 2020,

90% of travel on the roads for which it has responsibility will be on roads with a 3-star safety rating or better[104]. In addition to this national agenda, Safer Essex roads partnership has recently launched Vision Zero as their ambition to have zero road deaths and serious injuries on roads in the Essex, Southend-on-Sea and Thurrock council areas by 2040[105]. Alongside this Norfolk and Suffolk councils have teamed up with Think! and Road safety strategies to support safer travel. This could help contribute to a reduction in serious road accidents.

Issues and Opportunities

Key issues and opportunities around community safety include:

- With traffic levels reaching levels seen pre-pandemic, there in an increase number of accidents and causalities.

- Protection of children, particularly in deprived areas, and young people, who are greatly over-represented in the casualty statistics[106].

- Fatalities on rural roads are more likely than on other road types.

- Crime on public transport in the UK particularly with regards to sexual assault, violent crimes, and disruption is increasing particularly affecting women, disabled and those from ethnic minority groups.

- Encourage the reporting of crimes as well as ensuring better safety provisions for all transport users.

5.7   Biodiversity

The biodiversity study area extends to include 2km from the Transport East Region boundary and areas with impact pathways such as where there are hydrological connections including river catchments that cross the Transport East boundary or changes to air pollution and nitrogen deposition along connecting transport corridors.

Information to inform this baseline has been gathered from multiple online sources:

- Magic Interactive Map[107]

- Joint Nature Conservation Committee (JNCC)[108]

- Natural England Website[109]

- Norfolk Biodiversity Information Service[110]

- Suffolk Biodiversity Information Service [111]

- Essex Wildlife Trust Biological Records Centre[112]

The distribution of statutory designated sites of international, national and local importance are presented in Appendix A: Figure 1 and are outlined below:

International/European

Sites protected under the Conservation of Habitats and Species Regulations 2017 (as amended) and the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended) include:

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- Special Areas of Conservation (SACs), designated under the Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive)
- Special Protection Areas (SPAs) designated under the Directive 2009/147/EC of the European Parliament and of the council of 30 November 2009 on the conservation of wild birds (the Birds Directive)
- Ramsar sites, designated to meet the commitments of the Convention on Wetlands of International Importance,

These areas all contribute to an international network of protected sites.

There are 24 Special Areas of Conservation (SACs) (Appendix C) within the biodiversity study area, amounting to 179,174 ha, 81.5% of which is marine habitat. An additional offshore SAC, the Southern North Sea SAC, is within the biodiversity study area. It covers an area of 3,695,054 ha and is 100% marine habitat.

There are 24 Special Protection Areas (SPAs) (Appendix C) within the biodiversity study area, predominantly associated with coastal habitats and designated for the protection of waterbirds. These SPAs cover a total area of approximately 520065 ha, of which 85.3% is marine habitat. The Outer Thames Estuary SPA, on offshore SPA covering 392,451.66 ha of marine habitat, is also within the biodiversity study area.

Additionally, there are 23 Ramsar sites (Appendix C) within the biodiversity study area, designated to protect wetland habitats, covering an area of approximately 123,141 ha.

National/Local

There are 401 Sites of Special Scientific Interest (SSSIs), 38 National Nature Reserves (NNRs) and 119 Local Nature Reserves (LNRs) (Appendix A: Figure 1). In addition to these statutory designated sites, there are more than 2300 county or local wildlife sites, including roadside nature reserves within the Transport East study area.

Within the Transport East Region boundary approximately 90% of SSSIs have been assessed as being in 'favourable' or 'favourable recovering' condition with the majority of the remaining 10% being in 'unfavourable-no change' or 'unfavourable – declining' condition

A variety of priority habitats and species (as defined in the Natural Environment and Rural Communities (NERC) Act 2006) are identified in the Region, including coastal and lowland habitats, such as coastal and floodplain grazing marsh, lowland dry acid grassland, deciduous woodland and traditional orchards. Priority species include bats, terrestrial mammals, reptiles, amphibians, insects and freshwater and marine species. (Note: Priority habitats and nature recovery sites are covered in the section on Natural Capital).

Key Trends

The 2019 State of Nature Report (State of Nature Partnership, 2019) highlighted the current trends in UK biodiversity since 1970. For England it was reported that 35% of species have experienced reductions in population, and 31% have reduced range. In comparison, 31% of species have seen increased populations and 24% have increased ranges.

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Eight key drivers were identified for the changes in England's biodiversity: climate change, urbanisation, pollution, woodland management, fisheries, invasive non-native species, freshwater management and agricultural management, all relevant for the Transport East Region but particularly the latter two. The majority of sites within the Transport East Region. biodiversity study area that are designated for coastal habitat and birds report public access and disturbance as threats to qualifying features[113].

A 2020 review of UK biodiversity indicators found long-term deterioration for a number of indicators including pressure from invasive non-native species, status of threatened habitats and species, status of UK Priority species, birds in the countryside and at sea, and biodiversity and ecosystem. However, positive long-term trends including integration of biodiversity considerations into business activity, area of land in agri-environment schemes, pressure from pollution, protected areas, wintering water birds, mammals of the wider countryside (bats) and greenhouse gas removals by UK forests[114].

Recently, a focus on environmental commitments and schemes, such as the Water Framework Directive, Environmental Land Management Schemes (ELMS) and biodiversity net gain for development is seeking to halt and reverse the negative biodiversity trends. Agri-environment schemes have recently demonstrated positive associations with winter bird populations in England[115]. Particularly significant is the pending inclusion of biodiversity net gain as a planning requirement for all developments in England as proposed by the Environment Bill 2020.

Issues and Opportunities

The Transport East Transport Strategy has the potential to affect biodiversity in both positive and negative ways. New infrastructure required to meet the aims of the strategy may result in direct loss of habitats and associated species as well as indirect effects due to pollution and disturbance. Designated sites already under pressure from recreational access and disturbance may be negatively affected by increased accessibility as a result of the strategy. However, the Transport Strategy may have positive effects through habitat enhancement measures as well as reduced pollution due to the decarbonisation theme.

5.8   Water Environment

The water environment baseline has been derived from the following sources:
- Water Framework Directive – River Basin Districts (Cycle 2)[116]
- Environment Agency - Flood Risk Maps[117]
- Environment Agency – Catchment Data[118]
- MagicMap[119]

The study area has an extensive water environment consisting of river networks throughout the areas, estuaries on the coastline, and surface water bodies found throughout the region, and ground water aquifers. Water from groundwater and surface water sources is essential for the environment, public water supply, agriculture and industry. The different Water Framework Directive water body categories are provided in Table 5.15.

Table 5.15 Number of water bodies in the Anglian River Basin District[120]

Water Body categories	Natural	Artificial	Heavily modified	Total
Rivers, canals, and surface water transfers	189	44	293	526
Lake	10	19	17	46
Coastal	4	1	8	13
Estuarine	3	0	15	18
Groundwater	31	0	0	31
Total	237	64	333	634

The water environment has the potential to be both directly and indirectly affected by the Transport Strategy, while the functionality and the service of the infrastructure can be affected by flooding. The construction of land-based transport can potentially contribute to pollution of nearby watercourses and groundwater.

To protect the water environment, there are nationally significant legislation and corresponding standards, established within the EU Water Framework Directive (2000/60/EC), which seeks to protect and maintain water quality standards. The Water Framework Directive (WFD) sets an objective to achieve at least 'good ecological status' for all waterbodies by 2021. Very few water bodies meet 'good ecological status' particularly in Norfolk and Suffolk (see Table 5.16).

Table 5.16 Ecological and chemical classification for surface waters* (2019)[121]

	Ecological status or potential					Chemical Status	
Number of Water bodies	Bad	Poor	Moderate	Good	High	Fail	Good
603	22	105	428	47	0	603	0

*Anglian River Basin District data used

Table 5.17 Chemical and quantitative classification for groundwater* (2019)[122]

	Quantitative status		Chemical status	
Number of Water bodies	Poor	Good	Poor	Good
31	14	17	15	16

*Anglian River Basin District data used

The region falls within the Anglian River Basin District, which is made up of 338 management catchments. The Anglian River Basin Management Plan[123] (2015), states priority issues they aim to tackle include diffuse pollution from rural areas (see landscape Section 5.11) and pollution from wastewater. It is worth noting that the current river basin management plans are due to be revised in 2021. The Region also has groundwater Source Protection Zones (SPZs), which are areas to protect drinking water sources from pollution. SPZs in the Region include Zone III (total catchment), Zone II areas (outer Protection Zone) and Zone I (Inner Protection Zone) areas.

Due to the extensive coastline and land-based water bodies, the region is susceptible to flooding and coastal erosion with consequential impacts on transport infrastructure. Road and rail infrastructure may become in-operatable due to flooding. Large areas within Norfolk and Thurrock are categorised as Flood Zone 3 (high risk) and Flood Zone 2 (medium risk) see (Figure 3 Appendix A) and Table 5.17.

Table 5.18 Flood Risk areas for Groundwater and Surface water[124]

Flood Risk	
Ground and Sea Flood Risk	**Surface Water Flood Risk**
London and Thames Estuary	Canvey Island
Saffron Walden	Thurrock
Lowestoft	Chelmsford
Great Yarmouth	Colchester
Hunstanton	Ipswich
Kings Lynn	Norwich
	Harlow

The study area coastline excluding Thurrock is within Shoreline Management Plan Areas (SMPAs) and these are important for coastal management and flood protection.

Key Trends

The Water Framework Directive seeks to protect and maintain water quality standards, and where necessary highlights conditions to be improved. These standards are statutory requirements, and therefore water quality should continue to improve. This is reflected in the objectives for surface water bodies for the Anglian River Basin District, which aims to have 176 water bodies achieving good ecological status by 2027 (compared to the 47 in 2019). However, with pressure for urban development rising, the impact on poorly managed construction may result in increased pollutants within water bodies.

Due to climate change and isostatic change the sea level continues to rise affecting the region. Sea level rise can also result in saline intrusion into groundwater which, combined with over abstraction, may result in reductions in groundwater quality.

Other notable trends is that of increasing extreme weather events, and consequently flood risk and droughts.

Issues and Opportunities

Transport East Transport Strategy has the potential to negatively affect the water environment as new infrastructure may increase water pollution and affect flood risk while also offering an opportunity to potentially increase the resilience to flooding.

5.9   Air Quality

The Air Quality baseline has been derived from the following sources:

- Clean Air Strategy (2019)[125]
- Road to Zero strategy (2018)[126]
- Clean Growth Strategy (2017) [127]
- UK Plan for Tackling Roadside Nitrogen Dioxide Concentrations (2017/18)[128]
- DEFRA/DfT, 2017. Air Quality Plan for tackling roadside nitrogen dioxide concentrations in Eastern[129]
- DEFRA, UK Air Information Resource, AQMA[130]

Poor air quality contributes directly to ill health, with elderly people and those with health conditions such as asthma and heart disease being more at risk. Deposition of nitrogen oxides can change soil chemistry and affect biodiversity in sensitive habitats. In addition, ozone, formed when volatile organic compounds react with other air pollutants in the presence of sunlight, can travel long distances from its source and trigger asthma attacks and other respiratory problems as well as damage to crops.

The UK Government's Clean Air Strategy (DEFRA, 2019) reports that road transport, domestic shipping, aviation and rail are responsible for a significant proportion of air pollutant emissions - 50% of nitrogen oxides (NOx), 16% of fine particulate matter ($PM_{2.5}$) and 5% of non-methane volatile organic compounds (NMVOCs). Road transport is the largest source of nitrogen oxides in the UK and is the main source of exposure at the roadside, as well as producing particulate matter and VOCs. Airports also have an adverse effect on air quality from surface access via road transport and also on stratospheric ozone. The region is host to one major international airport at London Stansted and two small international airports at Norwich International and London Southend. The region is host to several major ports on the Suffolk and Essex coastline, including Felixstowe, the UK's busiest container port where shipping is a contributor to SO_2 and NOx emissions.

Legally binding air quality objectives (AQOs) have been established in the UK based on European law, to limit outdoor exposure to a range of air pollutants, as set out in the UK's Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007). The UK Clean Air Strategy (2019) outlines further actions the Government is taking to tackle emissions. The UK plan for tackling roadside nitrogen dioxide (2017) produced regional Zone Plans, including for the Eastern zone, which examined air quality in the Transport East area and adjacent counties to the west and parts of London. The Plan required local authorities to prepare feasibility studies to deliver NO_2 concentration compliance in the shortest possible time, including Southend-on-Sea Borough Council in 2018.

Local authorities are responsible for monitoring and assessing air quality in their areas, and where AQOs are not likely to be achieved, they must declare Air Quality Management Area

(AQMA) and prepare an Action Plan to tackle the issue. AQMAs are mainly declared where nitrogen dioxide (NO_2) levels from road vehicles exceed the AQO.

Across the region, 16 of 26 of authorities have declared AQMAs. Of the 46 AQMAs, 42 were for exceedances of annual mean NO2, with four in Thurrock declared for exceedances of particulate matter (PM_{10}). AQMAs have been declared in the following council areas: Thurrock (18 AQMAs); Southend-on-Sea Borough (1); 12 in Essex districts: Colchester (3), Brentwood (3), Chelmsford (2), Uttlesford, Maldon, Epping Forest, and Rochford; 11 in Suffolk: Ipswich (5), West Suffolk (3), East Suffolk (2) and Babergh; and 4 in Norfolk: King's Lynn and West Norfolk Borough (2), Norwich City, and Breckland (see Appendix A: Figure 2).

Key Trends

Air quality has improved across the UK in recent years. Emissions of nitrogen oxides fell by 27% between 2010 and 2016 and are also at their lowest level since records began (DEFRA, 2019). The first UK lockdown for the Covid-19 pandemic in early 2020 led to a substantial improvement in air quality in major cities due to sudden reductions in road and air traffic. Ozone levels however are expected to require longer term changes before reduced levels are measured. The question remains whether this will be sustained when lockdown restrictions are fully eased. Nevertheless, poor air quality remains a significant issue for public health.

The UK Government has adopted more stringent legally binding ceilings for national emissions of air pollutants for 2020 and 2030 and has published proposals to tackle emissions in the Clean Air Strategy (2019), the Road to Zero strategy (2018), a plan for tackling roadside nitrogen dioxide concentrations (2017/18), and the Clean Growth Strategy (2017) which sets out measures to reduce air pollutant emissions from the transport sector. These policies include:

- increasing the use of electric and other low emission vehicles
- ending the sale of new petrol and diesel cars and vans by 2030
- encouraging and facilitating more active forms of travel (walking and cycling)
- encouraging a shift to public transport (including through the National Bus Strategy for England (March 2021) and
- introducing low emission buses and electric trains
- shifting passenger and freight traffic from road to rail
- adoption of Clean Air / Low Emission or Ultra Low Emission Zones

However, these improvements could be countered by general increases in road, shipping and air traffic.

Issues and Opportunities

The Transport Strategy can support national and local policies to reduce air pollutant emissions from road, rail, and ports, in conjunction with similar policies and interventions supporting those above.

5.10   Noise and Vibration

The noise and vibration baseline has been derived from the following web sources:

- Environmental Noise Directive (2002/49/EC)[131]
- Extrium – Noise and Air Quality Viewer[132]

Noise is considered as any additional unwanted sound, which has the potential to cause harm to human and ecosystem health. Transport is the largest contributor to noise pollution in the UK[133], and therefore should be considered when developing the strategy, to minimise the potential for harm to human and ecosystem health (see Section 5.4). Due to these effects the EU Environmental Noise Directive (2002/49/EC) introduced strategic noise mapping and noise Actions Plans. The Transport East region has a number of major infrastructure routes including road and rail, in close proximity to urban areas (See Appendix A: Figure 2). To reduce this impact, Noise Important Areas (NIAs) have been introduced in areas where transport noise is considered to be a problem.

Within the Transport East Region, there are more than 100 NIAs, all located around major road infrastructure, particularly the A12, A13 and A127. In addition to this, there is significant noise around transport connection hubs such as ports and airports.

Beyond high noise areas, tranquil areas are where there is peace, quiet and calm[134], which is often referred to within planning and policy documents as something to be protected or achieved. Tranquil areas are likely to be far from major transport infrastructure, in rural areas.

Key Trends

Increasing population and the preference of road use as a primary form of transport, car usage may increase and with increased road usage, urban areas and holiday destinations may experience increased congestion. However improved vehicle technologies such as hybrid and electric cars, are quieter than conventional vehicles, so may also contribute in a reduction in general transport noise although at higher speeds when tyre noise dominates so benefits may be more limited. Travel pattern changes due to the COVID-19 pandemic and related restrictions, showed an initial decline in road, rail and air transport. However, the long-term travel behaviour changes are difficult to predict. Over the last 20 years, tranquillity mapping produced by CPRE[135], demonstrated a long-term trend of a reduction of tranquil areas, which therefore should be considered by the Strategy as something to protect.

Issues and Opportunities

With an increasing and more elderly population and road usage previously discussed, there is the potential for the Transport Strategy to increase noise pollution. Equally, it could look to decentralise and reduce congestion in urban areas, as well as promote active lifestyles. Under the multi-centred growth key theme, the promotion of walking and cycling, which with the vehicle technology changes could contribute to reducing noise and vibration particularly in close proximity to the identified nIAs, although within limits as tyre noise is a more dominant source of noise than engine noise at higher speeds.

5.11   Climatic Factors

The climatic factors baseline is derived from the following sources:

- Met Office[136]
- Reports from the UK Department for Business, Energy and Industrial Strategy , UK Committee on Climate Change, IPCC[137]

The climate of the Transport East Region is generally mild and dry. It is one of the driest regions of the UK, with many areas receiving less than 700mm of rainfall a year. Hours of sunshine are

higher towards the coast. This is also one of the more sheltered parts of the UK, although sea breezes are an important feature of the weather in late spring and summer. Mean annual temperature over the region varies from around 9.5 °C to just over 10.5 °C (compared to a UK average of between 7 and over 11 °C, and some of the UK maximum temperature records are held by stations in the region.[138]

Managing climate change has been defined as one of the two key challenges of this century[139]. The UN Intergovernmental Panel on Climate Change has found that anthropogenic greenhouse gas emissions (principally carbon dioxide and methane, but also nitrous oxide and fluorinated gases) and other human activities are estimated to have caused approximately 1°C of global warming above pre-industrial levels, and that global warming is likely to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate[140].

In 2019, total UK greenhouse gas emissions were 45% lower than in 1990 and 3.6% lower than 2018. Transport is now the largest sector source of UK domestic greenhouse gas emissions, almost entirely through carbon dioxide emissions, with 122 $MtCO_2e$, 27% of the total, in 2019 (BEIS, 2021)[141]. Emissions from transport fell (by 1.8%) in 2019 for the second year in a row, despite an increase in road traffic. Road transport is the most significant source of emissions in this sector, dominated by passenger cars (67.7 $MtCO_2e$), followed by HGVs (19.5 $MtCO_2e$) and light duty vehicles (19.2 $MtCO_2e$), with national shipping (5.5 $MtCO_2e$), buses (3.1 $MtCO_2e$) and railways (1.7 $MtCO_2e$) much smaller sources. Domestic transport emissions are only 4.6% lower than in 1990, with increased road traffic largely offsetting the improvements in vehicle fuel efficiency. In 2019 based on fuel supplied from UK bunkers, emissions from international aviation fuel use were estimated at 37.0 MtCO2e, a rise of 1% from 2018, and emissions from international shipping were 7.5 MtCO2e, a fall of 4.8%.

In the Transport East Region, transport was the highest emitting sector in 2018, responsible for 41% of emissions (7,667 kt CO2e), 96% from road vehicles. Emissions have increased since 2010 contributing approximately 5% of UK transport emissions (see Transport East *Decarbonisation Evidence Base and Strategic Recommendations Report*[142]). The Region is however, one of the largest low-carbon energy producers in the UK, from nuclear power and offshore wind, and has potential to contribute to the decarbonisation of the UK electricity supply.

The Transport East Region is likely to become warmer and drier generally, with hotter, drier summers and heavier bursts of rainfall increasing localised flood risks, which transport infrastructure will need to accommodate. The risks comprise:

- Flooding and exposure to high temperatures and heatwaves
- Water shortages
- Damage to wildlife and natural ecosystems,
- Damage to soils
- Sea level rise and coastal erosion
- Loss of food production and trade
- Pests and diseases[143].

Global agreements and national commitments are attempting to limit greenhouse gas emissions. The Kyoto Protocol in 2005 first committed the UK to reduce emissions by 12.5% over the period 2008 to 2012, and the Climate Change Act 2008 set a legally binding target to reduce emissions to 80% of 1990 levels by 2050. The UK was subsequently one of 195 signatories to the historic 2015 United Nations Paris Agreement which seeks to achieve

significant reductions in greenhouse gas emissions to avoid the worst effects of climate change by limiting global warming to well below 2°C and pursue efforts towards 1.5°C.

In June 2019 the Climate Change Act 2008 (2050 Target Amendment) Order 2019 required at least a 100% reduction of greenhouse gas emissions (compared to 1990 levels) by 2050 (the 'net zero' target). The Government's Sixth Carbon Budget (April 2021) commits the UK to reduce emissions by 78% by 2035 compared to 1990 levels, and incorporates the UK's share of international aviation and shipping emissions[144].

Measures to reduce greenhouse gases have been made by the Committee on Climate Change[145], the UK Climate Assembly[146] and the UK Government published its *Decarbonising Transport: Setting the Challenge* report[147], with a Transport Decarbonisation Plan due later in 2021.

Key Trends

There is increasing local political will to tackle climate change, as evident Babergh, Breckland, East Suffolk, Ipswich, Mid Suffolk, North Norfolk, Norwich, Suffolk, Thurrock and West Suffolk councils have declared climate emergencies[148], while some of which have made commitments to work towards net zero emissions by 2030.

Public concern about climate change remains high. In the latest BEIS Public Attitudes Tracker (March 2021), 80% of the public said they were either very concerned (33%) or fairly concerned (47%) about climate change. Transport choices were also among the top three behaviours expected to have the largest impact on tackling climate change - everyone choosing to walk, cycle or use public transport more instead of using a car (49%) and everyone driving an electric or hybrid car (35%).

In 2020, greenhouse gas emissions fell due Covid-19 pandemic (7% globally and by 13% in the UK)[149]. A key challenge will be to sustain reductions in emissions after Covid restrictions are lifted.

The Transport East *Decarbonisation Evidence Base and Strategic Recommendations Report* (November 2020) examines trends including business opportunities for sustainable economic growth and the need for R&D, innovation and legal support to develop new and improved carbon reduction practices and technologies. It also notes:

1) electric vehicle (EV) use is increasing assisted by an increasing number of public EV charging points (568 at the last count);

2) plans for local low emission public transport projects including electric buses and light rail;

3) new railway lines into deep-sea container ports to enable movement of freight by rail rather than road, and other ports are also investing in electrification and decarbonisation.

Issues and Opportunities

As the highest greenhouse gas emitting sector, transport in the region has the opportunity to play a significant role in reducing greenhouse gas emissions, in line with the UK's international commitments and national targets. Key recommendations and opportunities are set out in Transport East's *Decarbonisation Evidence Base and Strategic Recommendations Report* (November 2020), the Committee on Climate Change's Net Zero report[150], the UK Climate Assembly report[151] and the *DfT's Decarbonising Transport - Setting the Challenge report* (2020)[152]. Transport East has the opportunity to deliver change by :

4) Reducing the need to travel by diesel and petrol vehicles;

5) Accelerating a shift from the private car to active transport (walking and cycling) and to improved low-carbon public transport (electric buses and trains);

6) Decarbonising road vehicles, including increasing the uptake of electric vehicles;

7) Tackle emissions from ports and airports;

8) Understanding what works where - place based solutions;

9) Supporting research and development for green transport technology and innovation;

10) Delivering resilience to climate change.

5.12   Landscape/Townscape and Visual

The landscape/townscape baseline has been derived using the following web sources:

- MagicMap[153]
- Natural England[154]
- Nationaltrails.com[155]
- Landscapes for Life[156]
- Landscape East[157]

The landscape and townscape of the Transport East region is diverse. As seen in Figure 4 (Appendix A), beyond Norwich, Ipswich and Colchester the region is largely rural with many smaller villages, the Norfolk and Suffolk Broads and three Areas of Outstanding Natural Beauty (AONB):

- Dedham Vale
- Suffolk Coast and Heaths
- Norfolk Coast

Extension of the Suffolk Coast and Heaths AONB by an 38km^2 into Essex was announced in July[158].

National trails include: The Peddars Way and Norfolk Coast Path run from Knettishall Heath Country Park in Suffolk, to Holme next the Sea in Norfolk[159]. The Region also has 124 long distance paths[160], for example, Nelsons Way, a 650km beginning in Burnham Thorpe, Norfolk.

Living landscapes is a vision shared by local wildlife trusts, with the aim of restoring, recreating and reconnecting habitat. Norfolk Wildlife Trust have identified 6 priority living landscapes within the county boundary, and Essex Wildlife Trust have identified 80 areas to improve over the next decade. Suffolk Wildlife Trust have also identified areas for living landscapes.

The Region comprises 14 National Character Areas[161] (NCAs) consisting of a variety of landscape types (see Figure 5.6 and Table 5.19):

- North West Norfolk
- East Anglian Chalk
- North Norfolk Coast
- Mid Norfolk

- The Brecklands
- The Fens
- South Suffolk and North Essex Claylands

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- South Norfolk and High Suffolk Claylands
- Central North Norfolk
- Suffolk Coast and Heaths
- Northern Thames Basin
- Greater Thames Estuary
- The Broads; and
- North East Norfolk and Flegg

Table 5.19 Landscape Character Types in the Transport East Region[162]

Landscape Character Type	Description	Location
Broadland Marshes	Low lying wetland	East Norfolk
Chalk Hills and Scarps	Chalk hills incised by dry valleys	Predominately outside the TE region but is found in west Suffolk
Coastal Dunes	Sand dunes	North and east coastline
Coastal Levels	Marshland	East and north coast
Forested Estate Sandlands	Conifer plantations, arable land and remnant heaths	Found mainly in the Brecks of Norfolk and Suffolk
Lowland Settled Claylands	Coastal farmland	Southern Essex, Thurrock
Lowland Settled Farmlands	Settled agricultural landscape	North east Norfolk, Southern Essex, Thurrock
Lowland Village Chalklands	Low lying arable landscape	Central/west Norfolk
Lowland Village Farmlands	Low lying landscape	West Norfolk
Planned Peat Fen	Low lying, dark peaty soils	South west Norfolk and north-west Suffolk
Planned Silt Fen	Engineered open landscape	West Norfolk
Plateau Estate Farmlands	Arable landscape	Norfolk and north-east Essex
Saltmarsh and Intertidal Flats	Natural habitats of saltmarsh and intertidal mudflats	North Norfolk coast and east tidal creeks
Settled Chalk Valleys	Chalk valley landscape, often soft rounded topography	North-west Essex
Settled Marsh	Flat, intensively farmed arable landscape	West Norfolk
Settled Plateau Claylands	Extensive, elevated plateau landscape	North Suffolk and South Norfolk
Valley Meadowlands	Low lying valley floors	North Norfolk
Valley Settled Farmlands	Settled, busy landscapes	Extending from Chelmsford to Fakenham
Wooded Hills and Ridges	Varied and textured landscape	Essex

| Landscape Character Type	Description	Location
Woodland Peat Fen	Poorly drained wetland	Norfolk and Suffolk
Wooded Plateau Claylands	Ancient wooded landscape of arable farms	Norfolk, Suffolk, Essex
Wooded Plateau Farmlands	Enclosed landscape	North Essex and south-west Suffolk
Note: Shaded cells indicate dominant Landscape Character Types within the Transport East region		
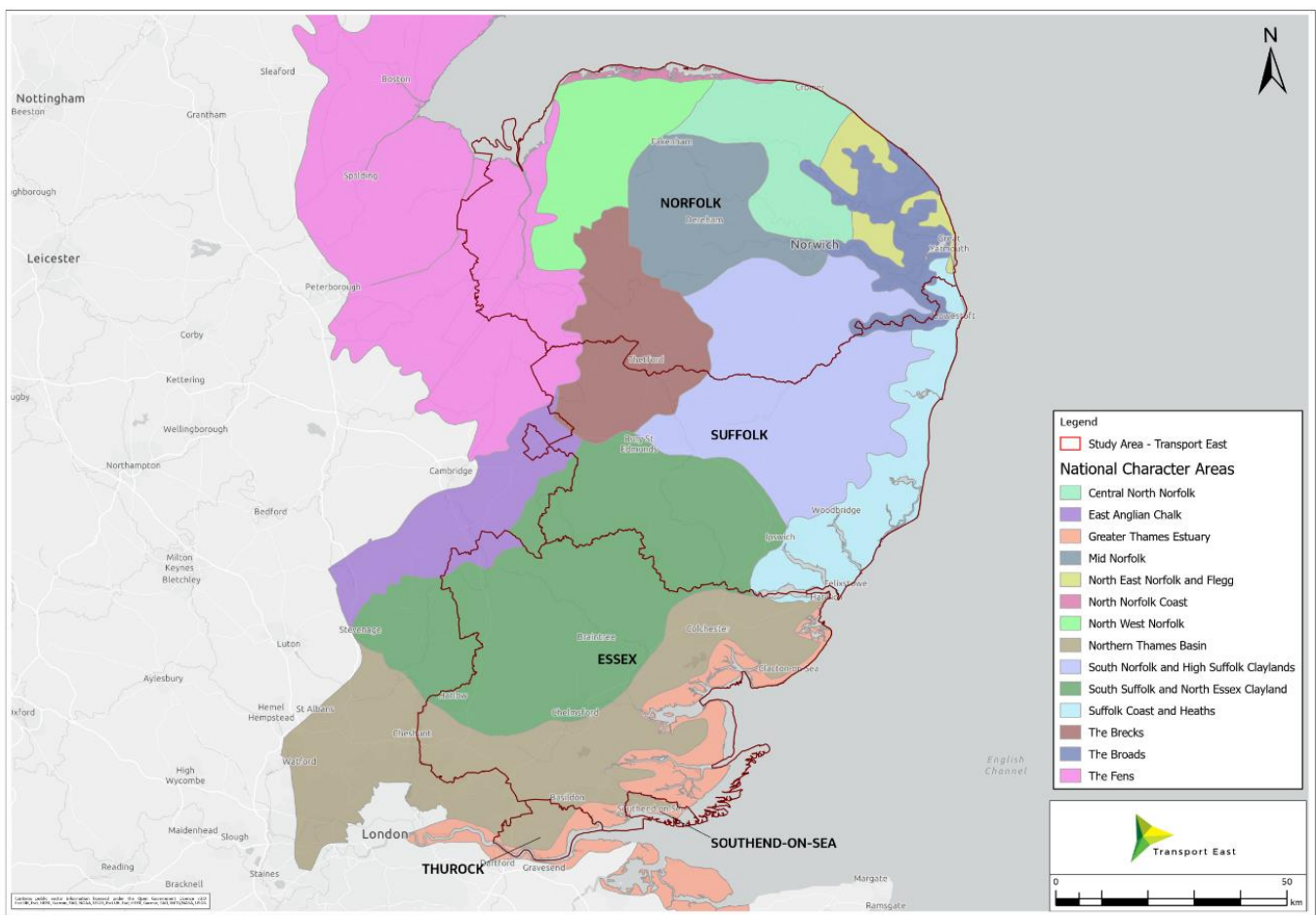
Figure 5.6. National Character Areas

Coastal landscapes are particularly important in the region and are recognised in the local coastal heritage designations (see cultural heritage section 5.13 also).

Key Trends

The current landscape is subject to pressure from climate change, urbanisation and intensive agricultural practices. Designated area policies will provide protection against some pressures,

but they are vulnerable to recreational and agricultural pressures. In the future there could be landscape benefits from the implementation of the new agricultural and environmental support through ELMS.

In July 2020 it was announced that the Suffolk Coast and Heaths AONB is due to be expanded by an additional 38km², extending the designated area to across county borders and into Essex[163].

Issues and Opportunities

A key theme of the Transport Strategy is improving rural and urban connectivity, and therefore improved access to rural assets may give rise to damage in the absence of effective management. The Transport Strategy also refers to promoting healthy lifestyles and improved access to trails which may also require active management. New infrastructure may adversely affect landscape quality, including the character and visual amenity of areas beyond designations.

5.13   Cultural Heritage and Archaeology

The cultural heritage and archaeology baseline mapping has been derived using the following:

- MagicMap[164]
- Historic England[165]
- While there are UNESCO World Heritage Sites in the Region, other designated cultural assets exist. For example, the Region has 1093 scheduled monuments protected under the Ancient Monuments and Archaeological Areas Act 1979. There are 1,218 Grade 1 and 37,422 Grade 2 listed buildings designated due to their special architectural and historic features and protected under the Planning (Listed Buildings and Conservation Areas) Act 1990. Figure 5.7, 5.8 and 5.9 show the distribution of heritage assets in Essex, Thurrock and Southend-on-Sea, Norfolk and Suffolk respectively.
- There is one registered battlefield (Battle of Maldon, 991) protected under the Historic Buildings and Ancient Monuments Act 1983 (as amended) and 116 Registered Parks and Gardens, for which the NPPF requires consideration of their conservation value.

Finally, the Region exhibits two non-statutory Heritage Coast designation in North Norfolk and Suffolk that protected under via the NPPF
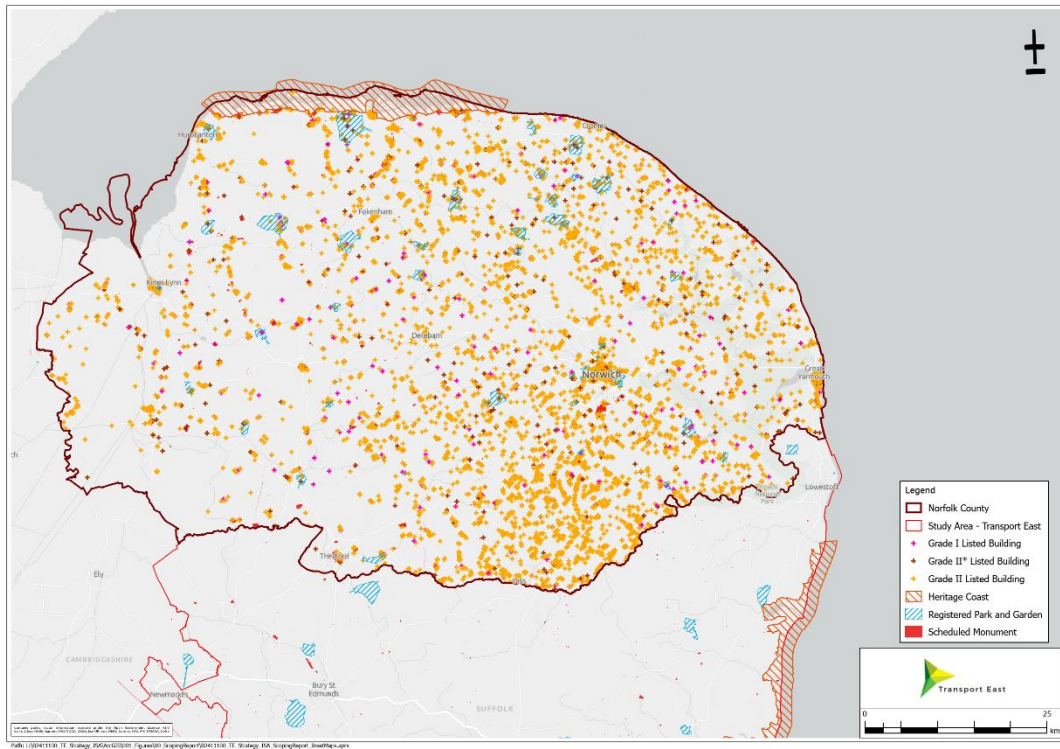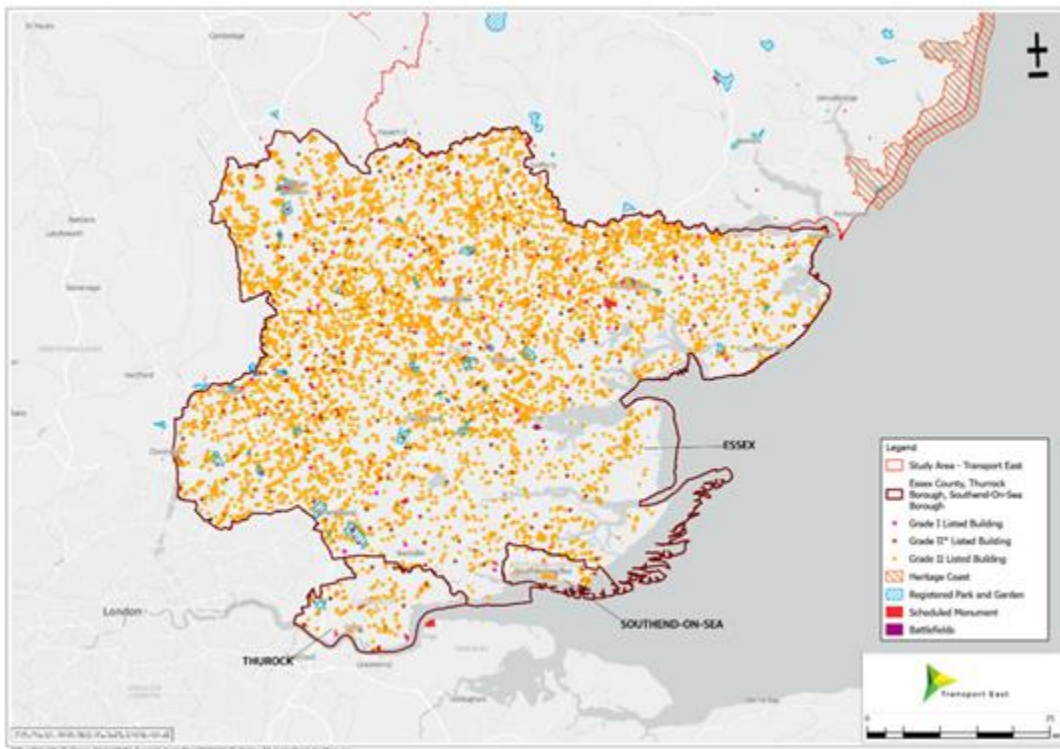
Figure 5.7 Heritage assets in Norfolk

Figure 5.8 Heritage assets in Essex, Thurrock and Southend-on-Sea
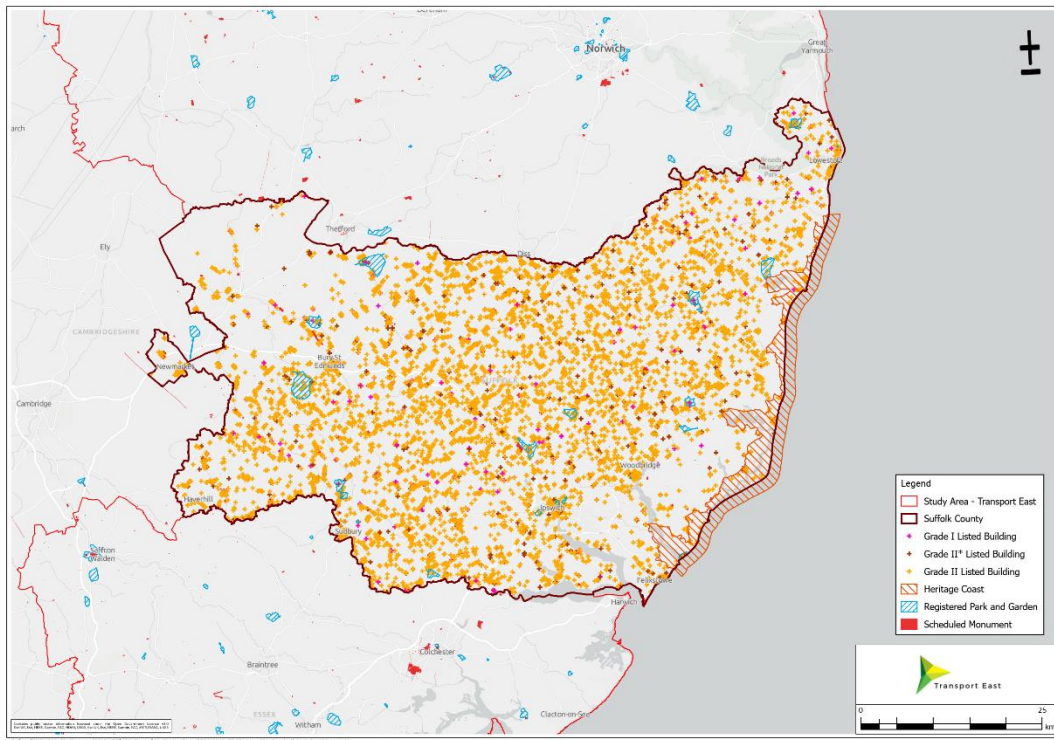
Figure 5.8 Heritage assets in Suffolk

There are 618 Conservation Areas, defined as 'areas of special architectural or heritage interest, the character or appearance of which it is desirable to preserve or enhance' within the Region (see Table 5.20).
Table 5.20 Conservations Areas within the TE region*

Constituent Areas	Conservation Areas
Norfolk	234
Suffolk	173
Essex	190
Southend-on-Sea	14
Thurrock	7
Total	618

*Data on numbers of Conservation Areas unavailable for the districts of Colchester (Essex) and Breckland (Norfolk)

There are also significant archaeological and paleo-archaegologial interests including potential and unknown interests in the region which can be affected by infrastructure development disturbing soils or changing drainage.

Historic landscapes are another aspect of cultural heritage, including settlements and land boundary patterns and the layers of evidence of past land use both spatially and through time. These are closely linked to a sense of place and the value and knowledge communities have for an area.

Key Trends

There is potential for adverse direct effects from development on the setting of designated heritage features from lighting, noise and vibration and visually intrusive activity as well as effects from climate change and air pollution. The adverse effects associated with climate change include an increase in extreme weather, which may deteriorate heritage features, particularly those already in a vulnerable and poor condition or affect soils and drainage with potential effects on both built heritage but also buried archaeological interest. Air pollution can also contribute to the degradation of heritage assets[166].

Issues and Opportunities

The Transport Strategy may negatively affect heritage assets due to loss or damage or setting impacts. By improving connectivity of rural areas, the public may have better access to heritage assets. The Transport Strategy could bring long term benefits from reducing air pollution. Archaeological and paleo-archaeological interests could however be at risk from infrastructure development.

5.14   Soils, Geology and Contaminated Land

The baseline for soils, geology and contaminated land has been derives using the following web sources:
- Landis Soilscapes[167]
- BGS Geology of Britain viewer[168]
- MagicMap[169]
- Natural England[170]

The Regions' bedrock comprise three dominant sedimentary rock types - White Chalk; Neogene And Quaternary Rocks (Gravel, Sand, Silt and Clay) and Thames Group (Clay, Silt, Sand and Gravel). There are also smaller outcrops of Mudstone, Sandstone and Limestone. Superficially, the geology primarily includes Till (Diamicton) and Glacial Sand and Gravel[171].

There are 99 SSSIs recognised for their geological significance, nearly half of which are found in Norfolk (40 in Norfolk, 33 in Suffolk, 22 in Essex and 4 in Thurrock). There are also Regionally Important Geological Sites (RIGS) and Local Geological Sites (LoGS).

Throughout the study area, the following soils are prevalent:

- Stagnosols
- Gleysols
- Cambisols
- Luvisols
- Leptosols

Deep peaty soils can be found in the East Anglia Fens, which includes areas within Norfolk and parts of Suffolk. Natural peatland is an important habitat for a number of species and is also identified as a significant carbon sink and considered vital to climate regulation[172] Due to the ongoing national commitments of decarbonisation, this habitat should remain untouched.

The regions agricultural land has been identified using MagicMaps, which shows the regions agricultural land classification (ALC) is predominantly Grade 2 and Grade 3, with some minor Grade 1 and Grade 4. Grade 1 land is excellent quality land with no or minor limitations for cultivation, Grade 2 is very good quality land and Grade 3 refers to land which is 'good to moderate' quality, meaning there are minor limitations to the choice of crop and Grade 4 is 'poor quality'. Grade 3 can be subdivided as 3a and 3b although this subdivision is not available for the regional mapping. A large proportion of the region is considered 'best and most versatile land' (Grade 1, 2 or 3a) (see Figure 5.11).

Key Trends

The main area for change is the potential pressure for development may cause an increase in pressure for land and result in the loss of valuable soils. Changes to agricultural practices can also influence erosion rate and loss of soil nutrients and the climate change will also affect soils and drainage and their vulnerability to erosion. Increased areas requited for waste disposal may cause land contamination.

Issues and Opportunities

The 99 SSSIs designated for their geological significance, local geological sites and areas of natural peatland should be avoided to ensure there is no detriment. There may be opportunities to link decarbonisation aims to initiatives to improve soil carbon storage and peatland restoration.

5.15   Material Assets and Resources

The baseline for material assets and resources has been derived using the following sources:

- Regional Evidence Based (Transport East) [173]
- CORINE Land Cover [174]

Material assets and resources are broad terms, taken in this context to mean physical materials that are valued and/or used by people This can include buildings and infrastructure, including urban areas, transport routes, minerals and land. Assets and resources relating to cultural heritage, the natural environment / biodiversity and water resources are examined under other headings in this report.

The material assets and resources that could be considered in the Transport East region[175] include:

Population and housing:

- Approximately 3.5 million people live in the region, 33% in rural locations (a highly rural area, as compared to the 19% average for England), in around 1.54 million homes. The number of dwellings in the region has increased by 5% between 2009 and 2017 with an average increase of 8,784 homes a year.

- The region has two cities (Norwich and Chelmsford) and these and the largest towns (Southend-on-Sea, Ipswich, Colchester, Grays, Harlow and Thurrock) are the main population and economic centres, supported by a large number of smaller towns including King's Lynn, Great Yarmouth, Bury St Edmunds, Lowestoft, Basildon, Braintree, Clacton-on-Sea, Epping, Brentwood, Canvey Island and Harwich.

Transport infrastructure:

- There are 15 strategic road and rail corridors in the region, which has approximately 82 km of motorways (the M11 and M25 in Essex and Thurrock) and 589 km of dual carriageway A roads. The major road network provides important north-south connectivity within Norfolk and Suffolk (A140, A12, A146, A131, A134, A1307) and east-west connectivity in Essex, Southend-on-Sea and Thurrock (A127, A13, A130, A133 and A1159).

- Three main radial railway routes (Great Eastern Main Line, West Anglia Main Line and Essex Thameside) connect the main urban settlements with London and limited east-west connections (Felixstowe to Ipswich, Ipswich to Cambridge, Norwich to Cambridge and Norwich to Peterborough via Ely), with branch lines connecting smaller settlements (See Figure 5.10).

- Walking and cycling is supported by the region's National Trails (including the Peddar's Way and Norfolk Coast Path), public rights of ways and National Cycle Network routes.

- There are 13 ports, including the UK's busiest container port at Felixstowe, Harwich Port, Port of Tilbury and DP World London Gateway, and three international airports (London Stansted Airport, London Southend Airport and Norwich Airport). Heavy goods vehicle traffic in the region is dominated by routes accessing the main ports (Figure 5.10)
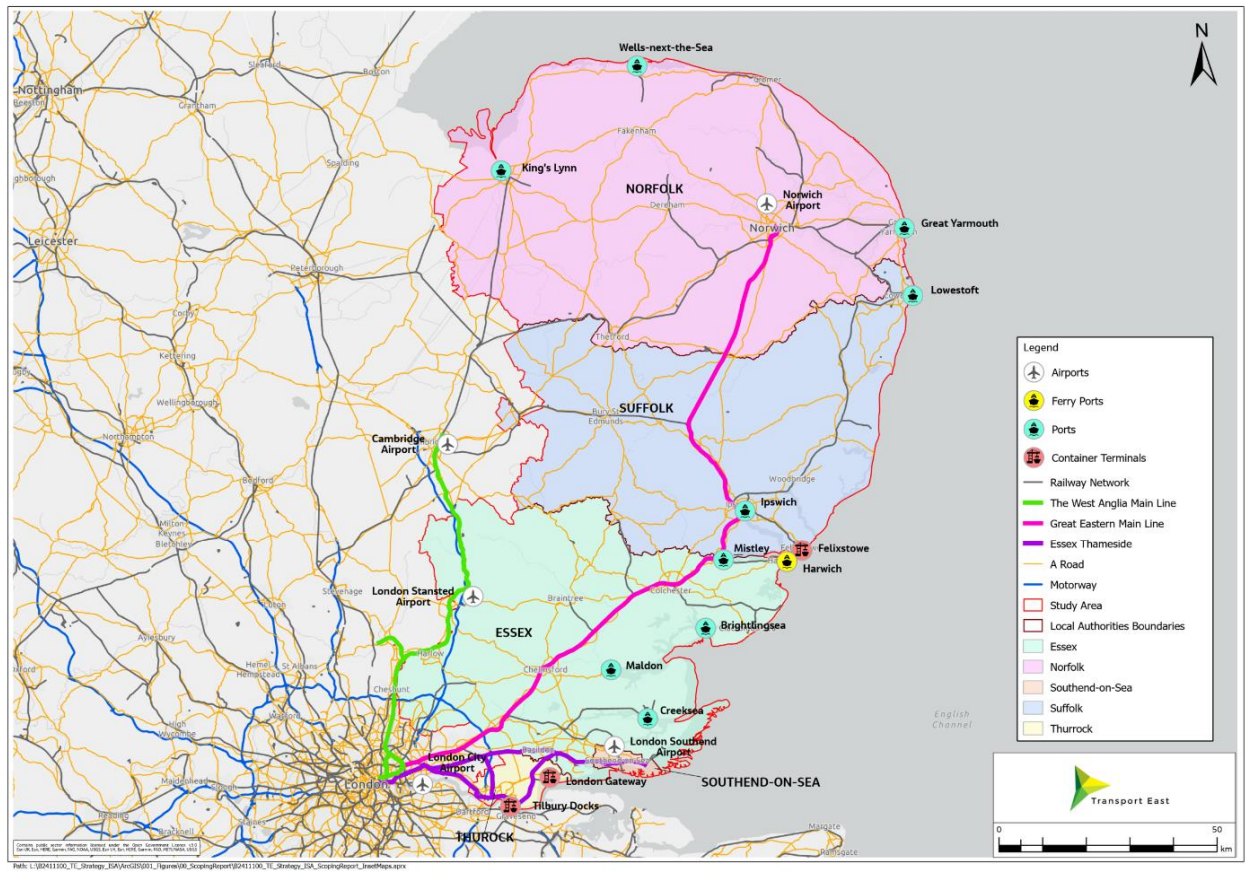
Figure 5.9 Transport Infrastructure in the Transport East region

Economic:

1) The Transport East Region has a diverse economy, the main sectors being distribution, public administration, real estate and manufacturing, and there are also key strengths in ICT, agri-tech, biosciences, green energy production, financial industries and the visitor economy.

2) Construction, transport and logistics have particular importance, with the UK's busiest container port at Felixstowe and the international shipping ports of DP World London Gateway and Tilbury, which require good rail and road links.

Energy:

3) The Region's coastline hosts the nuclear power (Bradwell and Sizewell) industry and the offshore renewables industry with major offshore windfarms including Scroby Sands, Sheringham Shoal, Greater Gabbard, London Array, Gunfleet Sands and Galloper.

Agriculture:

4) Around three quarters of the Region's land is used as productive farmland, half being arable. Farms are on average (118 hectares) larger than England as a whole (86 hectares; data from 2018) and are major producers of wheat, barley and oil seed rape, sugar beet, potatoes, pigs, chickens and eggs.

5) Half of the farmland in Essex, and large parts of Norfolk and Suffolk, are classed as 'best and most versatile land', of Grade 1, 2 or 3a under the Agricultural Land Classification. (Figure 5.10)

Minerals:

6) The Region has working and allocated sites for sand and extraction, and a smaller number of sites that make an important contribution to the national production of silica sand. Minerals are transported long distances by both road and rail, including through strategic rail depots and marine wharves.

7) The Norfolk Minerals and Waste Local Plan Review 2019[176] proposes to plan for the extraction of 10.5 million tonnes of silica sand in West Norfolk, 340,000 tonnes of carstone and 20.3 million tonnes of sand and gravel during the Plan period to 2036.

8) The Suffolk Minerals and Waste Local Plan 2020[177] allocated nine sites for the extraction of sand and gravel sufficient to supply 9.3 million tonnes over the Plan period to the end of 2036.

9) Essex Minerals Local Plan 2014[178] sets out additional provision for 40.67 million tonnes of sand and gravel and 0.39 million tonnes for silica sand within the Plan period to 2029.

Forestry:

10) The CORINE inventory179 estimates that 5% of the region has woodland cover. The largest forested areas are Thetford Forest in Norfolk/Suffolk (the largest lowland pine forest, and largest man-made lowland forest in the UK), and Epping Forest in Essex/ London.
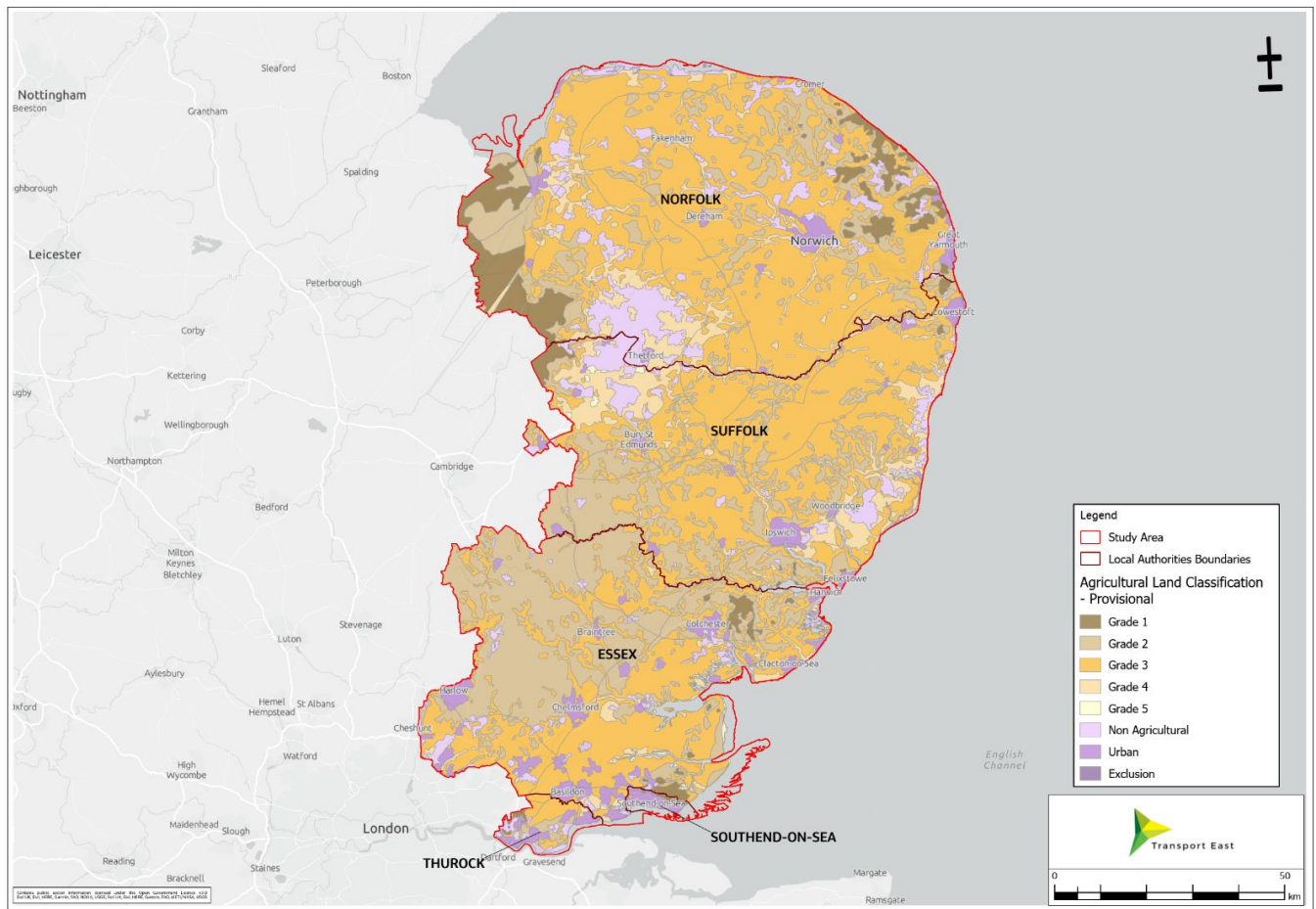
Figure 5.10 ALC for Transport East region

Key Trends

Land use changes including development and planning pressures for the expansion of housing and urban land uses, transport investment decisions including a range of existing planned road and rail schemes, demand for minerals, and agricultural change.

Issues and Opportunities

Potential issues include loss of sterilisation of material assets from infrastructure development or conflict with other land uses. There are opportunities to improve access along congested or poorly connected routes.

5.16   Natural Capital and Ecosystem Services

Natural capital can be defined as: '*the sum of our ecosystems, species, freshwater, land, soils, minerals, our air and our seas. These are all elements of nature that either directly or indirectly bring value to people and the country at large. They do this in many ways but chiefly by*

providing us with food, clean air and water, wildlife, energy, wood, recreation and protection from hazards'[180]. The direct and indirect benefits provided by natural capital assets are known as **ecosystem services.**

To develop a natural capital baseline, a proportionate two-staged approach has been taken including spatial analysis and review of strategic documents.

Spatial Analysis

Several approaches to developing natural capital approaches are available, as detailed in resources such as Defra's Enabling a Natural Capital Approach[181] and Natural England's Natural Capital Indicator work[182]. For the purposes of this Scoping Report, it has been considered important to:

1) Identify a method to indicate the coverage of natural capital assets, allowing for interpretation as to potential ecosystem services; and

2) Identify high-value habitats and opportunities for future enhancement.

The following datasets have been utilised for the purposes of developing a natural capital baseline:

3) CORINE Land Cover 2018 – Provides a continuous coverage of land cover across the study area, allowing the quantity and spatial coverage of natural capital assets to be identified. Subsequently, assumptions can be made in regards ecosystem service provision.

4) Natural England's Habitat Networks (Combined Habitats) (England)[183] – Provides the geographic extent and location of 18 priority habitats nationally which may support biodiversity net gain and potential environmental net gains.

In addition, the following have been reviewed:

5) Natural Capital Compendium for Norfolk and Suffolk[184] - Presents information on natural assets across Norfolk and Suffolk and considers potential risks to these assets.

6) Essex Green Infrastructure Strategy[185] (includes Thurrock and Southend-on-Sea) – Describes the need for green infrastructure in Greater Essex and sets out a vision and objectives for its delivery.

7) OpenNESS case study: Mapping Cultural Ecosystem Services in Essex[186] - Investigates how cultural ecosystem services can be used in decision-making in Essex.

Whilst it is acknowledged that a 'Natural Capital Check' has been produced for Essex, this document it not publicly available and therefore has not been incorporated into the natural capital baseline for the purposes of the Transport East Transport Strategy – Integrated Sustainability Assessment.

Spatial Analysis

The CORINE inventory consists of 44 classes of land cover using a different classification system to the UK Broad Habitat Types identified in the UK National Ecosystem Assessment (NEA)[187] typically used for natural capital assessments. Nonetheless, a translation of CORINE 2018 Land Cover data classifications to UK Broad Habitat Types has been completed as presented below in Table 5.21 and Figure 5.11.

Table 5.21 UK Broad Habitat Type area and percentage cover across the study area

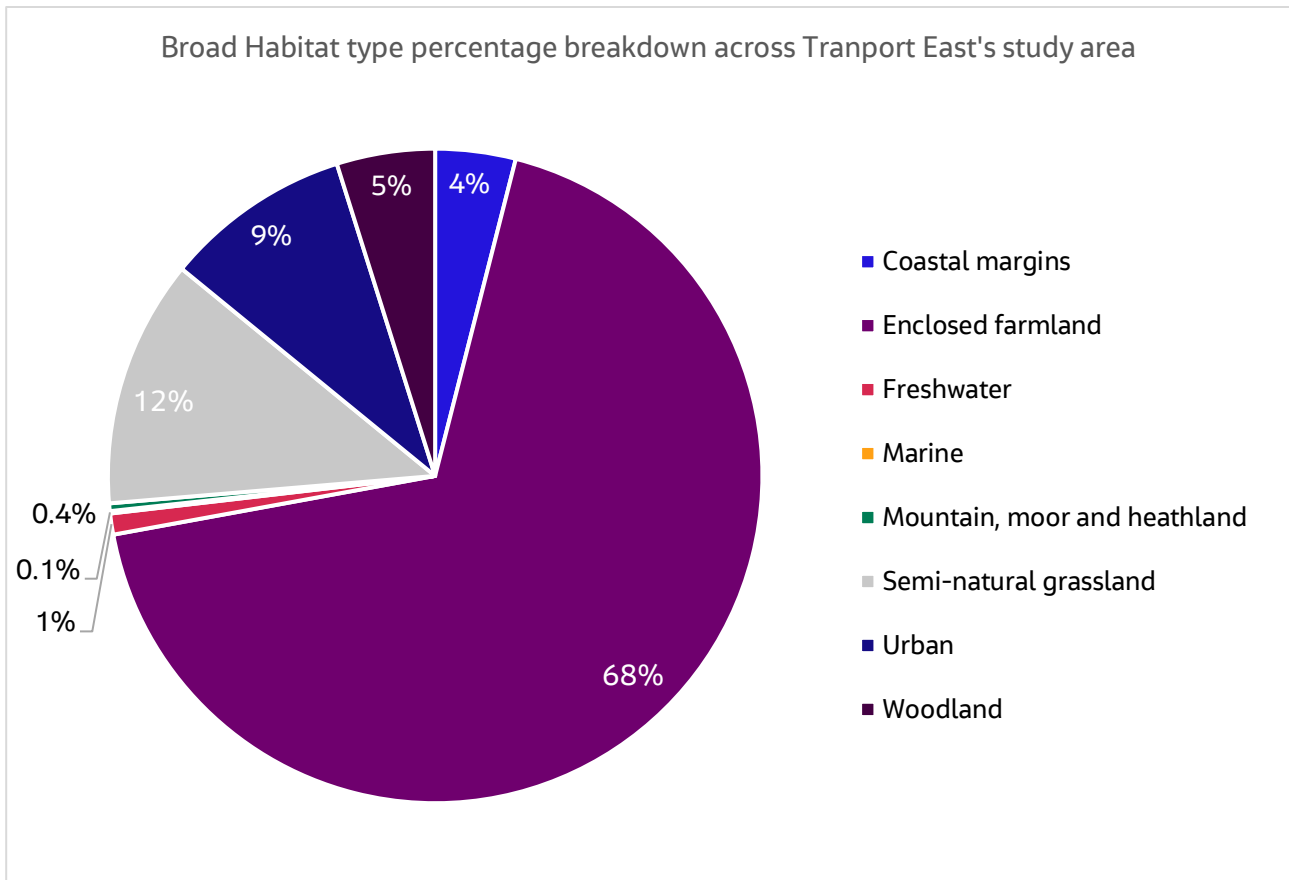| Broad Habitat Type	Area (ha)	Percentage (%)
Coastal margins	52,814	4%
Enclosed farmland	906,882	68%
Freshwater	13,832	1%
Marine	1,554	0.1%
Mountain, moor, and heathland	5,060	0.4%
Semi-natural grassland	162,931	12%
Urban	122,919	9%
Woodland	64,608	5%

Figure 5.11 Broad Habitat Type percentage across study area

Each of the UK Broad Habitat types present can provide a variety of ecosystem services as listed in Appendix D.

When assessing the benefits and values associated with natural capital and ecosystem services, a logic chain approach (as developed by Natural England[188]) can be used, as presented below in Figure 5.12. This looks at data on natural capital asset quantity, quality and location, the ecosystem services likely to be provided, the benefits and the value and benefits to society. For this baseline, an assessment of ecosystem asset **quantity** has been provided.

Figure 5.12 Natural England logic chain for assessing natural capital assets

Habitat Networks

Priority habitats, those that are most threatened and in need of conservation, across the Region (see Figure 6 – Appendix 6) comprise offering opportunities for biodiversity net gain:

1) Ancient woodland
2) Coastal
3) Lowland dry acid grassland
4) Lakes
5) Lowland calcareous grassland
6) Lowland fens
7) Lowland heathland
8) Lowland meadows
9) Purple moorgrass and rush pasture
10) Reedbeds
11) Rivers
12) Traditional orchards
13) Wood-pasture and parkland

Natural England's Habitat Networks (Individual Habitats) (England) data also presents information on habitat restoration and creation opportunities with Table 5.22 providing an overview of the restoration and creation opportunities, which include:

- **Restorable habitats:** Sites where data suggests small fragments of the primary habitat or degraded habitat exists and where restoration may be possible.

- **Network Enhancement Zone 1:** Land within close proximity to the existing habitat components that are more likely to be suitable for habitat re-creation for the particular habitat.

- **Network Enhancement Zone 2:** Land within close proximity to the existing habitat components that are unlikely to be suitable for habitat re-creation but where other types of habitat may be created, or land management may be enhanced including delivery of suitable Green Infrastructure.

- **Fragmentation Action Zone:** Land immediately adjoining existing habitat patches that are small or have excessive edge to area ratio where habitat creation is likely to help reduce the effects of habitat fragmentation.

- **Network Expansion Zone:** Land within relatively close proximity to the Network Enhancement Zones 1 & 2 that are more likely to be suitable for habitat creation for the particular habitat and identifying possible locations for connecting and linking up networks across a landscape and identifying possible locations for connecting and linking up networks across a landscape.

Table 5.22 Restoration and creation opportunity area by habitat type within the Transport East study area

Habitat	Restorable Habitat (ha)	Network Enhancement Zone 1 (ha)	Network Enhancement Zone 2 (ha)	Fragmentation Action Zone (ha)	Network Expansion Zone (ha)	Total
Ancient Woodland	2,148	-	50,932	527	-	53,607
Coastal	27,403	16,662	20,573	3,210	12,940	80,788
Lowland dry acid grassland	935	9,587	5,819	2,304	34,494	53,139
Lakes	2,370	-	43,868	80	-	46,318
Lowland calcareous grassland	345	6,545	5,227	498	28,431	41,046
Lowland fens	15,564	21,271	36,133	5,271	50,994	129,233
Lowland heathland	600	12,793	7,272	3,799	44,699	69,163
Lowland meadows	7,601	22,540	6,616	1,274	77,276	115,307
Purple moorgrass and rush pasture	35	5,752	3,635	1,083	31,225	41,730
Reedbeds	17,144	32,173	5,190	3,771	40,650	98,928
Rivers	1,517	-	14,205	5	-	15,727
Traditional orchards	1,150	39,576	2,255	-	-	42,981
Wood-pasture & parkland	4,011	8,217	745	160	25,505	38,638
Total	78,675	175,116	151,538	21,455	346,214	-

Table 5.22 displays that the largest opportunities for creation and restoration include lowland meadow and lowland fens. For network expansion, d ancient woodland and lakes, where habitat re-creation is unlikely but where other types of habitat may be created, or land management may be enhanced.

Enhancing priority habitats can also provide carbon sequestration opportunities.

Key trends

Key trends are presented in Table 5.23 below.

Table 5.23 Natural assets, features, key trends, and risks across the Transport East study area

Asset	Feature	Key trends	Risks
Land	Food producing land	• More of the best food-producing land grades than English average in Norfolk and Suffolk (25.5% Grades 1&2 and 53.8% Grade 3). • 61% of Essex graded agricultural land.	Growing risk: Reducing water availability impacting food production. Risk to productivity from climate change, poor management and pollution.
	Productive woodland	• The Brecks has 27.6% forest cover. • Provides recreation, as well as timber and energy from waste wood.	Growing risk: Risk from pests, pathogens, invasive species, and climate change induced extreme weather events.
	Land under conservation management	• Sites designated for nature conservation cover 10% of Norfolk and Suffolk's land. • Multiple designations across the counties. • Broad scatter of smaller sites that form island sanctuaries in agricultural landscapes also important to enable species to migrate across the landscape.	Growing risk: Risk to species and habitats from climate change, urbanisation and salinisation.
	Carbon density in vegetation	• Woodland, heaths, and freshwater margins have the highest rates of carbon storage in the counties. • Due to the land area under agriculture, the total amount of carbon stored by farmland is greater than all other land uses combined in Norfolk and Suffolk.	Growing risk: Fire risk and drought impact on carbon stored.
Soil and Sub-Surface	Soil physical properties	• High soil loss by water erosion (16t/ha/yr) in North Norfolk and other smaller areas across the counties.	Growing risk: Climate Change with drier summers increasing wind erosion, soil shrinkage etc.
	Soil biological health	• Soil bacteria diversity is relatively uniform across natural habitats and cultivated land, whilst soil invertebrate abundance is highest in freshwater margins and less disturbed habitats.	Growing risk: Intensive agriculture caused arable soils to lose organic carbon, climate change could exacerbate organic matter decomposition.
	Aquifers	• Around 90% of Norfolk and Suffolk is underlain by aquifers of high/medium productivity. • More prevalent areas are The Brecks and Suffolk Coat AONB.	High risk: Increasing demand and over abstraction, increasing saline intrusion.
	Fenland/wetland soils	• Drainage for agricultural production has led to considerable shrinkage and loss.	High risk: Climate change causing drying out of peatlands, reducing habitat extent and quality, risking natural carbon stores and increased emissions.

Asset	Feature	Key trends	Risks
Habitats and Species	Priority habitats	• Coastal saltmarsh, peatlands, and heathland habitats are regionally important.	High risk: Climate change, loss of habitat to sea level rise, coastal erosion, flooding, increased incidence of pests and diseases, invasive species, urbanisation.
	Extent and condition of SSSIs	• Norfolk has 8.2% of land within a SSSI and Suffolk has 7.5%.	Medium risk: Degradation through lack/reduced frequency of monitoring and appropriate management.
	Habitat connectivity	• More than 75% of priority habitats are in patches under 10ha in size and connectivity needs to be improved.	Growing risk: Due to increasing development and urbanisation
	Natural woodlands	• Very little ancient woodland (0.8%) in Norfolk and Suffolk. 5.1% is broadleaf and mixed woodland. • Woodland cover of Greater Essex is 5.3% (195km²) of total land area, of which 3.5 % (128km²) is defined as ancient woodlands over 2 hectares in size, of which 73km² is Ancient Semi Natural Woodlands (ASNW).	Growing risk: Impacts of climate change, frequency of droughts and storms events, pressures from pest and pathogens.
	Lowland heath and dry acid grasslands	• 4,711ha of lowland heath, 8.4% of England's total holding of this habitat in Norfolk and Suffolk. • 4,203ha of dry acid grasslands, 27.7% of England's total holding of this habitat in Norfolk and Suffolk.	Growing risk: Pollution, climate change, seasonal fires and change in precipitation levels.
	Saltmarsh and coastal habitats	• Norfolk and Suffolk's coasts hold over 12% of England's total Saltmarshes and over 17% of vegetated shingle habitat.	High risk: Coastal erosion, sea level rise, invasive species, and nutrient enrichment.
	Wetlands and grazing marsh	• Lowland fen within Norfolk and Suffolk, accounts for 19.4% of England's total holding and reedbeds account or 45.8%.	High risk: Wetland drying out, eutrophication, oxidation of peat, reducing habitat extent and quality.
Freshwater	Surface water quality	• Very few water bodies meet 'good' status, largely due to ecological shortcomings in Norfolk and Suffolk.	High risk: Risk to clean water provision due to increasing demand and pollution from agriculture and urban areas.

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Asset	Feature	Key trends	Risks
	Ground water quality	• Overall 'poor' ground water status of virtually the whole of Norfolk and Suffolk.	Growing risk: Reduction in groundwater quality due to over abstraction, pollution and saline intrusion due to sea level rise.
	Water availability	• Driest region in the UK, with projections indicating a regional net deficit of around 200Ml/d by 2050.	High risk: Projected deficit in future supply over demand, climate change may further impact.
	Flood risk	• Over 11% of Norfolk and Suffolk is rated by the Environment Agency as having at least a 1 in 100 flooding risk in any given year.	Medium risk: Due to urban expansion and surface water flooding from impermeable surfaces. More intense rainfall due to climate change.
	Chalk rivers	• Norfolk and Suffolk have 565km of chalk river, nearly 17% of England's total and hosts many distinctive species. • Threats to these rivers include pollution, abstraction, sedimentation, and invasive species	Growing risk: Biodiversity loss due to pollution and invasive species.
	Recreational use of waterways	• Recreation within the Broads generated over £600 million in 2017. • Managing visitor and wildlife needs is an ongoing challenge.	Medium risk: Deterioration of water quality could have implications for recreational opportunities.
Coast and Marine	Marine habitats and protected areas	• Over 90% of inshore/coastal marine habitats in Norfolk and Suffolk falls within Marine Protected Areas.	Growing risk: Invasive species, marine litter, underwater noise, and water quality.
	Fish stocks	• Economic uncertainty regarding future of commercial fishing in the region due to regulation and sustainability of fish stocks from environmental pressures.	Medium risk: Increase in ocean temperature due to global warming.
	Seabird and migratory birds	• North Norfolk particularly important for migration and provides winter refuge for large flocks of waders/wildfowl. Summer breeding of terns and other seabirds, wildfowl and wafers along the coast. • Good Ecological Status (GES) is not being achieved for most birds.	Medium risk: Reasons for not achieving GES need to be investigated. Wind turbine collisions.
	Recreation	• Coast attracts nearly 12 million day visits and total visitor spend of around £330m in Norfolk and Suffolk.	Medium risk: Sea level rise and loss of natural assets.
Atmosphere	Air quality - particles	• PM2.5 levels in much of Norfolk and Suffolk, above the average for England.	Medium risk: Health and environment impacts from particles with increasing urbanisation. Transition to electric vehicles should help to mitigate this.

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Asset	Feature	Key trends	Risks
	Greenhouse gas emissions	• Norfolk and Suffolk have higher per capita emissions (5.6 t/pp/yr) than the average for England (5.0t/pp/yr). • Point-source emitters produce approximately one quarter of CO_2 emission in the two counties (2,088,303 tCO_2e).	High risk: Greenhouse gases have induced global warming.

In addition to the specific risks to natural assets highlighted in Table 5.23, the document review identified drivers and pressures affecting the ability of natural capital assets to deliver ecosystem services:

- Changing climate: Mean summer and winter temperatures increasing, with projections for a further increase in summer temperatures of 1.2-1.6ºC by the 2040s.

- Environmental change – precipitation: Future projections suggest a decrease in mean summer precipitation and an increase in mean winter precipitation in the Region. Rainfall intensity is expected to increase, with implications for runoff, flooding and loss of soils.

- Environmental change – sea level rise: Local sea level rise projections show an increase in sea level between 2007 and 2100 e.g. projections for Great Yarmouth indicate a 0.2-0.4m rise by mid-century and potentially 0.6-1m+ by 2100.

- Social change: Population expected to increase with an increased proportion of elderly and further urbanisation.

- Economic setting: funding and resourcing are needed to deliver new or manage and maintain existing green infrastructure.

Issues and opportunities

Opportunities and issues associated with transport projects/schemes have been considered for each of the ecosystem services identified in Appendix D and incorporated with the relevant topic and ISA objectives.

5.17 Interaction between topics

There is potential for interaction between ISA topics which will need further consideration during the assessment stage and in particular to consider potential cumulative and in combination effects. Table 5.24 identifies the potential inter-related topics.

Table 5.24 Interactions between topics

	Population and Socioeconomics	Equality and Diversity	Health	Community Safety	Biodiversity	Water Environment	Air Quality	Noise and Vibration	Climatic Factors	Landscape/ Townscape and Visual	Cultural Heritage and Archaeology	Soils, Geology and Contaminated Land	Material Assets and Resources	Natural Capital and Ecosystem Services
Population and Socioeconomics														
Equality and Diversity	X													
Health	X	X												
Community Safety	X	X	X											
Biodiversity	X		X											
Water Environment	X		X		X									
Air Quality	X	X	X		X									
Noise and Vibration	X	X	X		X									
Climatic Factors	X	X	X		X	X	X							
Landscape/Townscape and Visual	X	X	X	X	X	X		X	X					
Cultural Heritage and Archaeology	X		X			X	X		X	X				
Soils, Geology and Contaminated Land			X		X	X		X		X	X			
Material Assets and Resources	X	X	X	X		X	X	X	X	X	X	X		

	Population and Socioeconomics	Equality and Diversity	Health	Community Safety	Biodiversity	Water Environment	Air Quality	Noise and Vibration	Climatic Factors	Landscape/ Townscape and Visual	Cultural Heritage and Archaeology	Soils, Geology and Contaminated Land	Material Assets and Resources	Natural Capital and Ecosystem Services
Natural Capital and Ecosystem Services	■	■	■		■	■	■	■	■	■	■	■	■	

5.18   Scope of Assessment

The information collated in the baseline review has been used to establish the scope of the ISA as outlined in Table 5.25.

Table 5.25 Summary of key issues and opportunities with the topic scope for the ISA

ISA Topic	Key Issues and opportunities	Scope
Population and Socioeconomics	- Population growth across all age groups will place pressure on the transport network, housing availability, amenities, education and health facilities. - Distribution of economic opportunities supporting livelihoods. - COVID-19 has changed work habits as the need to access workplaces is reduced. This may place different demands on transport services for example changes to commuting are long term and more people travel into urban centres for leisure and social interaction. - COVID-19 is envisaged to increase staycations in the short term but medium and long term trends need to be considered	A key theme of the strategy is improving rural and urban connectivity, which is relevant to population and socioeconomics. **Scoped into the ISA.**
Equality and Diversity	Assessments of the Index of Multiple Deprivation highlight economic disparities between rural area, conurbations and coastal communities.	Equality and diversity strongly relate with the concept of 'levelling up' introduced by the UK government in 2020, and a key component of the Transport Strategy. **Scoped into the ISA.**

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ISA Topic	Key Issues and opportunities	Scope
Health	▪ Public health is generally good, Access to health facilities and support long term illness Disability and illness and access to ▪ There are adverse health effects related to other ISA topics such as Air Quality and Noise	The strategy has the potential to influence the health of the region's population. **Scoped into the ISA.**
Community Safety	▪ Aims to reduce accidents and casualties due to traffic. ▪ Road safety and road fatalities on rural roads (which in comparison carry lower traffic). ▪ Safety for active travel and leisure ▪ Increasing crime levels on public transport particularly towards women, disabled and those from ethnic minority groups.	The Transport Strategy has the potential to impact community safety. **Scoped into the ISA..**
Biodiversity	▪ Direct loss or disturbance of habitats and associated species due to new infrastructure required by the strategy. Requirements for no net loss will be in place ▪ Designated sites (which may already be under pressure from recreational access and disturbance, pollution, agriculture and climate changes) may be affected due to improved accessibility as a result of the strategy. ▪ Opportunities for enhancement of biodiversity, through habitat provision, connectivity improvement and management to improve condition and reduced pollution.	Potential infrastructure construction and traffic levels have the potential for loss or disturbance to habitats of species. **Scoped into the ISA.** HRA is to be undertaken for potential effects on International designations
Water Environment	▪ Additional infrastructure has the potential to affect drainage or require river crossings and affect waterbodies. ▪ Potential to affect areas of high flood risk	The region includes sources of water supply and areas of high flood risk and water dependent habitats which could be affected by proposals in the Transport Strategy. **Scoped into the ISA.**
Air Quality	▪ Transport is a significant contributor to poor air quality with resultant adverse effects on . human and ecosystem . ▪ Improvement to air quality from changes ot traffic and modeal shift and technology change	In the absence of transport modelling, a qualitative assessment of air quality would be undertaken. **Scoped into the ISA.**

ISA Topic	Key Issues and opportunities	Scope
Noise and Vibration	▪ Increased traffic and new infrastructure generally leads to increased noise with adverse health and amenity effects.	In the absence of transport modelling, a qualitative assessment of noise would be undertaken. **Scoped into the ISA.**
Climatic Factors	▪ Climate change suggest more extreme weather with the potential to adversely affect transport infrastructure, human health, agriculture and biodiversity. ▪ Opportunities exist for the Transport Strategy to reduce carbon accounting. ▪	In the absence of transport modelling, a qualitative assessment of noise would be undertaken. **Scoped into the ISA.**
Landscape/Townscape and Visual	▪ Improved accessibility may negatively affect landscape value. ▪ There is the potential for nationally designated landscape and recreation areas such as AONBs; National Trails; National Parks; coastal heritage and local landscape and townscape character to be affected by transport proposals.	**Scoped into the ISA.**
Cultural Heritage and Archaeology	▪ Cultural heritage, historic landscapes and archaeological and paleo-archaeological interests may be affected by the strategy through direct effects such as loss or setting changes or changes to access or hydrology changes.	**Scoped into the ISA.**
Soils, Geology and Contaminated Land	▪ Geological SSSIs occurring across the Region could be affected by infrastructure proposals. ▪ Soils such as peat and fenland soils are important for carbon and measures to mitigate climate change impacts	**Scoped into the ISA.**
Material Assets and Resources	Existing infrastructure and land use could be affected by transport infrastructure proposals with construction materials and waste being generated by new schemes.	**Scoped into the ISA.**
Natural Capital and Ecosystems Services	Potential impacts on natural capital and ecosystem services.	Quantitative and monetisation approaches are scoped out due to limited spatial information available for strategy proposals.

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ISA Topic	Key Issues and opportunities	Scope
		Scoped into the ISA.

6.   Proposed ISA Methodology

6.1   Draft ISA Objectives

The ISA will be an objective based assessment. The ISA objectives were developed to cover the broad ISA topics following the comprehensive review of relevant PPS and the baseline context. These reviews are also reflected in the criteria and questions that will be used as a framework for the development and assessment of the draft Transport Strategy. This assessment framework is set out in Table 6.1

Table 6.1 ISA Objectives and Assessment Framework

ISA Topic	ISA Objectives	Criteria/questions for assessment of Transport Strategy Interventions
Population and Socioeconomics	Support local economic development and accessibility to economic opportunities, employment and community facilities	- Affect quality of life in terms of improved access to transport to jobs, schools, shops and other community facilities? - Avoid creation of barriers to access from linear infrastructure? - Reduce journey times for commuting? - Improve quality of travel and access to information? - Support local economic development for employment and community facilities? - Support employment and training opportunities? - Support access for tourism and recreation - Support in relation to changes resulting from effects of COVID/Brexit on the economy and transport
Equality and Diversity	Support and promote improved access for all	- Improve access for rural populations and towns outside main growth areas dependent on public transport? - Support improved services for transport deserts - Improve physical access for all the elderly and young and mobility impaired people? - Reduced community severance effects from linear infrastructure - Improved affordability of transport
Health	Protect and enhance health and well being	Is there potential to: - Improve accessibility to services, facilities and amenities for all - Improved opportunities and access for active travel and raise public awareness of active travel - Reduce congestion, noise and air quality impacts from transport - Improve access to greenspace, blue space and opportunities for physical activity

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ISA Topic	ISA Objectives	Criteria/questions for assessment of Transport Strategy Interventions
Community Safety	Support and promote community safety	Is there potential to: ■ Improve road user safety and reduce risk of accidents/incidents ■ Improve actual and perceived safety and security for users of public transport
Biodiversity	Protect and enhance biodiversity Protect and enhance International and European (HRA) sites	Is there potential adverse effects on or improvements to: ■ European; (Natura 2000) or species protected in Annex II and IV of Habitats Directive and Annex I of Birds Directive? ■ Nationally designated sites NNR/SSSI or protected species ■ Local, county biodiversity including Biodiversity Strategy objectives ■ Wildlife corridors or connectivity
Water Environment	Protect and enhance water resources and water quality and contribute to reduction in flood risk and disruption from flood events	Is there potential for: ■ Conflict with RMBP measures /WFD objectives ■ Is there a potential to increase flood risk?
Air Quality	Contribute to the mitigation of air pollution issues from transport and optimize potential for reduction in air pollution	Is there potential to: ■ contribute to improvements to air quality or to increase air pollution? ■ Is there potential to contribute to air pollution reduction affecting sensitive habitats
Noise and Vibration	Contribute to mitigation of noise pollution as a result of transport and optimize potential for reducing noise/vibration	Is there potential to: ■ reduce or increase the number of people exposed to high levels of transport related noise? ■ Will areas of high tranquility be affected by increased disturbance or is there potential to increase tranquil areas?
Climatic Factors	Climate change mitigation: Contribute to achieving net zero carbon targets by reducing greenhouse gas emissions from construction of new/upgraded transport infrastructure or operation of existing and new transport networks, modal shift changes or new technologies.	Is there potential for: ■ Will proposals contribute to reducing carbon emissions? ■ Increased vulnerability or improved resilience of the environment and transport and other strategic infrastructure to climate change? (Note flood risk increase addressed under water environment topic)

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ISA Topic	ISA Objectives	Criteria/questions for assessment of Transport Strategy Interventions
	Climate change adaptation: improve resilience to climate change for the transport network and promote improved environmental resilience to climate change.	
Landscape/ Townscape and Visual	Protect and enhance the character and diversity of the landscape/townscape and minimise adverse visual effects on sensitive, designated landscapes and public views	Is there potential to ▪ Impact or contribute to improvement to designated or sensitive landscapes including, rural landscapes, townscapes and coastal views or affect visual amenity
Cultural Heritage and Archaeology	Protect cultural heritage and archaeological assets and contribute to improved access to cultural heritage sites	Is there potential to: ▪ Cause direct loss or damage to or detract from the setting of designated cultural heritage assets and historic landscapes or to archaeological interest (including coastal / marine based archaeology, old bridges and railway corridors and undiscovered archaeology) ▪ Potential to improve access to cultural heritage sites
Soils, Geology and Contaminated Land	Avoid conflicts with geological sites of value. Minimise loss of soil resources and contribute towards the appropriate management of soil resources and quality.	Would there be any effects on: ▪ Designated geological sites, valuable soils or potential for pollution from contaminated land sites? ▪ Would peat and wetland soils be at risk?
Material Assets and Resources	Promote the sustainable use of natural resources including land, encourage reuse, recycling and waste minimization and effective use of existing infrastructure.	Is there potential for: ▪ Conflicts with critical infrastructure, or does the strategy conflict with existing and planned land use or valuable agricultural land? Does the strategy encourage: ▪ Reuse of existing transport infrastructure and/or brownfield sites? ▪ Transition to renewable energy for transport
Natural Capital and Ecosystems Services	Protect natural capital and associated ecosystem services, whilst seeking to provide opportunities for enhancement	▪ Is the strategy likely to result in change to natural capital and associated ecosystem services and is there scope for contributing to future requirements for biodiversity and environmental net gain to be accommodated with in option/strategy implementation? ▪ Will there be severance or loss of connectivity or opportunity to improve connectivity.

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6.2   Assessment Approach

The assessment of the draft Transport Strategy will be applied through the following stages:

- Stage 1: Assessment of Transport Strategy Transport outcomes and scenarios to consider compatibility or conflict with ISA objectives

- Stage 2: Assessment of generic types of options and then all options/interventions under consideration to meet Transport Strategy objectives as part of a screening/sifting and multi-criteria analysis

- Stage 3: Assessment of packages and priorities including alternative approaches for each scenario for the Transport Strategy including a without strategy/ do minimal approach

- Stage 4: Assessment of the preferred approach for the draft Transport Strategy and Investment and Delivery Plan (IDP) and cumulative /in combination effects within strategy proposals and with other plans and programmes.

The approach is expected to be iterative so that potential issues can be identified and responded to develop a best overall strategy approach which will be tested against a range of scenarios.

Stage 1 Transport objectives and scenarios

A cross comparison of the high-level Transport Outcomes with the ISA objectives will be undertaken to identify where objectives are supportive or where there is potential for conflict.

A high-level assessment of the potential transport scenarios will be undertaken to identify which would be the most supportive for the ISA objectives and to add to the identification of the preferred scenarios for the Transport Strategy to support. The scenarios considered are identified in Chapter 2 and include the economic, spatial and workplace scenarios.

The scenarios are recognized to be influenced by external factors and the assessment will also consider potential issues as part of sensitivity testing and measures to be taken to support resilience in contributing ISA objectives.

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Table 6.2 Assessment against ISA Objectives for transport strategy scenarios and objectives

Description of Effect/Risk	Assessment against objectives
The transport strategy scenario or objective has potential for contribute significant positive effect on the ISA receptors associated with this or contribute to achieving the objective.	**+**
The transport strategy scenario or objective has potential for neutral or significant positive effects on the environmental receptors associated with this objective depending on how the policy or objective is delivered.	**0/+**
The transport strategy scenario or objective has potential for mixed significant positive & negative effects on the environmental receptors associated with this objective.	**+/-**
The transport strategy scenario or objective has potential for neutral effect on the environmental receptors associated with this objective.	**0**
The transport strategy scenario or objective has potential for neutral or significant negative effects on the environmental receptors or conflicts with the ISA objective depending on how the policy or objective is delivered.	**0/-**
The transport strategy scenario or objective has potential for significant negative effect on the environmental receptors or conflicts with the ISA objective.	**-**
The transport strategy scenario or objective effects are uncertain/there is insufficient information on which to determine effect on potential environmental receptors associated with this objective at this stage.	**?**

Stage 2 Assessment of potential interventions

Over 70 potential Transport Strategy interventions/options have been identified supporting the four transport strategy themes. These cover a range of categories such as:

- Planning or policy interventions

- Request for powers or decision-making ability

- Initiative or scheme - an initiative may be aimed at supporting or influencing change and a scheme involving physical works such as railway electrification or improving road connections. Some may involve packages of actions such as provision of cycleways and measures to support active travel.

The main types of intervention under consideration are presented in Table 6.3.

Table 6.3 Types of Interventions for the Transport Strategy

Types of interventions	
Active travel - infrastructure provision and behaviour change support	Roll out and expansion of local authorities' walking and cycling programmes
	Pedestrian and cycle crossings and on road links
	River crossings

Types of interventions	
Bus and passenger transport operations	Bus priority infrastructure supporting immediate operational challenges aligned to COVID-19 Rapid transit schemes
Port and airports	Measures supporting the connectivity, accessibility and operation of International Gateways
Rail related measures	Electrification schemes Line capacity improvement/journey time/enhancement Rail connection improvements Station improvements Freight capacity study Connectivity gap studies for rail timetables
Road related measures	Infrastructure to support electric vehicles and alternative fuels Demand management strategies New links or bypasses Road widening or dualling Junction/interchange new/ upgrades Road improvement strategic packages
Digital technology	Digital infrastructure to optimise transport, incentivising public transport & active modes and substituting trips
Studies and action plans	Supporting the implementation of schemes associated with the Transport Strategy

A challenge for the assessment is the different levels of maturity of potential interventions; from early-stage concepts or policy type measures to schemes undergoing business case development or those that have been subject to design and a level of assessment and are ready for funding approval. The assessment will provide a consistent approach across all the interventions so that early-stage options can be considered fairly against more developed options. The level of uncertainty in the assessment will be captured for each option.

Initial sift

The interventions/options are subject to an initial sift to identify critical conflicts with Transport Strategy objectives and the ISA objectives where interventions would be screened out where

issues considered likely to be unacceptable and with limited scope for mitigation. Where an intervention is rejected the reasons for not taking the option forward further is recorded.

Assessment of shortlisted Interventions

The remaining interventions will be subject to a multicriteria analysis including criteria aligned with the ISA objectives.

Performance against the ISA objectives will be inform how the interventions are selected to be included in the Transport Strategy along-side the transport outcome and critical success criteria (such as deliverability and cost).

For interventions taken forward, ISA assessment summaries will record the assessment against objectives using a matrix based approach with the nature of effects (temporary short term or long term, permanent), significance of effects or risk level and uncertainty in assessment outcomes recorded as indicated in Table 6.4. The assessment takes into account the value/sensitivity of potentially affected receptors, as well as the magnitude of the impacts anticipated. Mitigation recommendations to avoid adverse effects and secure beneficial effects will be identified. The assessment will consider performance against ISA objectives both without and then with additional mitigation.

In many cases intervention descriptions will be very high level and may need to be grouped as types of measures reflecting lack of information on location or design. Where potential corridors for schemes are identified these will be assessed in terms of corridor sensitivity and risk of impacts.

Table 6.4 Assessment against ISA Objectives for Transport Strategy Interventions

Description of Effects/Risks	Scale of Effect
Major benefits / contribution to meeting ISA objectives (widespread/large scale)	+++
Moderate benefits /contribution to meeting ISA objectives	++
Minor benefits /contribution to meeting ISA objectives (local and small scale)	+ or 0/+
Neutral or not applicable	0
Minor adverse effects or potential conflicts with ISA objectives (local and small scale)	- or 0/-
Moderate adverse effects or potential conflicts with ISA objectives	--
Major adverse effects or potential conflicts with ISA objectives (widespread / large scale)	---
Mixed positive and negative	-/+
Uncertain	?

Stage 3 Assessment of Strategy Alternatives and selection of Preferred Approach

The SEA Directive requires the SEA process to identify and describe "*reasonable alternative*" means of achieving the objectives of the Strategy. It states under Article 5(1) that;

"Where an environmental assessment is required under Article 3(1), an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated."

Reasons for selecting (a) the alternatives and (b) the preferred strategy proposals must be documented, together with a description of how the assessment of alternatives was undertaken.

The strategy proposals will be assessed against a 'no strategy' scenario for comparison. The no strategy scenario will represent a continuation of the current approach and evolution of the baseline without out the Transport Strategy proposals.

The "*Within Strategy*" and "*Whole Strategy*" alternatives will be assessed against the ISA objectives and clear justification for the selection of the preferred approach for the Transport Strategy will be provided.

Stage 4 Assessment of Preferred Strategy approach and Cumulative Effects

The Preferred Strategy will be assessed as a whole in terms of how this performs against the ISA objectives and mitigation measures required and this will include a cumulative effects assessment.

Cumulative effects can be described as the addition of many small impacts to create one larger, more significant, impact. They can be either:

1. Additive effects: the addition of many minor or significant effects to create larger, more significant effects. Therefore, effects that arise, for instance, where several developments (such as multiple options) each have insignificant effects but together have a significant effect; or where several individual effects of the Strategy (for example air quality, recreation access and health) have a combined effect (in-combination effects).

2. Synergistic effects: "*Where the resultant effect is of greater significance than the sum of its constituents*." Synergistic effects often happen as habitats, resources or human communities get close to capacity. For instance, a wildlife habitat can become progressively fragmented with limited effects on a particular species until the last fragmentation makes the areas too small to support the species.

Both intra-strategy and inter-strategy cumulative effects will be considered for the Transport Strategy proposals:

1. Intra-strategy cumulative effects - these arise from the interactions between different types of environmental and social effects resulting from a plan, programme. The interrelationships between environmental and social components that help determine these effects are identified such as interrelationships between: human health and air quality; human health and water quality; air quality and vegetation; human health and flood risk; and ecology and water quality.

2. Intra-strategy cumulative effects will be considered for the draft Transport Strategy. For example, the assessment against ISA objective for Health considers impacts associated

with changes in air and noise pollutant levels, access to recreational facilities, impacts other essential infrastructure and visual impacts associated with new infrastructure construction.

3. Inter-Strategy cumulative effects - these arise when the effects of the implementation of one Strategy occur in combination with those of other plans, programmes, projects, etc. Inter-strategy cumulative effects will be assessed in terms of having a likely positive effect or likely negative effect in relation to the ISA objectives based on professional judgment.

4. Where potential for cumulative effects are identified, mitigation measures will be included in the ISA recommendations and will be covered in the monitoring requirements.

6.3   Key Assumptions and Limitations

Assumptions

The assessment of the effects from the implementation of measures under each element of Preferred Strategy will be based on technical judgement and knowledge of similar measures or schemes. The assessment takes the procedures or legislative protection identified below into account in the assessment and standard good practice measures are expected to be applied including:

Studies and Surveys

- Feasibility and scheme option studies aimed at avoiding adverse effects on designated sites and protected structures following DMRB and TAG requirements.

- Studies, surveys and consultation on environmental and social effects of development proposed under the strategy and associated IDP

Standard good practice approaches are applied to design and construction

- Alignment/siting of new or improved infrastructure applying hierarchy of avoid, minimize, mitigate and compensate to keep adverse impacts to a minimum

- Identification of relevant mitigation expected to support consenting and licensing requirements

- Application of good practice approaches to construction and pollution management including appropriate supervision and control.

Operational management

- Measures to meet legal obligations during operational management of transport infrastructure or supporting measures, such as precautions for pollution prevention, safety during maintenance activities or meeting licensing requirements for protected species.

High level mitigation requirements additional to these standard expected measures will be identified through the ISA assessment process.

Limitations

Key limitations for the assessment will be the high-level nature of the information available or definition of the intervention and uncertainty over their associated components, designs and locations. The specific limitations will be recorded in the assessment matrices and will be described further in the ISA report.

6.4   Proposed structure for the ISA Report

Table 6.5 sets out the proposed structure for the ISA Report to be provided to set out the assessment undertaken on the draft Transport Strategy. The ISA Report will summarise how the findings of the ISA have been taken into account in the development of the Transport Strategy, how alternatives have been considered; provide an assessment of effects for the selected approach and recommendations for mitigation and monitoring.

Table 6.5 ISA Report Structure

ISA Non-Technical Summary (NTS)
ISA Report
Chapter 1: Introduction and Background – ISA process
Chapter 2: Draft Transport Strategy proposals
Chapter 3: Policy Context
Chapter 4: Consultation (including summary of consultation response to scoping report and wider engagement)
Chapter 5: Summary of baseline and issues
Chapter 6: Assessment Methodology
Chapter 7: Assessment of interventions and strategy alternatives
Chapter 8: Assessment of preferred Strategy and Cumulative Effects assessment - within strategy and with other plans and programmes
Chapter 9: ISA recommendations - Mitigation and Monitoring Plans
Chapter 10: Next Steps
Appendices to include:
- Scoping Consultation summary
- PPS review
- Baseline information
- Assessment matrices
- Additional supporting information

7.   Next Steps

This Scoping Report is issued for consultation for a 5 week period. Questions as a guide for this consultation are listed below and all comments are welcomed

Following this consultation, all responses will be considered and taken into account in the ISA approach for the draft Transport Strategy. A summary of the consultation comments and response will be provided in the ISA report.

The next stage will be the assessment of developing strategy and reporting on this through the ISA and draft HRA reports which will be published alongside the draft Transport Strategy for public consultation for period of 12 weeks.

Suggested questions for the scoping report consultation:

1. Do you have any suggestions that you would like Transport East to consider in the preparation of the Transport Strategy?

2. Do you have any comments on the approach to the Integrated Sustainability Appraisal?

3. Are there any plans, policies, strategies or and programmes not identified in Chapter 4 or Appendix B that should be considered including plans or programmes to be considered for the cumulative impacts assessment?

4. Do you have any comments on the current baseline environment conditions and future trends described in Chapter 5 or the issues summarized in Table 5.25?

5. Do you have any comments on the ISA approach to considering strategy alternatives and cumulative assessment?

6. Any other comments on the Scoping Report?

Glossary

Term	Definition
Integrated Sustainability Appraisal	Combined environmental social and economic assessments
Assessment	An umbrella term for description, analysis, and evaluation.
Air Quality Management Area (AQMA)	A non-permanent designation created if monitoring reveals that statutory air quality thresholds are being exceeded or will be exceeded in the near future.
Baseline	The existing conditions which form the basis of the environmental assessment
Bedrock	Hard rock that lies beneath a superficial cover of soils and sediments.
Biodiversity	Biological diversity, or richness of living organisms present in representative communities and populations.
Catchment	The area contributing flow to a point on a drainage system.
Community	Assemblage of interacting populations that occupy a given area or region.
Conservation	Preservation or restoration of the natural environment and wildlife.
Ecosystem	A biological community of organisms interacting with one another and their physical environment.
Ecosystem Services	The direct and indirect benefits provided by natural capital stocks/ assets.
Effect	The result of change on specific environmental resources or receptors.
Environmental Net Gain	Refers to taking steps to mitigate the high potential impact of infrastructure projects on natural capital, leaving the environment in a measurably better state compared to the pre-development baseline.
Habitat	Term most accurately meaning the place in which a species lives, but also used to describe plant communities or agglomerations of plant communities
Habitat Regulations Appraisal	Under the Habitats Regulations, all competent authorities must consider whether any plan or project will have a 'likely significant effect' on a European site. If so, they must carry out carry out an 'appropriate assessment' (AA). This is known as Habitats Regulations Appraisal (HRA).
Landscape	Human perception of the land, conditioned by knowledge and identity with a place or setting.

Term	Definition
Lower Layer Super Output Areas	A geographic hierarchy designed to improve the reporting of small area statistics in England and Wales.
Mitigation	Measure to avoid, reduce or offset potential adverse impacts.
Natural Capital	Natural Capital is classified as the world's stock of natural resources, which includes geology, soils, air, water and living organisms.
River Basin District	The area of land and sea, made up of one or more river basins, together with the associated groundwater and coastal waters, identified by the Water Framework Directive as the main unit for the management of river basins.
Scoping Report	The purpose of a scoping stage is to describe the environmental context, by establishing the relevant baseline information, reviewing other relevant PPS and identifying environmental problems and opportunities. Scoping Reports also provide a proposed methodology to be used for assessing potential environmental effects.
Sites of Special Scientific Interest (SSSI)	Designated areas of national importance. The aim of the SSSI network is to maintain an adequate representation of all natural and semi-natural habitats and native species in the UK. The site network is protected under the provisions of Sections 28 and 19 of the Wildlife and Countryside Act 1981 as well as the Amendment Act 1985 and the Environmental Protection Act 1990.
Soft Estate	refers to the environment (inclusive of natural habitats) which line transport infrastructure.
Special Area of Conservation (SAC)	An area designated under the EC Habitats Directive to ensure that rare, endangered or vulnerable habitats or species of community interest are either maintained at or restored to a favourable conservation status.
Special Protection Area (SPA)	An area designated under the Wild Birds Directive (Directive74/409/EEC) to protect important bird habitats.
Source Protection Zone (SPZ)	Protection areas around public water supply sources
Strategic Environmental Assessment	The process by which information about the environmental effects of proposed plans, policies and programmes are evaluated under the SEA regulations.
Water Quality	The chemical and biological status of various parameters within the water column and their interactions, for example dissolved oxygen, indicator metals such as dissolved copper, or suspended solids

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List of Acronyms

Acronym	Terminology
ALC	Agricultural Land Use
AONB	Area of Outstanding Natural Beauty
AQMA	Air Quality Management Area
AQO	Air Quality Objective
CSA	Community Safety Assessment
EcoW	Ecological Clerk of Works
EPSML	European Protected Species Mitigation License
EqIA	Equality Impact Assessment
EV	Electric Vehicle
GVA	Gross Value Added
HIA	Health Impact Assessment
HRA	Habitats Regulation Assessment
IMD	Index of Multiple Deprivation
ISA	Integrated Sustainability Appraisal
JNCC	Joint Nature Conservation Committee
JSNA	Joint Strategic Needs Assessment
LEP	Local Enterprise Partnership
LNR	Local Nature Reserves
LPAs	Local Planning Authority
LSOA	Lower Layer Super Output Areas
NCA	Natural Capital Assessment
NCA	National Character Area
NEA	National Ecosystem Assessment
NERC	Natural Environment and Rural Communities
NIA	Noise Impact Area
NMVOC	Non-methane volatile organic compounds
NNR	National Nature Reserves
NO_2	Nitrogen Dioxide
NPPF	National Planning Policy Framework
NSIPs	Nationally Significant Infrastructure Projects
NTS	Non-Technical Summary
ONS	Office for National Statistics
PHE	Public Health England
PPS	Plans, Policies and Strategies

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Acronym	Terminology
PRoW	Public Right of Way
RIGS	Regionally Important Geological Sites
SAC	Special Areas of Conservation
SEA	Strategic Environmental Assessment
SO$_2$	Sulphur Dioxide
SPA	Special Protection Areas
SPZ	Source Protection Zone
SSSI	Sites of Special Scientific Interest
TE	Transport East
WHO	World Health Organisation

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Appendix A. Figures
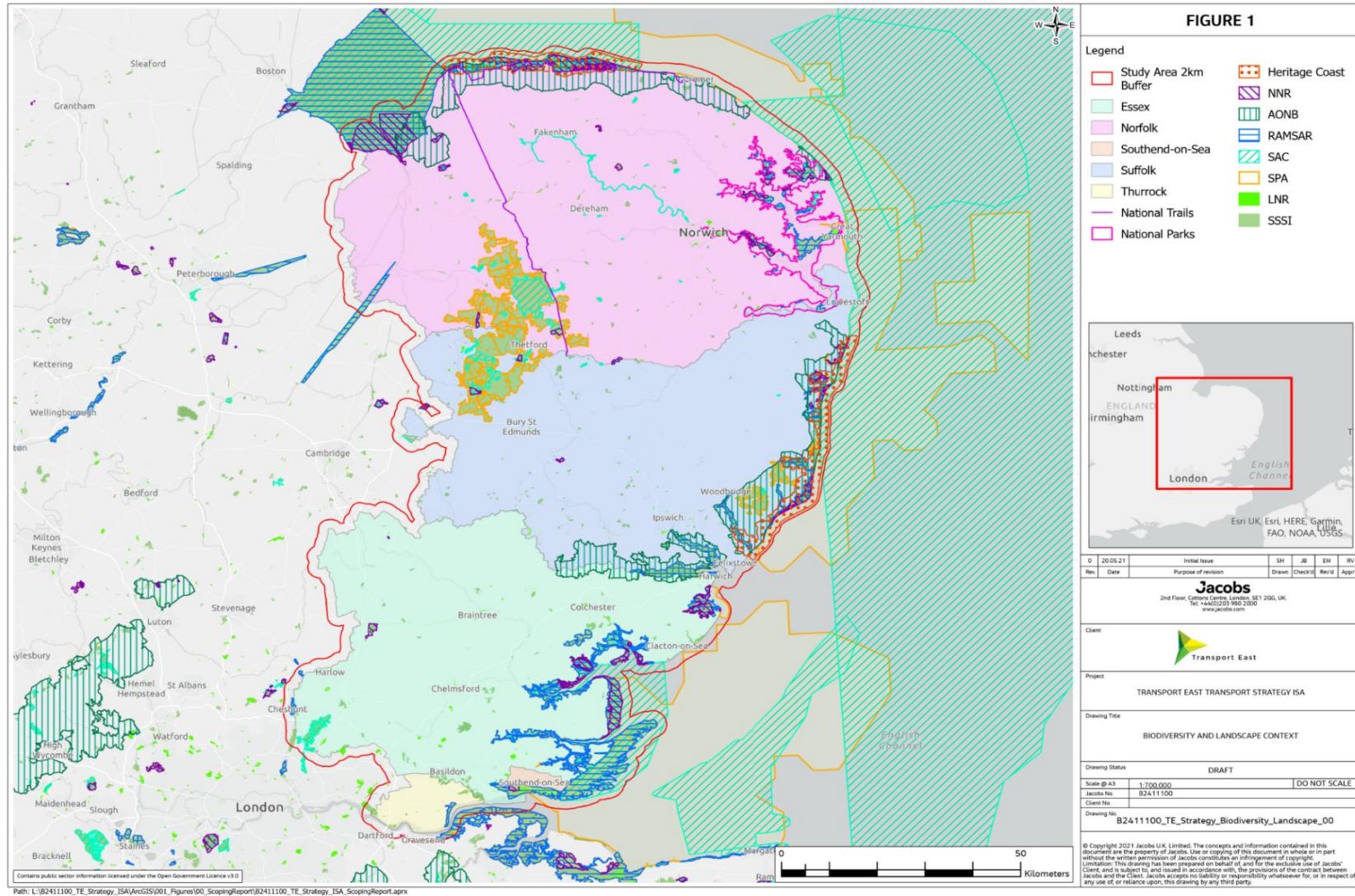
Figure 1 Biodiversity and Landscape Context
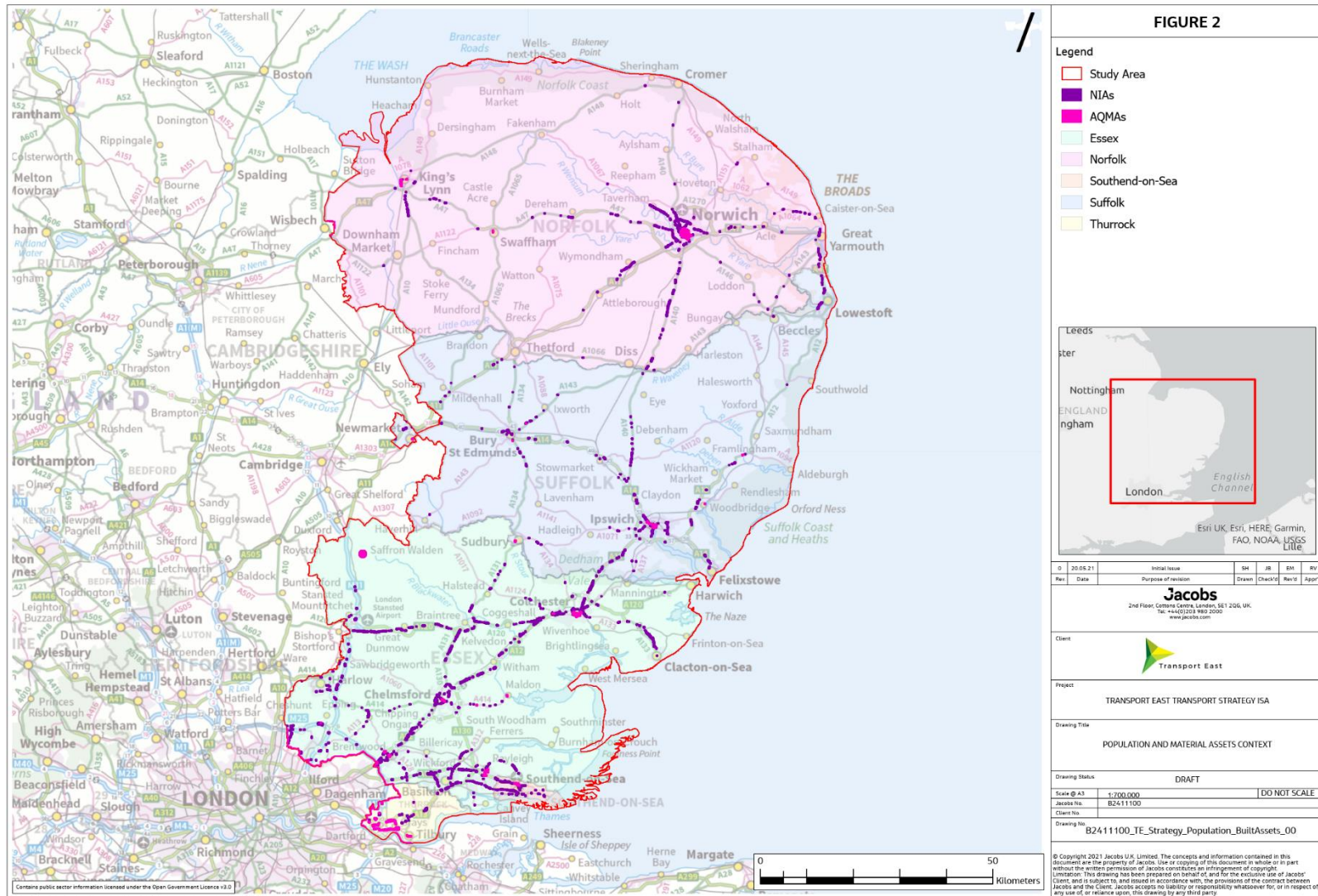
Figure 2. Population and Material Asset Context
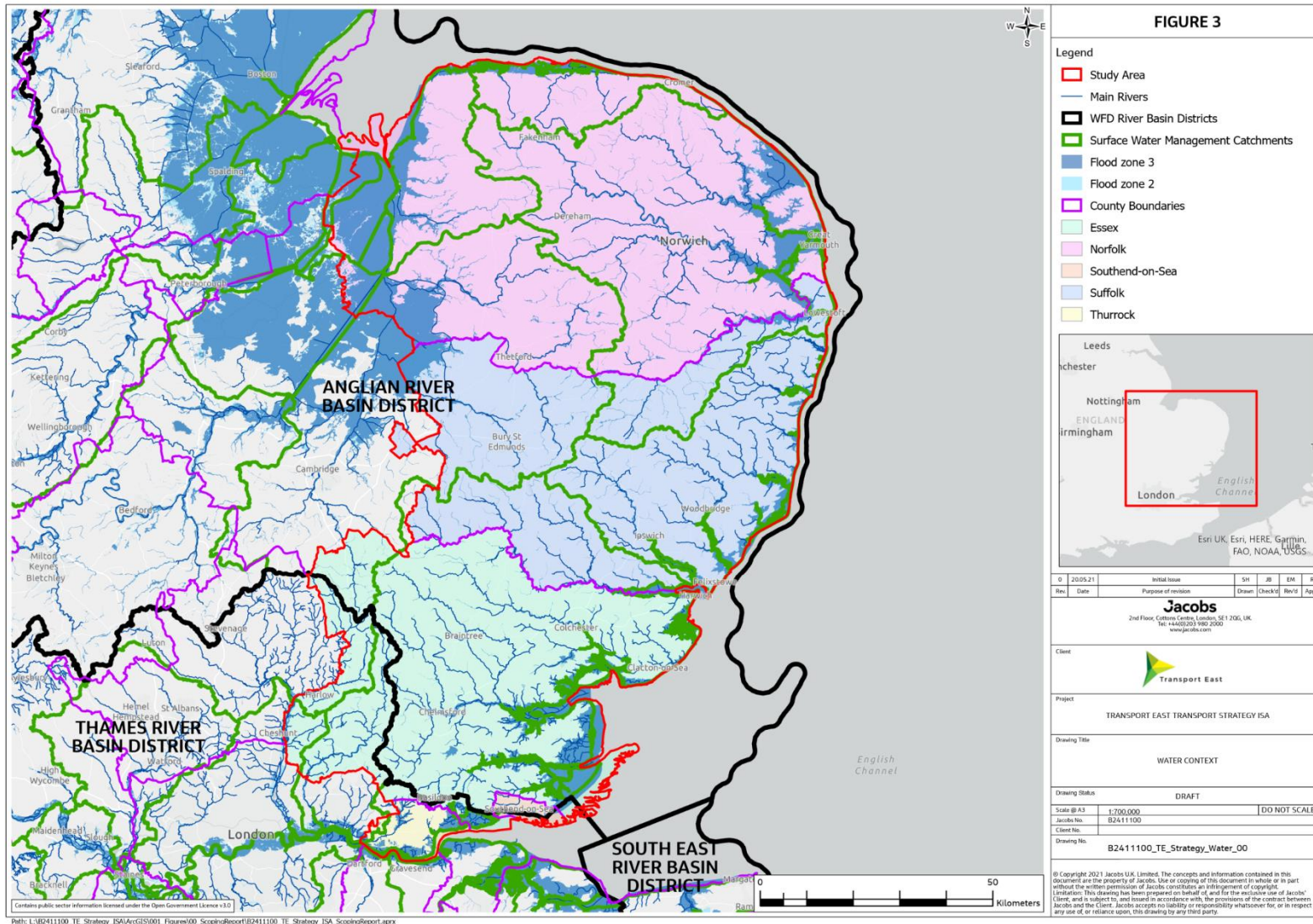
Figure 3. The Water Environment of the TE region
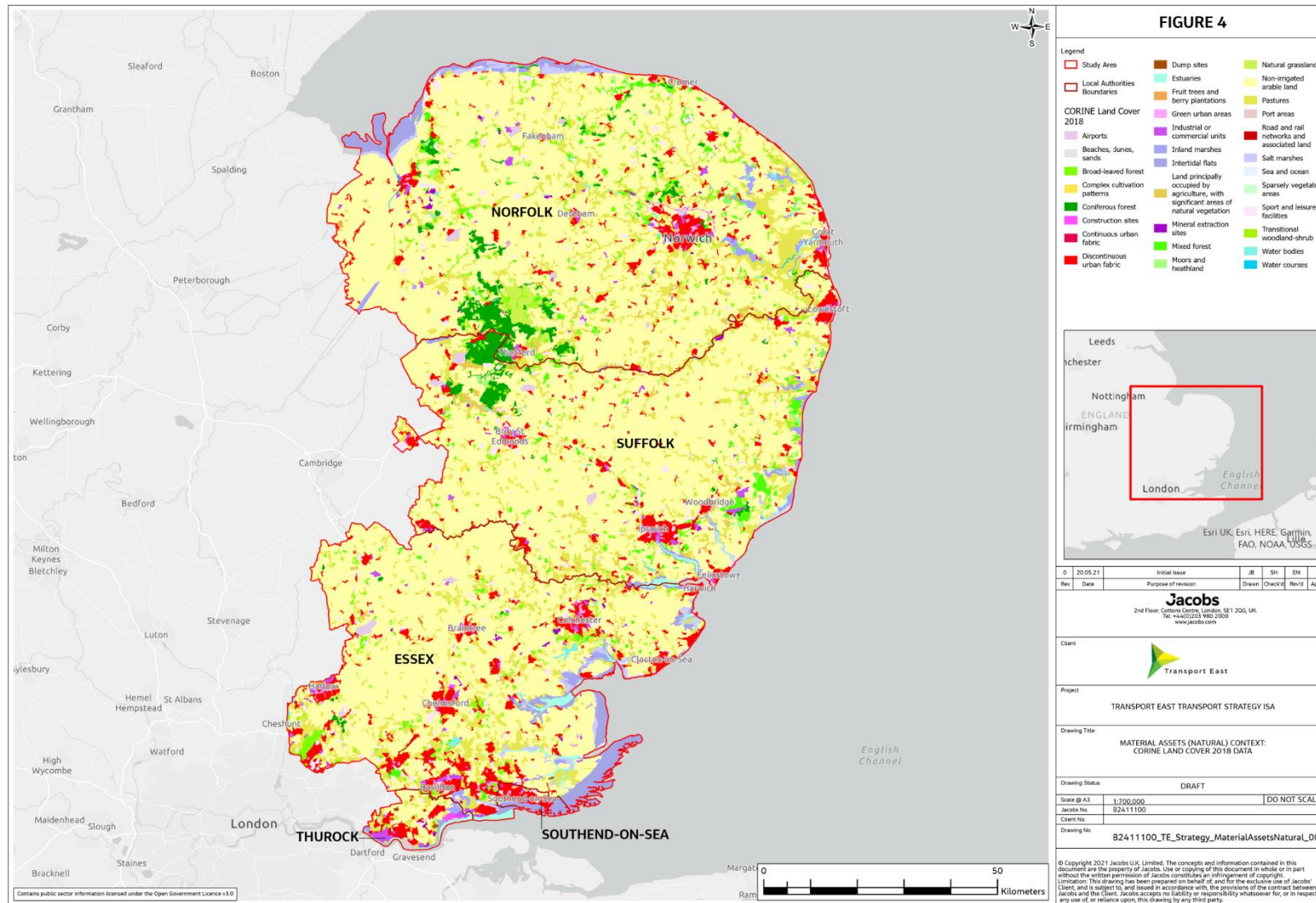
Figure 4. Corrine Land Cover 2018 data
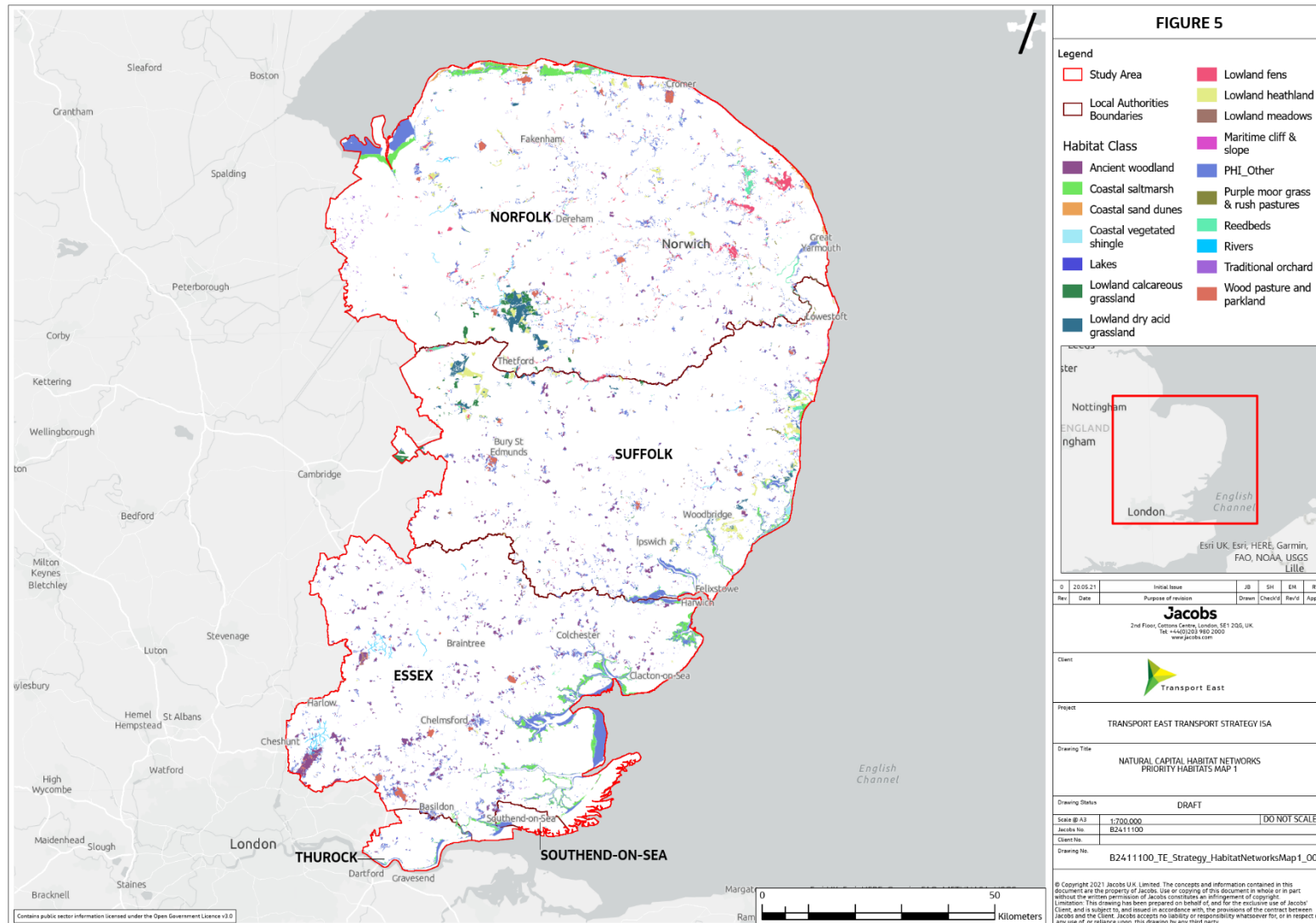
Figure 5. Habitat Networks, Priority Habitats
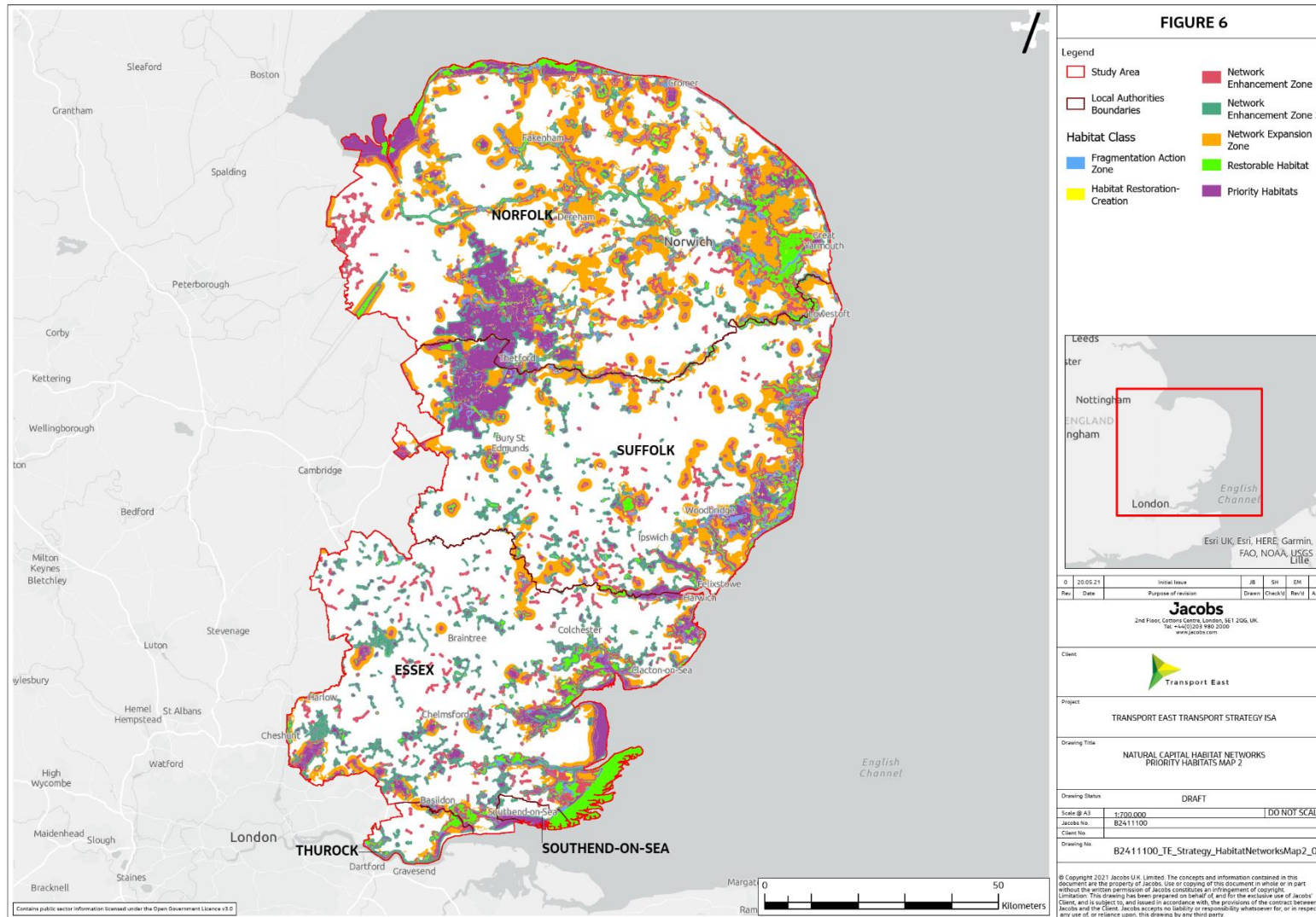
Figure 6. Priority Habitats

Appendix B. Plans, Policies and Strategies Review

This appendix provides a review of international, national, regional and local Plans, Policies and Strategies (PPS) that need to be taken into account in the development and assessment of the Transport East Transport.

Summary table of PPS

PLAN/ STRATEGY	GENERAL OR MULTI TOPIC	POPULATION AND SOCIO-ECONOMIC	HEALTH	EQUALITY AND DIVERSITY	COMMUNITY SAFETY	BIODIVERSITY	WATER ENVIRONMENT	AIR QUALITY	NOISE AND VIBRATION	CLIMATIC FACTORS	LANDSCAPE/TOWNSCAPE AND VISUAL	CULTURAL HERITAGE AND ARCHOLOGY	SOILS, GEOLOGY AND CONTAMINATED	MATERIAL ASSETS AND RESOURCES	NATURAL CAPITAL
International															
Bern Convention On The Conservation Of European Wildlife And Natural Habitats						✔									
Ramsar Convention On Wetlands Of International Importance Especially As Waterfowl Habitat						✔	✔								
Bonn Convention On The Conservation Of Migratory Species Of Wild Animals						✔									
European Convention on the Protection of Archaeological Heritage												✔			
The Convention for the Protection of the Architectural Heritage of Europe												✔			
European Landscape Convention											✔	✔			
Paris Agreement										✔					
National															
National Transport Policy - Transport Investment Strategy		✔						✔						✔	
National Road Policy - Draft Road Investment Strategy 2 (RIS2)		✔			✔			✔	✔	✔				✔	
Connecting people: A Strategic Vision for Rail														✔	
National Planning Policy - National Planning Policy Framework	✔	✔			✔	✔								✔	✔
Decarbonising Transport – The Challenge										✔					

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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
The UK's National Energy and Climate Plan										✔					
National Economic Policy - Industrial Strategy Building a Britain Fit for the Future	✔													✔	
Clean Growth Strategy	✔	✔	✔					✔		✔					✔
National Environmental Policy – 25 Year Environmental Plan	✔		✔			✔	✔	✔		✔	✔	✔			✔
Environment Bill	✔		✔			✔	✔	✔		✔	✔	✔	✔		✔
Clean Air Strategy			✔			✔		✔							
Biodiversity 2020: Strategy For England's Wildlife And Ecosystem Services						✔									✔
The Economics Of Biodiversity: The Dasgupta Review, Hm Treasury 2021		✔													✔
National Flood and Coastal Erosion Risk Management Strategy For England		✔	✔		✔		✔			✔					
Future Water: Water Strategy For England			✔							✔					
Inclusive Transport Strategy		✔	✔	✔											
Tourism Sector Deal	✔	✔													
National Rail stategy														✔	
Regional															
Economic Strategy For Norfolk And Suffolk		✔												✔	
East Inshore and East Offshore Marine Plans							✔			✔		✔		✔	
The Natural Capital Evidence Compendium For Norfolk And Suffolk										✔	✔				✔
Local Industrial Strategy, New Anglia Local Enterprise Partnership		✔												✔	
East Of England Route Strategy		✔		✔				✔						✔	
Anglian Water Plan		✔					✔			✔					
Local															
Economic Plan For Essex		✔												✔	
The Future Of Essex			✔	✔	✔										

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Document	1	2	3	4	5	6	7	8	9	10	11	12	13	14
The Organisational Strategy For Essex 2017 To 2021		✓		✓									✓	
Essex County Council Sustainable Modes Of Travel Strategy	✓	✓											✓	
The Essex Transport Strategy: The Local Transport Plan	✓	✓	✓						✓					
Essex Flood Risk Management Strategy	✓	✓		✓		✓								
Green Essex Strategy		✓			✓		✓		✓			✓	✓	✓
Essex Joint Health And Wellbeing Strategy	✓	✓	✓											
Norfolk Delivery Plan	✓													
Norfolk Strategic Infrastructure Delivery Plan	✓												✓	
Norfolk Strategic Planning Framework	✓												✓	
Together For Norfolk (County Council Business Plan)	✓		✓		✓					✓			✓	
Norfolk Transport Asset Management Plan			✓	✓			✓						✓	
Strong Roots: New Growth Norfolk Rural Strategy 2017-2020			✓											
Norfolk County Council Local Transport Plan	✓		✓	✓										
Norfolk Access Improvement Plan										✓				
Norfolk County Council Public Health Strategy	✓	✓												
Norfolk Climate Change Strategy					✓	✓	✓		✓					
Norfolk Local Flood Risk Management Strategy	✓	✓				✓								
Suffolk County Council Local Transport Plan	✓						✓		✓					
Suffolk County Council Business Plan	✓	✓	✓						✓					
Suffolk County Council, Safety, Health And Wellbeing Strategy	✓	✓	✓											
Suffolk Rail Prospectus													✓	
Suffolk Climate Emergency Plan		✓			✓	✓	✓		✓					
Suffolk Framework For Inclusive Growth	✓	✓	✓	✓					✓					
Suffolk Road Safety Strategy		✓												

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Suffolk Flood Risk Management Strategy			✔		✔		✔								

The PPS review table below has been ordered by topics, and colour coded to identify the type of PPS document

PPS Key

Colour code	Scope of PPS
	International
	National
	Regional
	Local

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
General				
National Environmental Policy – 25 Year Environment Plan	2017	(DEFRA) The 25-year Environment Plan sets out the aims and actions of the UK government over the next 25 years to deliver cleaner air and water in cities and rural landscapes, protect threatened species and provide richer wildlife habitats. By adopting the plan, the UK aims to achieve the following: ▪ Clean air. ▪ Clean and plentiful water. ▪ Thriving plants and wildlife. ▪ Reducing the risks of harm from environmental hazards. ▪ Using resources from nature more sustainably and efficiently. ▪ Enhancing beauty, heritage and engagement with the natural environment. ▪ Enhancing beauty, heritage and engagement with the natural environment. ▪ Mitigating and adapting to climate change. ▪ Minimising waste. ▪ Managing exposure to chemicals. ▪ Enhancing biosecurity. 25 Year Environment Plan builds on our Industrial Strategy and Clean Growth Strategy, to transform productivity across the country and drive green innovation.	Six key areas for action are: Using and managing land sustainably • Including embedding net gain principles for development – this includes a commitment to natural capital approaches as a to support decision making and setting the principle of leaving the environment in a better state. • Introducing a new Environmental Land Management System (ELMS) • Improving soil health and restoring and protecting peatlands • Supporting woodland creation • Reducing risks from flooding and coastal erosion Recovering nature and enhancing the beauty of landscapes • Developing a Nature Recovery Network • Reviewing National Parks and AONBs • Reforming water abstraction Connecting people with the environment to improve health and wellbeing • Supporting health and wellbeing using green spaces including schools • Creating more green infrastructure in towns and cities Increasing resource efficiency, and reducing pollution and waste including the clean air strategy Securing clean, productive and biologically diverse seas and oceans supporting achieving good environmental status for the marine environment. Protecting and improving the global environment Actions proposed towards net gain include developing on existing requirements for biodiversity net gain in National Planning Policy and supporting development of tools and approaches to support application of biodiversity net gain and exploring ways to support achieving environmental net gain.	(DEFRA 2017)
Environment Bill 2020	2020	The Environmental Bill published by DEFRA, is due for assent into law in autumn 2021 and aims to build on the 25-Year Environment Plan	There are a number of areas the bill makes provisions for, which include: ▪ Waste and Resource efficiency ▪ Air Quality including proposed binding targets for $PM_{2.5}$	(DEFRA, 2020)

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
			▪ Water ▪ Nature and Biodiversity ▪ Conservation covenants ▪ Regulation of chemicals The bill will introduce Environmental Improvement Plans with legally binding targets and mandatory requirements for biodiversity net gain in the planning system supplementing existing protections for the protected sites and irreplaceable habitats and sets the framework for Nature Recovery Strategies.	
National Planning Policy - National Planning Policy Framework	2012 Revised 2019	(Ministry of Housing, Communities and Local Government) The National Planning Policy Framework (NPPF) sets out the Government's economic, environmental and social planning policies for England. Taken together these polices articulate the Government's vision for sustainable development, which should be interpreted and applied locally to meet local aspirations. The framework replaces all existing Planning Policy Statements and Planning Policy Guidance Notes. The NPPF recognises that the purpose of the planning system is to achieve sustainable development, which can be achieved when economic, social and environmental gains are sought jointly. In this, contributing to protecting and enhancing our natural, built and historic environment, and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy. Reference also separate National Policy Statements for Ports, National Networks, and Airports	Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives): a) an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure; b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and c) an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating	(Ministry of Housing, Communities & Local Government, 2019)
National Economic Policy Industrial strategy - Building a Britain Fit for the Future	2017	White paper sets out a long term plan to boost productivity and earning throughout the UK covering • Ideas • People • Infrastructure and • Business environment • Places	Supports digital economy, clean growth, mobility innovation, and meeting needs of an ageing society and investments in transport, housing and digital infrastructure including electric vehicles infrastructure.	

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Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
Clean Growth Strategy	2017, updated 2018	(Department for Business, Energy, and Industrial Strategy) The Clean Growth Strategy sets out the UK's reaffirmed ambition to promote the ambitious economic and environmental policies to mitigate climate change and deliver clean, green growth.	The Clean Growth Strategy sets out key priorities for accelerating clean growth: 1) Develop world leading Green Finance capabilities 2) Improving business and industry efficiency – 25% of UK emissions 3) 2) Develop a package of measures to support businesses to improve their energy productivity, by at least 20% by 2030 4) Improving our homes – 13% of UK emissions 5) Improving the energy efficiency of our homes 6) Rolling out low carbon heating 7) Accelerating the shift to low carbon transport – 24% of UK emissions **8) Accelerate the uptake of low emission taxis and buses** **9) Delivering Clean, Smart, Flexible Power – 21% of UK Emissions**	(Department for Business, Energy & Industrial Strategy, 2018)
Industry Strategy Tourism Sector Deal	2019	A Policy Paper Sets out how the government and industry will work in partnership to boost productivity, develop skills of the UK workforce and support destinations to enhance their visitor offer.	Policies include support for rural area diversification, development of Tourism Zones and investment in infrastructure and tourist attractions.	HMG

The organisational strategy (2017 – 2021) and plan (2021)	Strategy 2017
	
	Plan 2021
		(Essex County Council)
		
		Organisational Plan 2021 sets out how Essex County Council have responded to the challenge of Covid-19.
			Plan Priorities:
			Securing inclusive economic growth
			▪ Help people in Essex prosper
			    Enable Essex to attract and grow firms and support existing businesses
			    Target economic development to areas of opportunity by increasing their skills
			▪ Helping People get the Best Start and Age Well
			    Help keep vulnerable children safer and enable children & young people to fulfil their potential
			    Enable more vulnerable adults to live independent of social care
			▪ Improve the health of people in Essex
			▪ Helping to create great places
			▪ Help to secure stronger, safer and more neighbourly communities
			▪ Help secure sustainable development and protect the environment
			    Facilitate growing communities and new homes
			▪ Transforming the Council
			    Limit cost and drive growth in revenue; Develop the capability, performance and engagement of our people; Re-imagine how residents' needs can be met in a digital world
				(Essex County Council, 2020a)

Essex County Council	2020	(Essex County Council)	The key objective is to demonstrate the different methods used by ECC and partners to facilitate the increased use of more active and sustainable	(Essex County

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Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
Sustainable Modes of Travel Strategy		The Sustainable Modes of Travel Strategy (SMoTS) published by Essex County Council outlines the steps the authority is taking to enable accessibility throughout the county. The strategy aims to improve accessibility for all to places for employment and education, as well as other services such as retail, leisure, health services. By improving this accessibility individuals and communities will gain health, social and economic benefits. Mission Statement: The aim of the Sustainable Modes of Travel Strategy is to reduce the number of private motor vehicles using the highway network during peak travel times.	travel modes available to businesses, residents and schools within Essex; to meet the overarching aim of better managed congestion. This strategy covers a wide range of activities, with their key objectives outlined below: ▪ Allow and enable residents to make an informed choice about how they travel for work, school and leisure; ▪ Improve the health, welfare and safety of all Essex residents by encouraging an active lifestyle through increased walking and cycling; ▪ Shape future planned growth and development in Local Plans at locations which promote the hierarchy of preferred modes of transport, namely walking, cycling and public transport, and focus development in locations which are or can be made sustainable; ▪ Importance of design to create attractive and safe environments that will be more welcoming and enticing to walking and cycling ▪ Better management of congestion to secure the resilience of the network; ▪ Embed high quality sustainable alternatives, reducing the need to travel by car; ▪ Reduce CO2 and other emissions; ▪ Promote and support the development of travel options being used to access employment, health, education and leisure facilities; ▪ To consolidate and build on existing Travel Plans developed within the County; Contribute to meeting the County Council's Sustainable Travel Business Plan targets that relate to the delivery of transport services.	Council., 2020b)
Green Infrastructure Essex Strategy	2019	(Essex County Council) This strategy raises the importance of developing green infrastructure and green spaces in Essex over the next 20 years. The vision of the strategy states, 'We will protect and grow a high quality connected Green Infrastructure network that extends from our city and town centres to the countryside and coast and which; is designed for people and wildlife, whilst being self- sustaining.'	The strategy has seven key objectives: 1. Protect existing green infrastructure, especially the most valuable 2. Improve existing green infrastructure so it is better functioning 3. Create more high-quality green infrastructure for people and wildlife 4. Improve the connectivity of the green infrastructure for people and wildlife 5. Increase use and inclusivity of green infrastructure across all social groups and abilities 6. Provide green infrastructure facilities to promote health and wellbeing Secure funding for new and existing green infrastructure to ensure their sustainability.	(Essex County Council, 2019)
Norfolk Strategic Planning Framework	2017	(Strategic Planning Member Forum)	Key agreements of the Strategic Planning Framework: Agreement 1 - That when preparing new Local Plans which seek to identify levels of Objectively Assessed Need for housing the Norfolk Planning	https://www.norfolk.gov.uk/.../draft-

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Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		The Norfolk Strategic Planning Framework aims to inform the preparation of future local plans, contribute, or influence high level plans. These proposed outcomes are achieved by agreeing shared objectives and strategic objectives for Norfolk. The framework also aims to maximise any potential opportunities and benefits, as well as securing additional external funding.	Authorities will produce documents which provide for the development needs of their areas until at least 2036. Agreement 2 - In preparing their Local Plans the Norfolk Planning Authorities will seek to positively contribute towards the delivery of the following vision Agreement 3 - By 2036, through co-operation between Local Authorities and preparation of Development Plans, Norfolk will seek to maximise the delivery of the following Objectives: ▪ To realise the economic potential of Norfolk and its people ▪ To reduce Norfolk's greenhouse gas emissions as well as the impact from, exposure to, and effects of ▪ climate change ▪ To address housing needs in Norfolk ▪ To improve the quality of life for all the population of Norfolk ▪ To improve and conserve Norfolk's rich and biodiverse environment	norfrolk-strategic-framework.pdf
Norfolk Access Improvement Plan	2019-2029	(Norfolk County Council) The Norfolk Access Improvement Plan 2019-2029: Rights of Way Improvement Plan 2 (or 'NAIP') sets out the priorities for improving the rural and urban access network in Norfolk for the benefit of people and wildlife.	The plans vision is to: ▪ Manage the countryside access network so it meets the varying demands placed upon it ▪ Increase public, economic and environmental benefit associated with Public Rights of Way ▪ Involve communities ▪ Act pragmatically and collaboratively with others with respect to responsibilities and resources Increase investment in the countryside access network	(Norfolk County Council, 2019)
Suffolk Framework for Inclusive Growth	2019 Updated 2020	(Suffolk Public Sector Leaders – Suffolk Growth) The Framework sets out inclusive growth aims, our support for businesses and draws together Suffolk's spatial approach for future development across the county, identifying key areas for new homes, employment sites and the infrastructure needed to support our growth. The seven priorities are: ▪ Inclusive economic growth ▪ Climate change ▪ Health & Care ▪ Supporting the vulnerable ▪ Strong communities	The framework sets out four agreed inclusive growth aims. These aims are listed below: 1. Suffolk's Businesses- Make Suffolk an optimal location for business expansion, sustainability, and viability across all our sectors 2. Suffolk's Employees - Meet identified skills & employment needs to facilitate inclusive economic growth & improve employment opportunities 3. Suffolk's Communities - Create a consistent, efficient & transparent approach to planning leading to improved housing delivery and community development 4. Suffolk's Connections - Secure investment in our economic & social infrastructure	(Suffolk Growth, 2020).

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Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		▪ Community Safety Fairer Funding for local public services		
Population, socio economic				
The Future of Essex	2017-2035	(Essex County Council) The future of Essex informs strategies and plans made by Essex County Council each year. It sets out the vision agreed by the Essex Partners, a collection of organisations from across Essex. The purpose of The Future of Essex is to give all the many, different communities, groups and businesses of Essex a way to collaborate in planning our future.	The ambitions and their corresponding priorities include: ▪ Unite behind a sense of identity Busting stereotypes, celebrating achievement, building pride. ▪ Enjoy life long into old age Reducing the gap in life expectancy, tackling avoidable physical and mental illnesses and promoting independence wherever possible. ▪ Provide an equal start for every child Improving school readiness, supporting safe and secure relationships, and making sure every child can go to a great Essex school. ▪ Strengthen communities through participation Nurturing a safer, better connected society by giving people more ways to control and contribute to their communities. ▪ Develop our county sustainably. Enhancing the things that make Essex a great place to live – our countryside, our coastline, our heritage – and working with local people and communities, to build homes not houses, places not developments, communities not estates. ▪ Connect us to each other and the world. Tackling congestion on our roads and railways, securing large scale investment in low carbon modes of transport and delivering super-fast broadband to every part of Essex ▪ Share prosperity with everyone ▪ Giving more people the chance to achieve the highest qualifications in key growth industries, providing the space for businesses to grow and relocate, and developing a united and relentless focus on attracting and maximising investment in Essex.	(Essex Partners, 2017)
Essex Cycling Strategy	2016	(Essex County Council) The Essex Cycling Strategy acts as the over-arching policy framework to Enable, Provide and Promote cycling in Essex.		(Essex County Council, 2016)
Essex Cycle Action Programme	2017	(Essex County Council) To support the cycling strategy ECC have published cycle network plans for all District areas of Essex. ECC have evaluated possible routes for implementation but priorities include Flagship routes, these are currently being evaluated using the new Department for Transport (DfT),	(Essex County Council, 2017)

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		Local Walking and Cycling Infrastructure Plans (LCWIP) tools and methodology. Planning for subsequent years, ECC were selected by the Department for Transport to be part of the LCWIP programme which develops network plans for both walking and cycling.		
Essex Walking strategy	Pending	(Essex County Council) ECC are in the process of finalising a revised Walking Strategy following a consultation that was undertaken in 2019. A final version will be available shortly.		
Education Transport Policy		(Essex County Council) This policy sets out how the Council fulfils its statutory duties and exercises its discretionary powers to make arrangements to provide free home to school transport for some children of compulsory school age and discretion whether to provide transport for others.		(Essex County Council, No Date)
Suffolk Road Safety Strategy	2012-2022	(Suffolk Roadsafe Board) The Suffolk Road safe Strategy is intended to complement the Suffolk Local Transport Plan by making travel safer and healthier. The aim of the partnership is to make the roads of Suffolk safer for all. This strategy aims to reduce the dominance of motorised vehicles and improve the conditions for cycling and walking	The strategy has aims and targets to be achieved by 2025: ▪ Double cycling, where cycling activity is measured as the estimated total number of cycle stages made each year, from 0.8 billion stages in 2013 to 1.6 billion stages in 2025 ▪ Increase walking activity, where walking activity is measured as the total number of walking stages per person per year, to 300 stages per person per year in 2025 Increase the percentage of children aged 5 to 10 that usually walk to school from 49% in 2014 to 55% in 2025	(Suffolk Roadsafe, No Date)
Economic Strategy for Norfolk and Suffolk	2017	(New Anglia Local Enterprise Partnership – Norfolk and Suffolk Unlimited) The Norfolk and Suffolk Economic Strategy 2017 was published in November 2017 by the New Anglia Local Enterprise Partnership (LEP), which covers both counties of Norfolk and Suffolk. The strategy looks ahead to 2036 but focusses on the four years from 2017.	Key aims are: • Work across all local authorities to integrate our inward investment and business location offer, campaigning at scale in new markets and working with national Government. • Attract the highly skilled people we need, through targeted campaigns at specific groups working with sectors and clusters to show people the opportunities that are here. • Make sure that investment markets have the information they need to take the decision to invest in infrastructure of all kinds.	(New Anglia LEP, 2017)

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		The LEP are ambitious for future growth and will work with Government and private investors to deliver it. Boosting the area's infrastructure is central to delivering the ambitions. Priority places are interconnected and dependent on transport links. The LEP will prioritise improvements to digital and transport infrastructure and utility provision, using its own funding and making the case to Government where national investment is needed. Businesses, the LEP, local authorities, third sector organisations, colleges and universities are committed to aligning relevant actions and investment to the priorities agreed. Annual investment plans are agreed each Spring. The strategy highlights how improved infrastructure are key including the provision of flood defences that unlock or protect housing and commercial development. A full review was due take place in 2020 to develop a new Economic Strategy for the 2021 - 2026 period.	• Improve digital connectivity, with a particular focus on super-fast broadband in rural areas and reliable mobile phone coverage for those travelling around the region. • Use consistent place branding, with an overarching offer, supported by our ambitions, unique places, successes, skills, quality of life, culture and diversity. • Work with Government to ensure that the unique contribution of our energy sector is well understood and supported. • Build the right kind of housing and commercial space where it is needed and integrate utility, road, rail, digital and green • infrastructure to build the communities and places people want to live. • Develop a year-round visitor offer by investing in the strategic projects such as attractions, heritage and cultural institutions that also will increase visitor spend. • Take a more coordinated approach with our colleges and universities on alumni engagement and develop a network to better market the area to this group. • Use new rail investment to further improve connectivity to London and Cambridge, with Great Eastern Main Line upgrades to enable regular services of under 90 minutes from Norwich and under 60 minutes from Ipswich and cross-country upgrades to enable quicker and more frequent services to Cambridge and Stansted. Other key infrastructure improvements such as the Ely area rail upgrades, A14, A11 and A47, will also improve the region's internal connectivity and links to wider markets.	
Local Industrial Strategy	2019	(New Anglia Local Enterprise Partnership – Norfolk and Suffolk Unlimited) The strategy covers Norfolk and Suffolk and builds on the priorities and targets set in the Norfolk and Suffolk Economic Strategy. The strategy sets out a series of actions that will drive productivity and growth across the economy as a whole, so that all businesses and communities' benefit from sustainable and inclusive growth with clean energy, improved wages and better quality jobs, innovative transport solutions and support for the ageing population.	Key sectors of the Local Industrial Strategy are: Clean energy powering the world ▪ The epicentre of the world's largest market for offshore wind energy. ▪ The only place in the UK where all forms of energy generation exist together. Agri-food feeding the world ▪ Advanced and nationally significant agri-food and drink sector, with globally renowned companies. ▪ World-leading research base, at the forefront of global food and health research. ICT and Creative Digital connecting the world ▪ Global centre of research and development and innovation in communications technology.	(Norfolk and Suffolk Unlimited, 2019)

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Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		The strategy does not include any new spending commitments outside of existing budgets but will inform the strategic use of local funding streams and, where relevant, spending and decisions at the national level.	Fast growing digital creative hub, with an international reputation for producing graduates who excel.	
Economic Recovery and Renewal Strategy	2021 -	(South East Local Enterprise Partnership) The South East Local Enterprise Partnership covers Essex, Southend, Thurrock, Kent, Medway and East Sussex. Published in March 2021, the strategy looks at recover post covid. The strategy refers to seven objectives: 1. support business innovation; 2. drive trade and growth; 3. deliver a skilled workforce; 4. improve digital and physical connectivity; 5. put clean growth at the heart of what we do; 6. support equality; and 7. promote greater resilience in our places.	Key aims of the strategy include: • Business growth and resilience • UK's Global gateway • Communities for the future • Coastal Catalyst The strategy identifies a number of transport related infrastructure relevant to the Transport East region including: ▪ Improved rail infrastructure ▪ Access to international gateways ▪ Major road corridors ▪ Lower Thames crossing	(SELEP, 2021)
Economic plan for Essex	2014	(Essex County Council) Essex County Council published the Economic Plan for Essex in 2014, for the years 2014 to 2021. The plan assesses challenges facing the economy and any specific issues which need to be addressed in order to secure sustainable growth. The plan also addresses the interventions and investments that partners propose to make, whilst also seeking commitment from central government. The plan sets out ambitions to improve skills within the Essex workforce and enhance productivity within the economy as well as significant infrastructure investment.	The plan will be measured against the success of the following aims: ▪ job growth across Essex –aim to secure 117,745 new jobs through the delivery of this plan; ▪ increased levels of output across the economy –want to see output increase in growth corridors and in key sectors; ▪ improvements in productivity –sustained increases in the earnings of those working in Essex; ▪ increased house building –81,310 new homes built over the life of this plan; ▪ improvements in broadband –maximise the number of households and businesses that have access to superfast broadband; ▪ the skills of the Essex workforce – more Essex businesses to be able to recruit suitable people; and ▪ the economic activity of our young people –Essex to be a NEET free county (people not in education, employment and training)	(Essex County Council, 2014)
Norfolk Delivery Plan	No date	(Norfolk County Council) The Norfolk Delivery Plan is Norfolk County Councils response and contribution to the New Anglia LEP Economic Recovery Restart Plan, the short term plan to respond to the pandemic.	The overarching priorities of the Norfolk Delivery Plan, outlined in this paper, are to: ▪ Help as many businesses as possible to survive, and as many people as possible to stay in work or secure alternative work or training, with a strong focus on social inclusion ▪ Promote the county as place that is open for business and safe to live, work and visit.	(Norfolk County Council, No Date)

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Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		The plan outlines specific strategies to approach different sectors, specifically; Business, People, and Infrastructure.	▪ Focus on local markets and supply chains ▪ Drive the identification, development and promotion of clean growth opportunities ▪ Retain and build on the environmental benefits arising from the pandemic	
Norfolk Rural Strategy Strong Roots: New Growth Norfolk Rural Strategy 2017-2020	2013	(Norfolk County Council) The strategy was released in response to numerous consultations which identified key challenges faced by Norfolk.	The principles underpinning the draft strategy are to: ▪ Be ambitious for rural Norfolk, so it delivers quality of life for all age groups ▪ Make the case for rural Norfolk to decision-makers at every level - from district to national ▪ Ensure businesses, communities and partners have access to the data and evidence to make the case for investment in rural Norfolk ▪ Learn from other areas and build on successful models of rural development elsewhere	(Norfolk County Council, 2013)
Together for Norfolk	2019-2025	(Norfolk County Council) Business plan launched by Norfolk County Council in 2019. Together for Norfolk is Norfolk County Councils business plan for 2019-2025. The ambition of the plan is '*for economic growth, managed development and a better future for all, working with a host of organisations, businesses and community groups across our county*'	We will invest in Norfolk's future growth and prosperity by: ▪ Focusing on inclusive growth and improved social mobility. ▪ Encouraging housing, infrastructure, jobs and business growth across the County. ▪ Developing our workforce to meet the needs of the sectors powering our local economy. ▪ Work to reduce our impact on the environment. ▪ This way we can help Norfolk have a growing economy, full of thriving people living in strong communities we are proud of.	(Norfolk County Council, 2019)
Suffolk County Council Business Plan	2021-2022	(Suffolk County Council) In addition to the priorities of inclusive growth; health, care and wellbeing and efficient, effective public services, the County Council is focussed on the environment and committed to tackling climate change. In 2019 it recognised the Climate Emergency and, despite the challenges of COVID-19, Governments, businesses, and communities continue to come together to take climate action.	One of the 4 priorities set in this strategy directly relate to Transport Strategy: Efficient and Effective Public Services Changing the way we operate to meet our customers' needs and balance our budget despite diminishing resources, increasing demand and changing customer expectations	(Suffolk County Council , No Date)
Health				
Essex Joint Health and Wellbeing Strategy	2018	(Essex Health and Wellbeing Board) As required, Essex has a Joint Health and Wellbeing Strategy (JHWS), which sets out a small number of key strategic priorities for action, building on the previous JHWS 2017, the current strategy covers the years 2018 to 2022.	The strategy addresses four key areas of focus: ▪ Improving mental health and wellbeing ▪ Addressing obesity, improving diet and increasing physical activity ▪ Influencing conditions and behaviours linked to health inequalities ▪ Enabling and supporting people with long-term conditions and disabilities.	(Essex Health and Wellbeing Board, 2018)

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		The strategy has a simple shared vision, '*We want everybody in Essex to live well together*'		
Suffolk County Council, Safety, Health and Wellbeing Strategy	2012, recent strategy 2019-2022	(Suffolk Health and Wellbeing Board) The key Vision of Suffolk Health and Wellbeing Board: '*People in Suffolk live healthier, happier lives. We also want to narrow the differences in healthy life expectancy between those living in our most deprived communities and those who are more affluent through greater improvements in more disadvantaged communities.*'	The Board are committed to developing a Health in All Policies (HIAP) approach wherever possible. HIAP is a collaborative approach, that aims to improve everyone's health by incorporating health considerations into decision making across sectors, policy, and service areas, as well as addressing the wider determinants of health.	(Joint Health and Wellbeing Board, 2019)
Norfolk County Council Public Health Strategy	2016-2020	(Norfolk County Council) Some aspects play a greater contribution to health and wellbeing than others. Socio-economic factors (such as the local environment, housing, transport, employment and social interactions) and people's health behaviours (smoking, alcohol, physical activity, and a healthy diet) play a bigger role than the health care services we receive. The vision of Norfolk County Councils Public Health Strategy is to: "*Help the people of Norfolk live in healthy places, promote healthy lifestyles, prevent ill-health and reduce health inequalities*"	Prioritises public health actions which will: ▪ Promote healthy living and healthy places. ▪ Protect communities and individuals from harm. ▪ Provide services that meet community needs. ▪ Work in partnership to transform the way we deliver services Aims to ▪ Reduce the risks of ill health that people might impose on others. ▪ Ensure that people have appropriate access to services and information that they need to improve their health. ▪ Pay special attention to the health of children and young people and other vulnerable people. ▪ Help people overcome addictions and other unhealthy behaviours. ▪ Reduce the causes of ill health. ▪ Support people to make healthier choices	(Norfolk County Council, 2016)
Equality and diversity				
Inclusive Transport Strategy	2018	(Department for Transport) The Inclusive Transport Strategy sets out the Governments plans to make the national transport system more inclusive and improve ease of travel for disabled people. Although the focus of the strategy is on inclusion of disabled people, it is likely that many improvements will benefit other transport users.	The five main strategy themes are: ▪ Awareness and enforcement of passenger rights - raising awareness of the obligations on transport operators, the processes for raising concerns or complaints and working with regulators to hold operators to account. ▪ Staff training - ensuring that transport staff understand the needs of disabled people with physical, mental, cognitive or sensory impairments, and can provide better assistance. ▪ Improving information - ensuring that transport operators provide travel information in formats that all passengers can easily access and understand, before and during a journey. ▪ Improving physical infrastructure - ensuring that vehicles, stations and streetscapes are designed, built and operated so that they are easy to use for all.	(Department for Transport, 2018)

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			▪ The future of inclusive transport - ensuring that technological advances and new business models provide opportunities for all, and that disabled people are involved from the outset in their design.	
Biodiversity				
Bern Convention on the Conservation of European Wildlife and Natural Habitats	Adopted 1979, came into force 1982	(JNCC) This international convention is a legally binding instrument for nature conservation, covering natural heritage of the European continent and some African states.	The principle aims of the convention are to ensure the conservation and protection of animal species and wild plant species, as well as their natural habitats. The convention also aims to increase co-operation between the parties involved, and to regulate the exploitation of migratory species. The obligations of the Convention are transposed into UK law through the implementation of the Wildlife and Countryside Act (1981 as amended), as well as Nature Conservation (Scotland) Act 2004, Wildlife (Northern Ireland) Order 1985, and the Nature Conservation and Amenity Lands ((Northern Ireland) Order 1985.	(JNCC, 2019a)
Ramsar convention on Wetlands of international importance especially as waterfowl habitat	Adopted 1971, came into force 1975	(JNCC) The international convention provides the mechanism for protecting sites of global importance and is therefore highly significant in terms of conservation. The convention covers a number of conservation themes, with three main pillars of activity: 1. the designation of wetlands of international importance as Ramsar sites; 2. the promotion of the wise use of all wetlands in the territory of each country; and 3. international co-operation with other countries to further the wise use of wetlands and their resources. The designation of UK Ramsar sites is generally implemented through SSSI's, and through the Wildlife and Countryside Act 1981 (as amended).		(JNCC, 2019b)
Bonn Convention on the Conservation of Migratory Species of Wild Animals	Adopted 1979, into force 1983	(JNCC) This international convention provides an international platform for the conservation and sustainable use of migratory animals and their habitats. The convention allows contracting parties to work together in a global effort. The UK ratified the convention in 1985, and currently has four legally binding agreements under the convention,		(JNCC, 2019c)

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		including the Conservation of Populations of European Bats.		
UK Post-2010 Biodiversity Framework	2012	(JNCC & DEFRA) The UK Post-2010 Biodiversity Framework succeeds the UK BAP and 'Conserving Biodiversity – the UK approach'. The framework demonstrated how the UK contributes to achieving Aichi Targets, identifying activities that are required to complement the strategy. The vision for the Strategic Plan for Biodiversity 2011-2020 is: '*By 2050 biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people*'.	The framework has strategic goals which they aim to achieve. ▪ Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society ▪ Reduce the direct pressures on biodiversity and promote sustainable use. ▪ To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity. ▪ Enhance the benefits to all from biodiversity and ecosystems. Enhance implementation through participatory planning, knowledge management and capacity building.	(JNCC & DEFRA, 2012)
Biodiversity 2020: Strategy for England's wildlife and ecosystem services		(DEFRA) The biodiversity strategy for England provides a comprehensive review of how the Government are implementing our international and EU commitments. It sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea. The outcomes will be delivered by focussing on four key areas: ▪ a more integrated large-scale approach to conservation on land and at sea ▪ putting people at the heart of biodiversity policy ▪ reducing environmental pressures ▪ improving our knowledge	The strategy has five strategic goals: Strategic goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society Strategic goal B: Reducing the direct pressures on biodiversity and promote sustainable use Strategic goal C: Improve the status of biodiversity by safeguarding ecosystems, species, and habitats Strategic goal D: Enhance the benefits to all from biodiversity and ecosystem services Strategic goal E: Enhance implementation through participatory planning and knowledge	(DEFRA, No Date)
The Economics of Biodiversity: The Dasgupta Review	2019 Updated 2021	(HM Treasury) The Dasgutpa Review is an independent, global report on the 'Economics of Biodiversity'. The review was produced with guidance from an advisory panel including representatives from various sectors such as public policy, science, economics, finance and business.	The Review includes several key themes including: ▪ Economies, livelihoods and well-being all depend on nature, ▪ The global portfolio of natural assets has not been managed sustainably, ▪ Failure to engage with nature sustainably is endangering the prosperity of current and future generations, ▪ Institutional failure has been keen factor in the exploitation of nature, ▪ Understanding that the economy are embedded within nature and not external to it,	(HM Treasury, 2021)

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		The review presents a new framework that sets out how nature in economics and decision making relating to the economics of biodiversity should be considered, which is underpinned by an understanding in ecosystem processes and economic activity.	▪ Ensure that the demands on nature do not exceed supply; and Economic success measures need to change, for example, by incorporating Natural Capital into national accounting systems.	
Suffolk's Nature Strategy		(Suffolk County Council) Suffolk's Nature Strategy describes the challenges and opportunities faced by the natural environment. The strategy aims to articulate key priorities for the area, with recommendations and actions proposed to improve the economy and health and wellbeing.	Numerous recommendations and actions within each of the three key priority areas: Natural Environment, Economic Growth and Health and Wellbeing.	(Suffolk County Council, 2014)
Water Environment				
National Flood and Coastal Erosion Risk Management Strategy for England	2020	(Environment Agency) The strategy vision is for a nation ready for, and resilient to flooding and coastal change – today, tomorrow and to the year 2100. The strategy aims for a 2°C rise in global temperatures, whilst planning for a 4°C rise and considers all sources of flood risk. The Strategy sets out the long-term delivery objectives the nation should take over the next 10 to 30 years as well as shorter term, practical measures risk management authorities should take working with partners and communities. Several key themes should be considered for the BFI Plan: ▪ Flood and coastal standards will be considered in the government's National Infrastructure Strategy. ▪ Any future change to existing planning frameworks will be accommodated through an adaptive approach. ▪ Ownership of flooding and coastal change needs to be inclusive for climate resilient places. ▪ Managing flooding and coastal change provides an opportunity to improve and protect the natural, historic and built environments.	The strategy seeks to focus on improving the climate resilience of places, ensuring resilience for future climates. It also seeks to increase the preparedness of the nation, making it able to respond and adapt to future flooding or coastal change. The strategy has two strategic objectives, A and B: ▪ Strategic objective A: Between now and 2025 the Environment Agency will have better evidence to inform future risk and investment needs for managing all sources of flood and coastal change. Strategic objective B: Between now and 2030 risk management authorities will make greater use of funding and financing from non-public sector sources to contribute to the investment needs of flood and coastal resilience.	(Environment Agency, 2020)

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		All new development will seek to support environmental net gain in local places.		
Future Water: Water Strategy for England	2008	(DEFRA) The government has launched its new water strategy for England, Future Water. This includes: sustainable delivery of secure water supplies, an improved and protected water environment, fair, affordable and cost-reflective water charges, reduced water sector greenhouse gas emissions and more sustainable and effective management of surface water. This strategy sets out the Governments aspirations for the water sector by 2030 and the action plan required to meet this vision. The strategy is a response to the pressures faced by the water sector as a result of droughts and floods. The vision is for the sustainable delivery of secure water supplies and improved and protected water environments.	Targets set by the vision for 2030 are: ▪ Improve the quality of the water environment and the ecology which it supports, and continued to provide high levels of drinking water quality from our taps; ▪ Sustainably managed risks from flooding and coastal erosion, with greater understanding and more effective management of surface water; ▪ Ensure a sustainable use of water resources, and implement fair affordable and cost reflective water charges; ▪ Cut greenhouse gas emissions; and embed continuous adaption to climate change and other pressures across the water industry.	(DEFRA, 2008)
East Inshore and East Offshore marine plans	2014	(DEFRA) The East Inshore and East Offshore marine plan aims to implement the Marine and Coastal Access Act 2009 and the planning system which promotes sustainable development and a vision for clean, healthy, safe, productive and biologically diverse oceans and seas up to 2034. The aims of the plan include to enhance marine and coastal environments, decreasing flood and erosion risks, improving health and well-being, supporting sustainable economic growth and considering heritage assets.	The Vision for the East marine plan areas in 2034: ▪ By 2034, sustainable, effective and efficient use of the East Inshore and East Offshore Marine Plan Areas has been achieved, leading to economic development while protecting and enhancing the marine and coastal environment, offering local communities' new jobs, improved health and well-being. ▪ As a result of an integrated approach that respects other sectors and interests, the East marine plan areas are providing a significant contribution, particularly through offshore wind energy projects, to the energy generated in the United Kingdom and to targets on climate change	(HM Government, 2014)
Anglian Water Plan	2019	(Anglian Water) The plan covers the period 2020 – 2025 and responds to specific regional challenges which include climate change in an already water-stressed area, environmental protection and growth and population change. The plan highlights the competing needs between Norwich and the Broads where growing population and environmental harm are challenges.	The Plan responds to the specific challenges facing the region for both supply and demand for water resources: ▪ rapid housing and economic growth and ▪ a changing climate ▪ need to improve the water environment	(Anglian Water, 2019)

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		The plan sees a move away from traditional flood and pollution risk management with emphasis now placed promoting sustainable solutions and embracing innovation to deliver enhanced resilience.		
Essex Flood Risk Management Strategy	2018	(Essex County Council) As required by the Flood and Water Management Act 2010, Essex County Council have put a local flood risk management strategy in place. The ambition of the strategy is to ensure that Essex is a great place to live and work. We want to enhance the environment, and create a place that is safe and sustainable. In terms of flooding, this means that the public are informed about their potential flood risk, and understand why flooding is a problem and what is being done to manage it. The strategy sets out key aims and actions to reduce the impact of local flooding. 'Local' flooding means the risk of water from man-made drainage systems, small watercourses, and rainfall of the land.	The strategy set out 9 Key Objectives: 1. To provide a clear explanation of everyone's responsibilities. 2. To make sure people understand their risk of flooding and think about how we communicate this. 3. To explain how we assess flood risk in Essex and then prioritise the work we do. 4. To clearly set out our work so that communities and businesses can make decisions about how they also manage flood risk. 5. To ensure that planning decisions properly consider flooding and the future impact of any development. 6. To state how we share information and work with other authorities. 7. To ensure that emergency plans and responses to flood incidents are effective and that communities are prepared for flooding. 8. To encourage innovative new thinking, considering community needs, while working with the existing natural and built environment. 9. To highlight where further detailed information and legislation regarding flooding can be found.	(Essex County Council, 2018)
Norfolk Local Flood Risk Management Strategy	2015	(Norfolk County Council) The key aim of the Norfolk Local Flood Risk Management Strategy is: To work with organisations, businesses and communities to manage flood risk and, where it is practicable, affordable and sustainable to do so, to reduce risk to life, property and livelihoods that may arise from local surface runoff, ordinary watercourse and groundwater flooding.	The strategy ensures their plans and projects take full account of all flood risk by communicating local flood risk, and working within Norfolk assisting organisations.	(Norfolk County Council, 2015)
Suffolk Flood Risk Management Strategy	2016	(Suffolk Flood Risk Management Partnership) The strategy aims to improve the understanding of flood and coastal risks and ensure that everyone understands their roles and responsibilities in reducing the risks.	The strategy has a number of strategic aims: ▪ To improve the understanding of flood and coastal risks and ensure everyone understands their roles and responsibilities in reducing the risks. ▪ To work together (both statutory organisations and the public) to reduce flood and coastal risks, using all available resources and funds to the greatest benefit.	(Suffolk Flood Risk Management Partnership, 2016).

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		The overarching aim is to ensure a sustainable approach that supports, and where possible enhances, the economy, environment and society in Suffolk. Several strategy objectives may have specific relevance to the transport east strategy. These can be summarised as, ensuring a collaborative and united approach from both statutory organisations and the public, to work together to reduce flood risk.	▪ To prevent an increase in flood risk as a result of development by preventing additional water entering existing drainage systems wherever possible. ▪ Take a sustainable and holistic approach to flood and coastal management, seeking to deliver wider economic, environmental and social benefits, climate change mitigation and improvements under the Water Framework Directive. ▪ Encourage maintenance of privately owned flood defences and ordinary watercourses and minimise unnecessary constrictions in watercourses. ▪ To share information on the latest and best ideas for flood and coastal management. To ensure that proposals and policies in this strategy are properly integrated with the rest of the area.	
Air Quality				
Clean Air Strategy	2019	(DEFRA) This Clean Air Strategy shows how the UK government will tackle all sources of air pollution, making air healthier to breathe, protecting nature and boosting the economy. It complements three other UK government strategies, the: ▪ Industrial Strategy ▪ Clean Growth Strategy 25 Year Environment Plan	The UK has set stringent targets to cut emissions by 2020 and 2030. The goal is to reduce the harm to human health from air pollution by half. By implementing the policies in this strategy, the aim is to reduce PM2.5 concentrations across the UK, so that the number of people living in locations above the WHO guideline level of 10 µg/m3 is reduced by 50% by 2025. Cleaner air will directly benefit animals and habitats as well as creating a better environment for everyone to live, work and thrive in.	(DEFRA, 2019)
Noise and Vibration				
Noise Policy Statement for England (NPSE)	2010	(DEFRA) Published by DEFRA in 2010, the Noise Policy Statement for England aims to provide guidance on noise management decisions.	Noise Policy Vision: Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.	(DEFRA, 2010)
Climatic Factors				
The Paris Agreement	2016	The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at COP 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. To achieve this long-term temperature goal, countries aim to reach global peaking of greenhouse gas emissions as soon	Implementation of the Paris Agreement requires economic and social transformation, based on the best available science. The Paris Agreement works on a 5- year cycle of increasingly ambitious climate action carried out by countries. By 2020, countries submit their plans for climate action known as nationally determined contributions (NDCs). NDCs - In their NDCs, countries communicate actions they will take to reduce their Greenhouse Gas emissions in order to reach the goals of the	

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		as possible to achieve a climate neutral world by mid-century. The Paris Agreement is a landmark in the multilateral climate change process because, for the first time, a binding agreement brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects.	Paris Agreement. Countries also communicate in the NDCs actions they will take to build resilience to adapt to the impacts of rising temperatures. Long-Term Strategies -To better frame the efforts towards the long-term goal, the Paris Agreement invites countries to formulate and submit by 2020 long-term low greenhouse gas emission development strategies (LT-LEDS).	
Decarbonising Transport - The Challenge	2020	This document sets out a basis for developing policy proposals and a commitment to develop a Transport Decarbonisation plan for transport.	The strategy includes: • Accelerating modal shift to public and active transport • Decarbonisation of road vehicles including refuelling and recharging infrastructure • Decarbonising how goods are delivered • Place based solutions – addressing local level emissions	(DfT, 2020)
The UK's Integrated National Energy and Climate Plan	2020	This document completes commitments under the Withdrawal Agreement to end of January 2020 and summaries the actions taken to that date. The document set out the progress on work towards meeting the Paris Agreements and policy commitments including setting a legally binding commitment to achieve net zero greenhouse gas emissions across the UK economy by 2050 through an amendment to the Climate Change Act. The document also summarises other plans, strategy and legislation supporting commitments and delivery.		
Norfolk Climate Change Strategy		(Norfolk County Council) Norfolk is particularly vulnerable to the impacts of climate change. The strategy sets out a number of key priorities for local authorities and partners. It is stated that particular focus should be on reducing carbon emissions from transport, business, development and existing housing. In addition to this, there needs to be a more robust approach to managing risks, particularly, flooding, water supplied, emergency planning and growth. Climate change vulnerabilities are discussed in relation to Transport and Infrastructure. Potential climate related impacts include: ▪ flooding may affect roads and rail	The strategy includes aims to: 1. To cut carbon emissions by reducing energy consumption and promoting a shift to low carbon technology 2. To improve Norfolk's resilience to the changing climate, including reduction of the socio-economic and environmental risks associated with flooding and coastal erosion.	(Norfolk County Council, No Date)

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		▪ high winds may affect the safety of air, sea and land transport Rising temperature could damage rail and road surfaces, while lower frequency of frost or snow		
Suffolk Climate Emergency Plan	2020	(Suffolk County Council) A report in response to climate emergency declaration made by Suffolk County Council in 2019, with the primary aim of carbon neutrality for Suffolk by 2030. States that: 38% of CO2 emissions in Suffolk in 2017 came from industry and commercial energy use, 37% from transport and 26% from domestic energy use.	Priority area identified within the report is to 'encourage greater take-up of public transport and active travel (walking and cycling) and a massive roll-out of zero emissions vehicles	(Suffolk County Council, 2020)
Landscape				
European Landscape Convention		The Convention promotes the protection, management and planning of European landscapes.	The aims of the convention are to promote landscape protection, management and planning, and to organise European co-operation on landscape issues. It requires the assessment of landscpes and establishment of landscape policies aimed and management and protection	
Dedham Vale Area of Outstanding Natural Beauty (AONB) and Stour Valley Management Plan 2016-2021	2016 – 2021	(Dedham Vale) The Plan outlines a vision for the area as: *The Dedham Vale Area of Outstanding Natural Beauty (AONB) and Stour Valley Project area is a distinctive landscape with agriculture and wildlife at its core that retains its natural beauty and special qualities, which is conserved and enhanced by a wide ranging partnership. It is an area where residents feel a strong sense of belonging, visitors are welcomed to enjoy the countryside and the heritage is understood and appreciated by all.*	The Management plan focuses on six key topics: 1. The Countryside 2. Residents and Villages 3. Enjoying the area 4. River and Tributaries 5. Climate Change 6. Working Together	(Dedham Vale, 2016)
The Norfolk Coast Area of Outstanding Natural Beauty Five Year Strategy	2019-2024	(Norfolk Coast Partnership) Currently a working document, the Five Year Strategy seeks to establish the approach of Norfolk coast partnership to protecting areas of outstanding natural beauty. The work of the Norfolk Coast Partnership is framed by the following vision for the natural environment of the		(Norfolk Coast Partnership, 2019)

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		Area in 2030: *The Norfolk coast will remain unspoilt, with wide landscapes, skyscapes and seascapes. It will retain a strong feeling of remoteness, peace and tranquillity, with richly diverse and distinctive landscapes, geological features, habitats and species. The value of the landscape and the story it tells will be widely understood by everyone.*		
Suffolk Coast & Heaths Area of Outstanding Natural Beauty (AONB) Management Plan 2018 -23	2018 - 2023	(Suffolk Coast and Heaths) The AONB Management plan sets out a vision for the area: '*An area of special wildlife, landscape, seascape and heritage qualities that are conserved and enhanced, addressing the needs of people living, working and visiting the AONB.*'	Management plan objectives include: 1. Landscape The Management Plan has the objective to conserve and enhance the natural beauty and special qualities of the AONB and statutory bodies, public, private and third sector organisations pay regard to the purposes of the AONB. 2.Coast and Estuaries The Plan has the objective that decision making relating to the coast and its estuaries pays due regard to the purposes of the AONB and that the associated habitats are conserved and enhanced. 3. Land Use and Wildlife The Plan has the objective to ensure development decisions have regard to the purpose of the AONB designation. The Plan seeks to ensure that farming is profitable and sustainable and contributes to the purposes of the AONB.In addition, it seeks to ensure positive management of AONB landscapes and wildlife habitat, remove or mitigate features that detract from the natural beauty of the area. 4. Enjoying the Area The Plan has the objective to support tourism where it is inclusive, sustainable and supports the purpose of the designation. It further seeks to inform residents and visitors of the natural beauty and special qualities of the AONB that in turn supports responsible access. 5. Working together The Plan seeks to encourage organisations to work together to deliver the vision of the Plan and the objectives of the AONB designation, to conserve and enhance natural beauty.	(Suffolk Coast and Heaths Partnership, 2018)
Cultural Heritage and Archaeology				
European Convention on	2001	(Council of Europe)		(Council for Independent

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
the Protection of Archaeological Heritage		The European Convention on the Protection of the Archaeological Heritage (revised), was ratified by the UK government in 2001, and came into effect in March 2021. The convention derives from the original Convention on the Protection of the Archaeological Heritage (London 1969), The convention recognises the holisitic nature of the historic environment and seeks to protect all aspects of it.		Archaeology, 2001)
The Convention for the Protection of the Architectural Heritage of Europe	1985	The Convention was signed in Granada and outlines legislative measures and protections to safeguard the cultural heritage of the European states as well as conservation policies to protect the architectural heritage.	Among the measures recommended by the Convention are: 1. conservation of the architectural heritage as a component of town planning, 2. adaptive reuse of buildings, training in traditional crafts involved in conservation and restoration, 3. limiting public access as a conservation measure, public awareness and educational programs and support for training, and 4. technical assistance and exchange of information.	
Planning (Listed Building and Conservation Areas) Act 1990	1990	This Act was made in 1990, and subsequently amended in 2009.	This Act details the statutory protection afforded to Listed Buildings. Under Section 66 (1) of the Act, planning authorities are instructed to have special regard to the desirability of preserving a Listed Building, its setting, or any features of special architectural or historic interest that it possesses. It also introduces the concept of areas of archaeological importance.	
Ancient Monuments and Archaeological Areas Act 1979	1979	This Act was made in 1990, and subsequently amended in 2016, 2017 and 2021.	This Act (as amended) provides for the protection of Scheduled Monuments, which are by definition of national importance, but does not afford any protection to their settings.	
The Government's statement on the historic environment for England 2010	2010		Six broad strategic aims are identified, including: 1. Strategic Leadership: Ensure that relevant policy, guidance, and standards across Government emphasize our responsibility to manage England's heritage for present and future generations 2. Protective Framework: Ensure that all heritage assets are afforded an appropriate and effective level of protection, while allowing, where appropriate, for well managed and intelligent change. 3. Local Capacity: Encourage structures, skills and systems at a local level which: promote an early understanding of heritage in the context of development; ensure that local decision makers have access to the expertise they need; and provide sufficiently skilled people to execute proposed changes sensitively and sympathetically. 4. Public Involvement: Promote opportunities to place people and communities at the centre of the designation and management of their local	(Department for Digital, Culture, Media and Sport, 2013)

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
			historic environment and to make use of heritage as a focus for learning and community identity at all levels. 5. Direct Ownership: Ensure all heritage assets in public ownership meet appropriate standards of care and use while allowing, where appropriate, for well managed and intelligent change. 6. Sustainable Future: Seek to promote the role of the historic environment within the Government's response to climate change and as part of its sustainable development agenda.	
Soils, Geology and Contaminated Land				
Essex Minerals Local Plan Essex Minerals Local Plan Review	2014 2021	(Essex County Council) ECC is the Minerals Planning Authority for Essex. This Plan forms part of the statutory 'Development Plan' for Essex LPAs. The MLP is currently being reviewed. Reg 18 consultation finished 29 April 2021 – see below. Consultation commencing 18th March 2021 for 6 weeks.		(Essex County Council, 2014)
Material Assets and Resources				
National Transport Policy - Transport Investment Strategy	2017	(Department for Transport) This strategy sets out the Department for Transport's priorities and approach for future transport investment decisions and explains how transport investment can deliver a stronger, fairer Britain. The transport investment strategy is a vital part of the government's industrial strategy and plan for Britain. It builds on the progress made in recent years to upgrade the national road and rail network.	The Transport Investment Strategy seeks to: ▪ create a more reliable, less congested, and better-connected transport network that works for the users who rely on it; ▪ build a stronger, more balanced economy by enhancing productivity and responding to local growth priorities; ▪ enhance our global competitiveness by making Britain a more attractive place to trade and invest; support the creation of new housing	(Department for Transport, 2017)
National Road Policy - Draft Road Investment Strategy 2 (RIS2)	2020-2025	(Department for Transport) In 2014, the Government reformed the way that England's strategic roads were funded and managed. While safety remained the number one focus, the new arrangements also gave new emphasis for customer service and delivery. This second Road Investment Strategy (RIS2) sets a long-term strategic vision for the network.	During this strategy, sub-national transport bodies such as Transport East have emerged as important partners, with strategies providing robust information's on the priorities for each part of the country. The aspirations of these bodies are recognised, particularly as they progress in maturity to work even more closely on the development of the next RIS.	(Department for Transport, 2020)

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		Through this investment the aim is to make the network safer, more reliable, and more 4 Road Investment Strategy 2: 2020–2025 sensitive to the places through which it runs. With a stronger focus on the differing needs of road users and adoption of new working practices and technologies, we want people using the network to enjoy smoother, more consistent journeys. By making the most of green infrastructure and good design, we want people living alongside the network to experience less noise, light and air pollution. And this RIS must support the Government's wider plans for decarbonising road transport.		
National Planning Policy - National Planning Policy Framework	2012 Revised 2019	(Ministry of Housing, Communities and Local Government) The National Planning Policy Framework (NPPF) sets out the Government's economic, environmental and social planning policies for England. Taken together these polices articulate the Government's vision for sustainable development, which should be interpreted and applied locally to meet local aspirations. The framework replaces all existing Planning Policy Statements and Planning Policy Guidance Notes. The NPPF recognises that the purpose of the planning system is to achieve sustainable development, which can be achieved when economic, social and environmental gains are sought jointly. In this, contributing to protecting and enhancing our natural, built and historic environment, and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy. See separate National Planning Statements for Airports, Ports and Road networks	Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives): a) an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure; b) a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and c) an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating	(Ministry of Housing, Communities & Local Government, 2019)
Connecting people: A Strategic Vision for Rail	2017	The strategy sets out an investment strategy for improving reliability and expanding the network.	The strategy identifies priorities for investment in the network and also in improving customer experience and support innovations and support improvements of the rail freight network	(DfT 2017)
East of England Route Strategy	2015	(Highways England)	Strategic key themes: ▪ Supporting Economic growth, ▪ More free flowing network	(Highways England, 2017)

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Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		This strategy aims to improve the strategic road network (SRN) which includes the A47 (Norwich to Yarmouth) and A12 (Yarmouth to Lowestoft) to provide a better service for road users and support a growing economy. Although due to be revised from 2021, the strategy sets out priorities extending to 2040 where it is envisaged the SRN will work harmoniously with its surroundings, providing less impact of communities and environment. Highways England are also committed to ongoing liaison with other road responders to reopen the network after major incidents including floods.	▪ Safe and serviceable network ▪ Improved environment ▪ More accessible and integrated network	
Transport for South East Transport Strategy	2020-2050	(Transport for South East) Transport for the South East's vision is: By 2050, the South East of England will be a leading global region for net-zero carbon, sustainable economic growth where integrated transport, digital and energy networks have delivered a step change in connectivity and environmental quality. A high-quality, reliable, safe and accessible transport network will offer seamless door-to-door journeys enabling our businesses to compete and trade more effectively in the global marketplace and giving our residents and visitors the highest quality of life	The strategy has three strategic goals aligning with the three pillars of sustainability, with a number of priorities for achieving each goal. Economy: Improve productivity and attract investment to grow the economy and better compete in the global marketplace Improving connectivity between major economic hubs, ports and airports. - More reliable journeys. - A more resilient network. - Better integrated land use and transport planning. - A digitally smart transport network Society: Improve health, safety, wellbeing, quality of life and access to opportunities for everyone. - Promoting active travel and healthier lifestyles. - Improving air quality. - An affordable, accessible transport network that's simpler to use. - A more integrated transport network where it is easier to plan and pay for door-to-door journeys. - A safer transport network Environment: Protect and enhance the South East's unique natural and historic environment - Reducing carbon emission to net zero by 2050 at the latest. - Reducing the impact of, and the need to, travel. - Protecting our natural, built and historic environments. - Improving biodiversity. - Minimising resource and energy consumption	(Transport for South East 2020)

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
England's Economic Heartland Transport Strategy		(England's Economic Heartland) Ambition: *'To support sustainable growth and improve quality of life and wellbeing through a world-class, decarbonised transport system which harnesses the region's global expertise in technology and innovation to unlock new opportunities for residents and businesses, in a way that benefits the UK as a whole'*	The transport strategy's overarching aim is to support sustainable economic growth, with an ambition to achieve net carbon emissions from transport by 2040. The five point plan of action covers the following focus areas: 1. Focus on decarbonisation of the transport system by harnessing innovation and supporting solutions which create green economic opportunities 2. Promote investment in digital infrastructure as a means of improving connectivity 3. Use delivery of East West Rail and mass rapid transit systems as the catalyst for the transformation of our strategic public transport networks 4. Champion increased investment in active travel and shared transport solutions to improve local connectivity to ensure that everyone has the opportunity to realise their potential 5. Ensure that our freight and logistics needs continue to be met whilst lowering the environmental impact of their delivery	(England's Economic Heartland,2021).
Mayors' London Transport Strategy	2018 -	(Mayor of London) The strategy uses the Healthy Streets Approach, which makes health and personal experience a priority within the strategy. The strategy is supported by a number of action plans, including walking action plan, vision zero action plan, freight and servicing action plan and the cycling action plan.	A primary aim of the transport strategy is for 80% of all trips in London to be made on foot, by cycle or using public transport by 2041. Due to the healthy streets approach, the policies included in the strategy all contribute to improving safety, contributing to decarbonisation. Reducing accidents, emissions and congestion. The strategy also aims to enhance the natural and built environment through protecting and enhancing green infrastructure, and protecting designated spaces. The 9th policy related to climate resilience aiming to become resilient to climate change and severe weather. Refer to the strategy for all strategy policy.	(Mayor of London, 2018)
Midlands Connect Transport Strategy Refresh (Draft)		(Midlands Connect) Due to be published at the end of 2021, this draft strategy refresh includes refreshed objectives and areas of focus to achieve the future of the region, in particular, looking beyond covid-19 pandemic.		(Midlands Connect, 2021).
Midlands Connect Strategy	2017 -	(Midlands Connect)		(Midlands Connect, 2017)

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		The Midlands Connect Strategy aims to transform the economy and improve quality of life. Early priorities set in the strategy are all related to connectivity, including regionally connected, UK connected, Resiliently connected, HS2 connected, globally connected and intelligently connected.		
Thurrock Transport Strategy	2013 – 2026	(Thurrock Council) The Transport Strategy for Thurrock has overarching themes to achieve the vision: ▪ Create a great place for learning and opportunity ▪ Encourage and promote job creation and economic prosperity ▪ Build pride, responsibility and respect to create safer communities ▪ Improve health and well-being Protect and promote our clean and green environment	The strategy has a number of strategic priorities: ▪ Sustainable growth ▪ Improves access ▪ Integrate with other service providers ▪ Encourage active transport (walking and cycling) ▪ Mobility and access for all ▪ Transport Interchange ▪ Community transport	(Thurrock Council, 2013)
Southend Local Transport Plan 3	2011 – 2026	(Southend Borough Council) The Local Transport Plan aims to contribute to the achievement of stronger and safer communities. The LTP produced for Southend has a number of relevant key themes, which include; ▪ A safer borough ▪ Reduced inequalities (both for health and wellbeing) for a more accessible borough ▪ Minimise environmental impacts and promote sustainable practise ▪ Enhance and maintain a sustainable local economy	Some policies identified within the LTP include: Seek to reduce congestion ▪ Increase the resilience of the transport network to the effects of climate change ▪ Encourage the use of sustainable modes of travel, and public transport	(Southend on sea borough council, 2015)
The Essex Transport Strategy: The Local Transport Plan	2011	(Essex Highways) The Local Transport Plan sets out ambitions for improving transport in Essex. Compared to previous Local Transport Plans, this current LTP (LTP3) is wider in scope and provides a framework for efficient and effective implementation of all transport provided by or on behalf of the council.	Essex Highways vision for transport in Essex is, *"a transport system which supports sustainable economic growth and helps deliver the best quality of life for the residents of Essex."* Key outcome and challenges identified within the strategy: 1. Provide connectivity for Essex communities and international gateways to support sustainable economic growth and regeneration	(Essex County Council, 2011)

Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
		Essex Highways have identified five key 'outcomes' which the strategy aims to achieve. These are to: 1. Provide connectivity for Essex communities and international gateways to support sustainable economic growth and regeneration 2. Reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology 3. Improve safety on the transport network and enhance and promote a safe travelling environment 4. Secure and maintain all transport assets to an appropriate standard and ensure that the network is available for use 5. Provide sustainable access and travel choice for Essex residents to help create sustainable communities.	2. Reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology 3. Improve safety on the transport network and enhance and promote a safe travelling environment 4. Secure and maintain all transport assets to an appropriate standard and ensure that the network is available for use 5. Provide sustainable access and travel choice for Essex residents to help create sustainable communities	
Essex Rail Strategy	2006-2011	(Essex County Council) The Strategy available is out of date, however some relevant objectives and policy guidance may still be applicable.		(Essex County Council, 2005)
Highways Development Management	2011	(Essex County Council) These policies set out how the Highway Authority will protect the highway network for the safe and efficient movement of people and goods by all modes of travel. It sets out a full range of policies.	The policies set out within this document are currently being reviewed, alongside the Essex Speed Management Strategy and the Essex Road Hierarchy. Following the review of all three documents a decision will be made with regards to how the information set out in these three documents will be presented. ECC officers will keep relevant partners aware of future work programmes.	(Essex County Council, 2011)
Essex and Southend-on-Sea Waste Local Plan	2017	ECC and Southend-on-Sea Borough Council (SBC) are Waste Planning Authorities (WPAs) and as such are required to prepare a Waste Local Plan. This plan is the Waste Plan for the administrative areas of Southend and Essex. This plan is part of the statutory development plan for Essex LPAs.		(Essex County Council and Southend-on-Sea Borough Council, 2017)

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Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
Norfolk Strategic Infrastructure Delivery Plan	2020-2030	(Norfolk County Council) The strategic Infrastructure Delivery Plan (SIDP) sets out Norfolk's high-level priorities for the infrastructure sector for the next 10 years, which is reviewed and updated annually in line with newly proposed projects The SIDP looks at road, rail, utility, sustainable, education and regeneration projects	This Delivery Plan aligns with other local PPS including infrastructure plans, the Norfolk and Suffolk Economic Strategy and the district councils' local plans. All projects within the SIDP are under local authority control, set up with a committed delivery route and identified in an existing plan. All plans are also designed to deliver significant housing and jobs growth.	(Norfolk County Council, 2020a)
Norfolk Transport Asset Management Plan	2020/2021-2024/2025	(Norfolk County Council) The Transport Asset Management Plan is Norfolk County Councils strategic approach to allocating resources for highways infrastructure, for both current and future users. Part 1 of the Transport Asset Management plan looks at policy and overall strategy, with part 2 assessing life cycle plans.	The strategic aims are: ▪ Manage and maintain the transport network to an appropriate standard ▪ Deliver sustainable growth ▪ Enhance strategic connections ▪ Reduce emissions ▪ Improve road safety Improve accessibility	(Norfolk County Council, 2020b)
Norfolk County Council Local Transport Plan	2020-2036 DRAFT	(Norfolk County Council) The Local Transport Plan sets out Norfolk County Council's plans, policies and programmes on transport and transport infrastructure. The plan details how the council will deliver a transport network in Norfolk through identifying the important projects and programmes, and in their design and direct delivery. The plan also shows how the council will seek to influence our key partners in government, communities, the commercial sector and the third sector.	The Local Transport Plan will be looking at the future of transport infrastructure in key areas: ▪ Embracing the Future ▪ Delivering a Sustainable Norfolk ▪ Enhancing Connectivity ▪ Enhancing Norfolk's Quality of Life ▪ Increasing Accessibility ▪ Improving Transport Safety A Well Managed and Maintained Transport Network.	(Norfolk County Council, 2020c)
Suffolk County Council Local Transport Plan	2011-2031	(Suffolk County Council) The Suffolk Local Transport Plan 2011-2031 sets out the long term transport strategy for Suffolk. Given Suffolk County Council's key policy objective of promoting and aiding economic resilience and private sector led growth, this plan indicates how transport will play its part in supporting and facilitating future sustainable economic growth by: ▪ maintaining (and in the future improving) our transport networks ▪ tackling congestion ▪ improving access to jobs and markets encouraging a shift to more sustainable travel patterns	The plan has several priorities, such as: ▪ A prosperous and vibrant economy ▪ Improve connectivity and accessibility ▪ Maintain core transport networks. ▪ Balance capacity and demand for travel, through increasing the use of sustainable transport and reducing need for travel ▪ Improve access to jobs and commercial markets for residents and businesses based in the county ▪ Creating the greenest county ▪ Reduced emissions from transport, including road maintenance ▪ Maintaining resilience of transport networks (e.g. coping with flooding, pot holes, winter damage) ▪ Reduced air pollutant emissions	(Suffolk County Council, 2011)

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Plan title	Period/Date	Document Overview	Aims/Objectives	Reference
			▪ Safe, healthy and inclusive communities (Protect vulnerable people and reduce inequalities) ▪ Reducing the number of casualties on the transport network ▪ Reducing impact of poor air quality on local communities ▪ Learning and skills for the future (Transform learning and skills) Improving accessibility to schools, colleges, universities and other places of learning	
Suffolk Rail Prospectus	2012-2032	(Suffolk County Council) This Suffolk Rail Prospectus sets out the county's rail priorities for the next 20 years. A decent rail service is vital to growing our county's economy, attracting investment, creating jobs and supporting a growing population. This prospectus compliments the East Anglia Rail Prospectus, a document produced by Suffolk and surrounding County Councils (Essex, Norfolk and Cambridgeshire) as well as New Anglia Local Enterprise Partnership.	Suffolk County priorities: ▪ Commitment by Government for new rolling stock on intercity services between Norwich and London Liverpool Street and for faster and more reliable journeys on that route. ▪ The introduction of a direct hourly service between Ipswich and Peterborough. ▪ Capacity improvements and electrification of the line from Felixstowe through to Peterborough and on to Birmingham to improve freight and passenger services. ▪ Building on the introduction of an hourly service between Ipswich and Lowestoft by working towards shorter journey times and the restoration of direct services between Lowestoft and London. ▪ More capacity and better trains between Ipswich and Cambridge with a future aim of increasing the frequency to half-hourly. Working towards a fast and frequent rail service connecting the key centres of growth in the region: Ipswich, Cambridge and Norwich.	(Suffolk County Council, No Date)
Natural Capital				
The Natural Capital Evidence Compendium for Norfolk and Suffolk	2020	(University of East Anglia's School of Environment) The Natural Capital Evidence Compendium for Norfolk and Suffolk is an assessment of the natural assets across the counties. The assessment identifies potential risks, particularly associated with climate change. The assessment focuses on six key areas: ▪ Land ▪ Soil and Sub-surface ▪ Habitats and Species ▪ Freshwater ▪ Coast and Marine ▪ Atmosphere	The assessment recommends areas for priority action which include: ▪ Water ▪ Land management ▪ Greenhouse Gasses ▪ Carbon Sequestration ▪ Bio-security ▪ Resilience	(University of East Anglia, 2020)

Additional Regional Plans within Transport East Region		
Norfolk and Suffolk Unlimited Local Industrial Strategy	Norfolk and Suffolk Unlimited Local Industrial Strategy	Norfolk and Suffolk Unlimited Local Industrial Strategy
Norfolk and Suffolk Economic Strategy	Norfolk and Suffolk Economic Strategy	Norfolk and Suffolk Economic Strategy
Report on Greater Essex Economy	Report on Greater Essex Economy	Report on Greater Essex Economy
A Strategy for Rural Essex Integrated Transport	A Strategy for Rural Essex Integrated Transport	A Strategy for Rural Essex Integrated Transport
Strategy for Norfolk and Suffolk	Strategy for Norfolk and Suffolk	Strategy for Norfolk and Suffolk
Local Energy East Strategy	Local Energy East Strategy	Local Energy East Strategy
Norfolk and Suffolk Covid-19 Economic Recovery Restart Plan	Norfolk and Suffolk Covid-19 Economic Recovery Restart Plan	Norfolk and Suffolk Covid-19 Economic Recovery Restart Plan
New Growth Norfolk Rural Strategy	New Growth Norfolk Rural Strategy	New Growth Norfolk Rural Strategy
South East Local Enterprise Partnership - Smarter Faster Together	South East Local Enterprise Partnership - Smarter Faster Together	South East Local Enterprise Partnership - Smarter Faster Together
South East Local Enterprise Partnership - Covid-19 Economic Response	South East Local Enterprise Partnership - Covid-19 Economic Response	South East Local Enterprise Partnership - Covid-19 Economic Response

Local Development Plans within Transport East Region		
Ipswich Borough Council Local Plan: Core Strategy and Policies Development Plan Document Review- Final Draft	East Suffolk Council - Suffolk Coastal Local Plan	Braintree Local Plan Publication Draft for Consultation
North Norfolk Local Plan 2016 - 2036 - First Draft Local Plan (Part1)	West Suffolk Local Plan Regulation 18 Issues and Options October 2020	Harlow Pre Submission Publication Local Plan
The Greater Norwich Local Plan - Growing Stronger Communities together Draft Strategy	Babergh and Mid Suffolk Joint Local Plan - Preferred Options (Regulation 18) Consultation July 2019	Epping Forest District Local Plan Submission Version 2017
Breckland Council Local Plan 2019	Tendring District Local Plan Publication Draft	Chelmsford Local Plan

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Great Yarmouth Local Plan Core Strategy 2013-2030	The Publication Draft Stage of the Colchester Local Plan 2017-2033	Maldon District Local Development Plan
East Suffolk Council - Waveney Local Plan	New Castle Point Local Plan Pre Submission Plan 2018-2033	Basildon Borough Council Draft Local Plan
Kings Lynn and West Norfolk Local Plan Review	Brentwood Pre Submission Local Plan	Rochford District Council New Local Plan Issues and Options Document
Thurrock Council - Local Plan, Issues and Options (Stage 2) December 2018	Southend New Local Plan Consultation: Issues and Options	Local Plan for the Broads

Appendix C. Designated sites of international importance

Table C.1 Designated sites of international importance

(*denotes sites with marine components)

Site	UK Reference	Hectares
SACs		
Alde, Ore and Butley Estuaries*	UK0030076	1,632.63
Benacre to Easton Bavents Lagoons	UK0013104	326.70
Breckland	UK0019865	7,543.50
Devils Dyke	UK0030037	7.68
Dew's Ponds	UK0030133	6.59
Epping Forest	UK0012720	1,630.74
Essex Estuaries*	UK0013690	46,109.95
Fenland	UK0014782	619.25
Hamford Water	UK0030377	50.34
Minsmere to Walberswick Heaths & Marshes	UK0012809	1,256.57
Norfolk Valley Fens	UK0012892	616.48
North Norfolk Coast*	UK0019838	3,148.60
Orfordness - Shingle Street*	UK0014780	888.00
Ouse Washes	UK0013011	332.61
Overstrand Cliffs0	UK0030232	29.82
Paston Great Barn	UK0030235	0.96
Rex Graham Reserve	UK0019866	2.65

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Site	UK Reference	Hectares
River Wensum	UK0012647	383.79
Roydon Common & Dersingham Bog	UK0012801	353.45
Staverton Park & The Thicks, Wantisden	UK0012741	80.28
The Broads	UK0013577	5,889.43
The Wash and North Norfolk Coast*	UK0017075	107,718.00
Waveney & Little Ouse Valley Fens	UK0012882	193.37
Winterton-Horsey Dunes	UK0013043	426.96
Offshore SACs		
Southern North Sea*	UK0030395	3,695,054.00
SPAs		
Abberton Reservoir	UK9009141	718.31
Alde-Ore Estuary*	UK9009112	2,403.50
Benacre to Easton Bavents	UK9009291	470.60
Benfleet and Southend Marshes*	UK9009171	2283.94
Blackwater Estuary (Mid-Essex Coast Phase 4)*	UK9009245	4403.38
Breckland	UK9009201	39,432.75
Breydon Water*	UK9009181	1,203.05
Broadland	UK9009253	5,508.88
Colne Estuary (Mid-Essex Coast Phase 2)*	UK9009243	2719.93
Crouch and Roach Estuaries (Mid-Essex Coast Phase 3)*	UK9009244	1,847.87
Deben Estuary*	UK9009261	981.08

Site	UK Reference	Hectares
Dengie (Mid-Essex Coast Phase 1)*	UK9009242	3,133.94
Foulness (Mid-Essex Coast Phase 5)*	UK9009246	10,940.64
Great Yarmouth North Denes	UK9009271	160.37
Greater Wash*	UK9020329	3,53577.86
Hamford Water*	UK9009131	3,532.56
Lee Valley	UK9012111	451.29
Minsmere-Walberswick*	UK9009101	2,019.11
North Norfolk Coast*	UK9009031	7,862.27
Ouse Washes	UK9008041	2,498.61
Sandlings	UK9020286	3,405.72
Stour and Orwell Estuaries*	UK9009121	2,163.98
Thames Estuary and Marshes*	UK9012021	4,083.47
The Wash*	UK9008021	62,044.14
Offshore SPAs		
Outer Thames Estuary*	UK9020309	392,451.66
Ramsar		
Abberton Reservoir	UK11001	726.20
Alde-Ore Estuary	UK11002	2,546.99
Benfleet and Southend Marshes	UK11006	2,251.31
Blackwater Estuary (Mid-Essex Coast Phase 4)	UK11007	4,395.15
Breydon Water	UK11008	1,202.94

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Site	UK Reference	Hectares
Broadland	UK11010	5,488.61
Chippenham Fen	UK11014	112.13
Colne Estuary (Mid-Essex Coast Phase 2)	UK11015	2,701.43
Crouch and Roach Estuaries (Mid-Essex Coast Phase 3)	UK11058	1,735.58
Deben Estuary	UK11017	978.93
Dengie (Mid-Essex Coast Phase 1)	UK11018	3,127.23
Dersingham Bog	UK11019	157.75
Foulness (Mid-Essex Coast Phase 5)	UK11026	10,932.95
Hamford Water	UK11028	2,187.21
Lee Valley	UK11034	447.87
Minsmere-Walberswick	UK11044	2,018.92
North Norfolk Coast	UK11048	7,862.39
Ouse Washes	UK11051	2,469.08
Redgrave & South Lopham Fens	UK11056	127.09
Roydon Common	UK11061	194.10
Stour and Orwell Estuaries	UK11067	3,676.92
Thames Estuary and Marshes	UK11069	5,589.00
The Wash	UK11072	62,211.66

Appendix D. Habitats and Ecosystem services

The following sections outline what each habitat type is comprised of and outlines the ecosystem services associated to them.

Coastal margins

Coastal margins in the UK consist of sand dunes, machair, saltmarsh, shingle, sea cliffs and coastal lagoons. The ecosystem services provided by coastal margins are identified in Table D.1.

Table D.1 Ecosystem services provided by coastal margins

Category	Ecosystem services
Provisioning and abiotic flows	Food, fish, carrier services
Regulating services	Carbon sequestration, flood regulation
Cultural services	Enabling recreation, enabling physical activity, supporting mental health, educational interactions, volunteering, nature-based tourism
Bundled services	Amenity, biodiversity, water quality, landscape, non-use values
Negative environmental effects	Disamenity, flood damage, invasive non-native species, greenhouse gas emissions

Enclosed farmland

Enclosed farmland comprises of arable, horticultural land and improved grassland as well as associated boundary features e.g. hedgerows. The ecosystem services provided by enclosed farmland are outlined in Table D.2.

Table D.2 Ecosystem services provided by enclosed farmland

Category	Ecosystem services
Provisioning and abiotic flows	Food, renewable energy, pollination, water supply, timber, peat extraction
Regulating services	Organic waste disposal, air filtration, carbon sequestration, flood regulation
Cultural services	Enabling recreation, enabling physical activity, supporting mental health, educational interactions, volunteering, nature-based tourism
Bundled services	Amenity, biodiversity, soil health, water quality, landscape, non-use values
Negative environmental effects	Air pollution, greenhouse gas emissions, water pollution, flood damage, invasive non-native species

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Freshwater

Freshwaters include open waters, wetlands and floodplains. The ecosystem services provided by these habitats are outlined in Table D.3.

Table D.3: Ecosystem services provided by freshwater

Category	Ecosystem services
Provisioning and abiotic flows	Water supply, fish capture, renewable energy, peat extraction, navigation services
Regulating services	Flood regulation, waste remediation
Cultural services	Enabling recreation, enabling physical activity, supporting mental health, educational interactions, volunteering, nature-based tourism
Bundled services	Amenity, biodiversity, water quality, landscape, non-use values
Negative environmental effects	Flood damage, water pollution, invasive non-native species

Marine

Marine environments are highly variable and are comprised of a very wide range of sub-habitats. The ecosystem services associated to marine environments are identified in Table D.4.

Table D.4: Ecosystem services provided by marine environments

Category	Ecosystem services
Provisioning and abiotic flows	Fish and shellfish, renewable energy, oil and gas, minerals, navigation services
Regulating services	Waste remediation, carbon sequestration (storage)
Cultural services	Enabling recreation, enabling physical activity, supporting mental health, educational interactions, volunteering, nature-based tourism
Bundled services	Amenity, biodiversity, seascape, non-use values
Negative environmental effects	Flooding, disamenity

Mountain, moor and heathland

Mountain, moor and heathland habitats comprises upland heath, montane habitats and associated wetlands, rainfall-fed blanket bog in upland environments, and lowland habitats dominated by heather and gorse. Lowland heaths are highly fragmented, while mountains

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and upland moors and heaths provide the largest unfragmented semi-natural habitats in the UK. The ecosystem services provided by this habitat are presented in Table D.5.

Table D.5 Ecosystem services provided by mountain, moor and heathland

Category	Ecosystem services
Provisioning and abiotic flows	Food, timber, water supply, renewable energy, minerals
Regulating services	Carbon sequestration, flood regulation, waste remediation
Cultural services	Enabling recreation, enabling physical activity, supporting mental health, educational interactions, volunteering, nature-based tourism
Bundled services	Amenity, biodiversity, soil health, water quality, landscape, non-use values
Negative environmental effects	Greenhouse gas emissions, flood damage, invasive non-native species

Semi-natural grassland

Semi-natural grasslands are all grasslands unimproved for agricultural purposes. The ecosystem services associated with this habitat are presented in Table D.6.

Table D.6: Ecosystem services provided by semi-natural grassland

Category	Ecosystem services
Provisioning and abiotic flows	Food (wild)
Regulating services	Carbon sequestration, flood regulation, air filtration
Cultural services	Enabling recreation, enabling physical activity, supporting mental health, educational interactions, nature-based tourism, volunteering
Bundled services	Biodiversity, amenity, soil health, landscape, non-use values
Negative environmental effects	Air pollution, invasive non-native species

Urban

Urban areas in the UK cover just under 7% of land area and are home to 8 out of 10 people, often living at extremely high population densities. The ecosystem services provided by urban environments are outlined in Table D.7.

Table D.7 Ecosystem services provided by urban environments

Category	Ecosystem services

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Provisioning and abiotic flows	Food
Regulating services	Air filtration, noise attenuation, local temperature regulation, carbon sequestration, flood regulation
Cultural services	Enabling recreation, enabling physical activity, supporting mental health, educational interactions, volunteering
Bundled services	Amenity, biodiversity, soil health, water quality, landscape, non-use values
Negative environmental effects	Flood damage, disamenity, air pollution, greenhouse gas emissions, noise pollution, water quality, invasive non-native species

Woodland

Woodlands range from managed plantations to ancient, semi-natural woodlands, and in England woodland is dominated by broadleaves species. The ecosystem services provided by woodland are outlined in Table D.8.

Table D.8: Ecosystem services provided by woodland

Category	Ecosystem services
Provisioning and abiotic flows	Timber
Regulating services	Air filtration, noise attenuation, local temperature regulation, carbon sequestration, flood regulation
Cultural services	Enabling recreation, enabling physical activity, supporting mental health, educational interactions, volunteering, nature-based tourism
Bundled services	Amenity, biodiversity, soil health, water quality, landscape, non-use values
Negative environmental effects	Flood damage, invasive non-native species

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