A Better Connected Essex:
Local Transport Plan 4 (LTP4)

Integrated Sustainability Appraisal (ISA): Interim Report

July 2025

Essex County Council

About us

Place Services is a leading public sector provider of environmental assessment, planning, design and management services. Our combination of specialist skills and experience means that we are uniquely qualified to help public organisations meet the requirements of the planning process, create practical design solutions and deliver environmental stewardship.

Place Services has a proven track record of delivering sustainable, creative and effective solutions for the built environment. Our in-house expertise comprises a multidisciplinary team which includes planners, urban designers, landscape architects, flood specialists and public art consultants. Our approach is client led; we work alongside our clients to deliver services, projects and planning objectives in a collaborative and cost effective way.

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Glossary

Term (abbreviation)	Definition
Appropriate Assessment (AA)	The process and documentation associated with the statutory requirement under the EU Appropriate Assessment Habitats and Species Directive.
Best and Most Versatile Agricultural Land	Land identified by the Department for Environment, Food and Rural Affairs (Defra) as falling within classification grades 1, 2 or 3a, based on the physical characteristics of the land and the limits these impose upon its agricultural uses.
Blue Infrastructure	Blue landscape elements are linked to water. Examples include pools, ponds and pond systems, artificial buffer basins, Sustainable Drainage Systems and water courses.
Development Plan	A document setting out the local planning authority's policies and proposals for the development and use of land and buildings in the authority's area. This includes adopted Local Plans, neighbourhood plans and the London Plan, and is defined in section 38 of the Planning and Compulsory Purchase Act 2004. (Regional strategies remain part of the development plan until they are abolished by Order using powers taken in the Localism Act.
Environment Agency (EA)	A body that aims to prevent or minimise the effects of pollution on the environment and issues permits to monitor and control activities that handle or produce waste. It also provides up-to-date information on waste management and deals with other matters such as water issues, including flood protection advice.
Historic England (HE)	Advisors with responsibility for all aspects of protecting and promoting the historic environment. Historic England is responsible for advising the government on the listing of historic assets.
Environmental Impact Assessment (EIA) and Environmental Statement (ES)	Applicants for certain types of development, usually more significant schemes, are required to submit an environmental statement accompanying a planning application. This evaluates the likely environmental impacts of the development, together with an assessment of how the severity of the impacts could be mitigated.

Term (abbreviation)	Definition
Green Infrastructure (GI)	Green infrastructure includes parks, open spaces, playing fields, woodlands and also street trees, allotments, private gardens, green roofs and walls, sustainable drainage systems (SuDS) and soils. It can include rivers, streams, canals and other water bodies, sometimes called 'blue infrastructure.'
Groundwater	An important part of the natural water cycle present underground, within strata known as aquifers.
Habitats Regulation Assessment (HRA)	The assessment of the impacts of implementing a plan or policy on a Habitats site. It considers the impacts of a land use plan or project against the conservation objectives of the site and ascertains whether any impacts would adversely affect the integrity of them.
Habitats Site	As per the NPPF, any site which would be included within the definition at regulation 8 of the Conservation of Habitats and Species Regulations 2017 for the purpose of those regulations, including candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation, Special Protection Areas and any relevant Marine Sites.
Local Plan	A Development Plan Document prepared by district and other local planning authorities on matters of planning policy, housing and employment growth (and also minerals and waste planning), to guide development in their administrative area.
Local Planning Authority (LPA)	The local authority or council that is empowered by law to exercise planning functions. Often the local borough/ district/ city council. County councils are the authority for waste and minerals matters.
Local Transport Plan (LTP)	A statutory development plan prepared by a local transport authority setting out policies for the development of transport infrastructure within their administrative area and remit.
National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG)	Sets out the Government's planning policies for England and how these are expected to be applied. It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

Term (abbreviation)	Definition
Natural Capital	Natural capital is another term for the stock of renewable and non-renewable resources (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people.
Natural England (NE)	Body formed by bringing together English Nature, the landscape, access and recreation elements of the Countryside Agency and the environmental land management functions of the Rural Development Service.
Special Area Of Conservation (SAC)	A site designated under the European Community Habitats Directive, to protect internationally important natural habitats and species.
Statutory	Required by law (statute), usually through an Act of Parliament.
Strategic Environmental Assessment (SEA) & Sustainability Appraisal (SA)	SEAs integrate environmental considerations into the preparation and adoption of plans and programmes. They are required by the European Directive 2000/42/EC “on the assessment of the effects of certain plans and programmes on the environment” (the SEA Strategic Environmental Assessment Directive). Government guidance considers that it is possible to satisfy the requirements for Sustainability Appraisal (SA) and SEA through a single approach provided that the requirements of the SEA Directive are met. The environmental, economic and social effects of the plan are presented in the form of an iterative Environmental Report which informs each consultation stage of the Local Transport Plan’s development.
Traffic Assessment (TA)	The Local Validation Checklist states that a Transport Assessment (TA) is to be required where there is likely to be a significant amount of traffic generated. This is defined as generating in excess of 50pcu (passenger car units (PCU’s)) in the peak hour. PCU’s are a Traffic Assessment calculation of all types of vehicles as car equivalents: an HGV is 2 car units. A TA forms part of an Environmental Statement submitted with most applications requiring Environmental Impact Assessment (EIA). However smaller developments not requiring an EIA do not submit a TA.
Traffic Statement (TS)	A short, straightforward document, dealing with impacts on the transport network accompanying planning applications without providing detailed capacity assessments. A TS is required by the new validation checklists (June 2008) for all development that fall

Term (abbreviation)	Definition
	beneath the threshold for a TA but still have some form of material impact on the highway.

1. Introduction

1.1 Background

On behalf of Essex County Council (ECC), Place Services has been commissioned to undertake an independent Integrated Sustainability Appraisal (ISA) for the Essex Local Transport Plan. The ISA incorporates the requirements and subsequent stages relevant to Sustainability Appraisal (SA), Strategic Environmental Assessment (SEA), Health Impact Assessment (HIA) and Equalities Impact Assessment (EqIA). A Habitats Regulations Assessment (HRA) will be undertaken in conjunction with this ISA but presented separately.

1.2 The Local Transport Plan (LTP)

The Local Transport Plan (LTP) sets out the local transport authority's vision for transport in Essex covering the next 25 years to 2050. The LTP sets the strategy as to how the authority will deliver their objectives.

The Plan provides both a long-term plan for transport in Essex and make recommendations for short, medium and long-term transport improvements. The Plan sets out how the local transport authority propose to connect Essex's existing and future communities to enable residents to travel to where they want to go and allow local businesses to trade effectively. The Plan also sets out how the authority propose to create more sustainable places and communities; providing essential policy direction to inform our local planning authorities' Local Plans for growth and development.

1.3 The Requirement for an Integrated Sustainability Appraisal

1.3.1 Legislative requirements – SA and SEA

The legislative requirement for the Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA) elements of the ISA emanates from a high level national and international commitment to sustainable development. The most commonly used definition of sustainable development is that drawn up by the World Trade Commission on Environment and Development in 1987 which states that sustainable development is:

> *'Development that meets the needs of the present without compromising the ability of future generations to meet their own needs'*

This definition is consistent with the themes of the National Planning Policy Framework (NPPF), which draws upon The UK Sustainable Development Strategy Securing the Future's five 'guiding principles' of sustainable development: living within the planet's environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly.

SEA originates from the European Directive 2001/42/EC *"on the assessment of the effects of certain plans and programmes on the environment"* (the 'SEA Directive') which came into force in 2001. It seeks to increase the level of protection for the environment; integrate environmental considerations into the preparation and adoption of plans and programmes; and promote sustainable development. The Directive was transposed into English legislation in 2004 by the Environmental Assessment of Plans and Programmes Regulations (the 'SEA Regulations') which requires SEA to be carried out for plans or programmes,

> *'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.'*

This includes Local Plans. The aim of the SEA is to identify potentially significant environmental effects created as a result of the implementation of the plan or programme on issues such as:

> *'biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors' as specified in Annex 1(f) of the Directive.'*

SA examines the effects of proposed plans and programmes in a wider context, taking into account economic, social and environmental considerations in order to promote sustainable development. It is mandatory for Local Plans to undergo a Sustainability Appraisal in accordance with the Planning and Compulsory Purchase Act 2004 as amended by the Planning Act 2008, and in accordance with paragraph 165 of the NPPF.

Whilst the requirements to produce a SA and SEA are distinct, Government guidance considers that it is possible to satisfy the two requirements through a single approach providing that the requirements of the SEA Directive are met.

1.3.2 Legislative requirements – HIA

There is no statutory duty in place to undertake a Health Impact Assessment (HIA) as part of undertaking a Local Plan, however the schemes identified within the Local Transport Plan may have the potential to impact on health, which could be a cause for concern amongst members of the public. HIA can have a strong role in the plan-making process, as well as for individual projects that emanate from the Plan.

The Department of Health provides a brief overview of what a HIA of a policy document (in the case of this assessment, a Local Transport Plan) should achieve:

- Screen the Plan area to determine if the Plan is likely to result in health impacts, paying specific mind to any local inequality issues;
- Provide recommendations throughout the decision making process, allowing for responses to be made to any issues that are raised;

- Seek to maximise positive impacts, while minimising the negative impacts of the Plan.

Appendix 1 of this ISA Report includes the HIA Screening of the LTP4.

1.3.3 Legislative requirements – EqIA

An Equality Impact Assessment (EqIA) is an assessment designed to assist authorities to ensure that policies are fair and do not present barriers to participation or disadvantage any protected groups from participation. EqIAs help to ensure that:

- The potential effects of the Plan are understood by assessing the impacts on different groups;
- Any adverse impacts are identified, and actions identified to remove or mitigate them; and
- Policies are based on evidence and clearly justified.

As EqIA is an evidence-led process of assessment, consultation with key groups is crucial to ensuring that equality duties are met. At this stage of the LTP4 and the ISA processes, no consultation has formally been undertaken. It is therefore considered that this ISA Report be updated post-consultation with the requirements of EqIA included, alongside any other necessary assessment details that may emanate from consultation, prior to adoption of the LTP4. Appendix 2 of this ISA Report offers a provisional assessment.

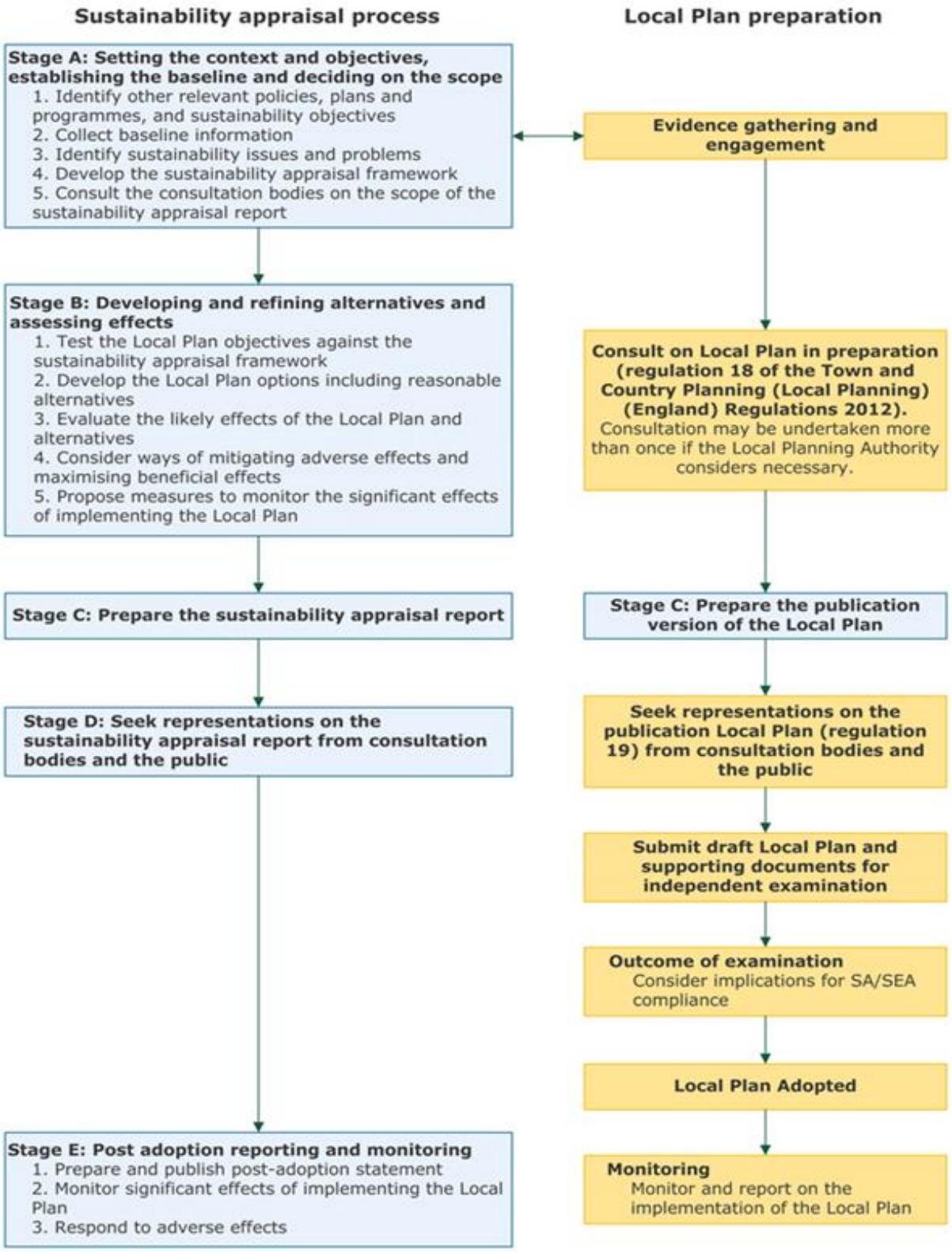
1.3.4 Legislative requirements – HRA

Additionally, this ISA Report considers the requirements of Habitats Regulations Assessment (HRA). Due to the technical scope of those requirements however, a separate HRA has been produced to accompany the LTP4. For more detail on that process, please refer to that assessment.

1.4 The Sustainability Appraisal Process

The methodology adopted for the SA of the Local Transport Plan at this stage follows that of the Sustainability Appraisal process. The following 5 sequential stages are documented below.

Figure 1: Stages in the Sustainability Appraisal Process and Plan Preparation



Source: Planning Practice Guidance – Sustainability appraisal requirements for local plans (Paragraph: 013 Reference ID: 11-013-20140306 Revision date: 06 03 2014)

1.5 The Aim and Structure of this Report

The aim of this Report is to respond to Stages A, B, and C of the SA process shown in the previous figure; notably to:

- Set the context and objectives of the ISA and establish the scope of the appraisal (Stage A)
- Test the LTP content against the integrated sustainability appraisal framework (Stage B1)
- Develop the LTP options including reasonable alternatives (Stage B2)
- Evaluate the likely effects of the LTP content and alternatives (Stage B3)
- Consider ways of mitigating adverse effects and maximising beneficial effects (Stage B4)
- Propose measures to monitor the significant effects of implementing the LTP (Stage B5)
- Prepare the Integrated Sustainability Appraisal Report (this Report, Stage C)

These tasks are outlined in more detail within the below sub-headings.

1.5.1 Testing the Plan objectives against the SA Objectives

The Plan will likely include a number of key objectives. This section of the Plan will represent the key aims that the plan-makers wish to achieve in formulating the Plan.

Although findings will be presented to the plan-makers at an early stage as part of an iterative process, this ISA Report will present these findings in the form of a matrix that explores whether the objectives are compatible and whether they need to be expanded to ensure that the Plan seeks to minimise any possible environmental effects and maximise those that are indicatively positive. A narrative will be provided that will make any such recommendations.

1.5.2 Developing strategic alternatives

A key part of the ISA process is the identification of all ‘reasonable’ alternatives to the Plan’s content. ‘Reasonable’ alternatives need to be fully considered by the plan-makers and assessed within this ISA Report. They must be realistic, achievable and sufficiently distinct from the preferred strategy to warrant separate assessment.

1.5.3 Predicting the effects of the Plan including alternatives

It is integral that all elements of the Plan that may give rise to any environmental, social or

economic effects are assessed within the ISA against the SA Objectives, as well as the alternative approaches as required of Stage B2. Commonly, this includes all policy options.

Plan content and alternative approaches must be assessed to the same level of detail to create a 'level playing field' and against the ISA Framework presented within this Report. This will be done using quantitative information as far as possible. Where there are data gaps in the assessment, assumptions ('qualitative' judgements) will be made consistently and fairly and documented in this Report.

1.5.4 Evaluating the effects of the draft Plan, including alternatives

In addition to the process explained in Stage B3, an evaluation of the effects of the Plan and alternatives is required of the ISA process. This will be presented in the form of a narrative that explains the various merits and demerits of the Plan and alternative approaches and whether mitigation can be implemented or sought to eradicate or minimise any negative effects. It should be noted however, as set out in Paragraph 009 of Planning Practice Guidance for Strategic environmental assessment and sustainability appraisal, that 'the Sustainability Appraisal should only focus on what is needed to assess the likely significant effects of the plan. It should focus on the environmental, economic and social impacts that are likely to be significant. It does not need to be done in any more detail, or using more resources, than is considered to be appropriate for the content and level of detail in the Local Plan.'

1.5.5 Considering ways of mitigating adverse effects

Stage B5 will include the consideration of whether mitigation can be applied to ensure that any of the Plan's content can be made acceptable in planning terms. This will be presented in the form of recommendations. Although the iterative nature of ISA and plan-making will ensure that recommendations are factored into the final Plan, this Report will chronicle those recommendations made throughout the process, and whether they have been taken on-board. This stage will also include recommendations for maximising positive effects, where possible.

1.5.6 Proposing measures to monitor the environmental effects of Plan implementation

The last step of Stage B is to include a list of possible indicators that can be collected to monitor those effects highlighted within this Report. These will include suggested data sources relevant for all of the ISA Objectives.

2. Setting the Scope for the ISA Report

2.1 Introduction to Scoping

The ISA of the LTP4 is required to set the scope for the assessment of options and Plan content relevant to the Plan area. Stage A of the SA process sets out how the context and the objectives of the SEA should be set, whilst establishing the baseline relevant to the Plan area. This involves:

- Identifying other relevant policies, plans and programmes, and sustainability objectives;
- Collecting baseline information;
- Identifying sustainability issues and problems; and
- Developing the ISA frameworks (formulating relevant criteria against which the Plan's content is assessed).

The following section outlines an overview of the relevant plans and programmes and the baseline information profile for the Essex area and where relevant beyond. More detail is provided within the Annexes document accompanying this ISA Report.

2.2.2 Contextual Review of other relevant Plans and Programmes

The LTP must have regard to existing policies, plans and programmes at national and regional levels and strengthen and support other plans and strategies. It is therefore important to identify and review those policies, plans and programmes which are likely to influence the Plan at an early stage. The content of these plans and programmes can also assist in the identification of any conflicting content of plans and programmes in accumulation with the Plan. Local supporting documents have also been included within this list as they will significantly shape policies and decisions in the area.

It is recognised that no list of plans or programmes can be definitive and as a result this report describes only the key documents which influence the Plan. Table 1 outlines the key documents, whilst a comprehensive description of these documents together with their relevance to the Plan is provided within Annex A.

Table 1: List of key other plans and programmes

International Plans and Programmes
European Landscape Convention (Florence, 2002)

European Union Water Framework Directive 2000
European Union Nitrates Directive 1991
European Union Noise Directive 2002
European Union Floods Directive 2007
European Union Air Quality Directive 2008 (2008/50/EC) and previous directives (96/62/EC; 99/30/EC; 2000/69/EC & 2002/3/EC)
European Union Directive on the Conservation of Wild Birds 2009
European Union Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora 1992
European Community Biodiversity Strategy to 2020
United Nations Kyoto Protocol
World Commission on Environment and Development 'Our Common Future' 1987
The World Summit on Sustainable Development Johannesburg Summit 2002
Environmental Assessment of Plans and Programmes Regulations 2004 (the SEA Regulations)
The Conservation of Habitats and Species Regulations, 2010
The Industrial Emissions Directive 2010
European Convention on the Protection of the Archaeological Heritage (Valletta, 1992)
National Plans and Programmes

The Conservation of Habitats and Species Regulations, 2017 (as amended)
Safeguarding our Soils: A Strategy for England (Defra, 2009)
The Countryside and Rights of Way (CRoW) Act, 2000
Water Resources Strategy for England and Wales, 2009
Flood and Water Management Act, 2010
Underground, Under Threat – Groundwater protection: policy and practice (GP3)
Planning (Listed Buildings and Conservation Areas) Act, 1990
Ancient Monuments & Archaeological Areas Act 1979
The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, 2007
(National) Planning Practice Guidance (updated)
National Planning Policy Framework
County / Regional Plans and Programmes
Essex Minerals Local Plan (2014) (and Review – ongoing)
Essex and Southend-on-Sea Waste Local Plan (2017)
Local Level Plans and Programmes
Basildon Borough Council Revised Publication Local Plan 2014-2034 (withdrawn)
Braintree District Local Plan 2033 (Section 1 and 2) (2022)

Brentwood Local Plan 2016-2033 (2022)
Castle Point Local Plan (emerging)
Chelmsford Local Plan 2013-2036 (2020) and Issues and Options Consultation Document (plan review) (2022)
Colchester Local Plan 2017-2033 (Section 1 and 2) (2021)
Epping Forest District Local Plan 2011 to 2033 (2023)
Harlow Local Development Plan (2020)
Maldon District Council Local Development Plan (2014-2029) (2017) and Local Development Plan Review 2021+
Rochford District Council Local Plan (2025-2040) (emerging)
Tendring District Council Local Plan 2013-2033 and Beyond (Section 1 and 2) (2022)
Uttlesford Local Plan 2021 to 2041 Regulation 18 (2023)
Southend-on-Sea New Local Plan Refining the Plan Options (2021)
Thurrock Local Plan Initial Proposals (2023) (emerging)

2.2.3 Baseline summary of the County relevant to the remit of the Plan

The SA Directive requires the production of the following information:

> *'The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;" Annex 1(b);*
>
> *The environmental characteristics of areas likely to be significantly affected;" Annex 1(c); and*

Any existing problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance such as areas designated pursuant to Directives 79/409/EEC and 92/43/ECC" Annex 1(d).'

Annex B to this Report outlines the baseline information profile for the Plan area, and where relevant further afield. The baseline information identifies current sustainability issues and problems in the Plan area to be addressed and provides a basis for predicting and monitoring the effects of implementing the document. To ensure the data collected within Annex B was relevant and captured a range of sustainability issues, it was categorised under thematic topics. They cover all the topics referred to in Annex 1(f) of the SEA Directive and follow the order of:

- Transport and connectivity
- Economy and employment
- Housing
- Health and wellbeing
- Cultural heritage
- Biodiversity and nature conservation
- Landscapes
- Water
- Climate and energy
- Air
- Soils
- Minerals
- Waste

2.2.4 Sustainability Issues and Problems Relevant to the Plan Area

The outcome of the above processes related to the identification of relevant plans and programmes and the baseline information profile of the Plan area is the identification of key sustainability and environmental issues. These represent those sustainability and environmental problems facing the Plan area which assist in the finalisation of a set of relevant ISA Objectives that can be subsequently expanded upon in an ISA Framework.

The assessment of the Plan will be able to evaluate, in a clear and consistent manner, the nature and degree of impact and whether significant effects are likely to emerge from the

Plan Review's content. The following table outlines the thought process which has led to the formulation of the ISA Objectives for the Plan.

Table 2: Key Sustainability Issues

General Theme	Focused Theme	Description / Supporting Evidence
Biodiversity	Ecological designations and the effects of transport schemes	Essex contains a range of sites with ecological designations, including Ramsar sites, Special Protection Areas, Special Areas of Conservation, Sites of Special Scientific Interest and National and Local Nature Reserves. In addition, a number of Biodiversity Action Plans and Habitat Action Plans are in place, with the aim of conserving and increasing nationally and locally important habitats and species in the county.
Water quality	Risk of contamination	The quality of water within the County's rivers is generally fair to good in terms of chemical and biological quality. However, the chemical quality of the rivers is worse than the average quality of rivers in the East of England. There are potential issues with removal of part of an aquifer and disrupting groundwater flows. Risk of contamination of surface and groundwater and siltation of watercourses related to transport related development and maintenance of assets: • use of fertilisers, surface water run-off. • pollution from natural contaminants and fuels, oils and solvents.
Landscape	Schemes that can harm, or offer landscape benefits	The Essex landscape and its relationship with historic settlements form an important component of the historic environment contributing to place making and local distinctiveness. Landscape plays an important role in proving the setting for all heritage assets, and as such, landscape is an important part of the setting of heritage assets.
Historic environment	Minimising / avoiding effects on assets	The county includes large numbers of recorded archaeological sites, listed buildings and conservation areas, as well as scheduled monuments. The NPPF requires a positive

General Theme	Focused Theme	Description / Supporting Evidence
		strategy for the conservation of the historic environment. Landscape scale heritage assets such as Registered Parks and Gardens, Registered Battlefields, or non-designated heritage assets, can be particularly sensitive to changes in their setting, for example through visual intrusion, the introduction of movement and noise, and changes in hydrology / groundwater flows.
Flooding	Drainage and disturbance	Throughout the county there is a greater need for flood and surface water management. Any proposed transport related development should not impact any flood infrastructure. In general, the following risks are considered relevant: • Disturbance or removal of surface features such as watercourses or flood storage. • Increased risk of groundwater flooding. • Potential impacts on the historic environment, for example on archaeology
Transport	Congestion and road safety	Parts of the strategic road network pass through towns and villages creating issues for local communities in terms of air quality, amenity and road safety - particularly in sensitive rural areas and designated Air Quality Management Areas (AQMAs).
Health	Human health and pollution	Potential impacts on health, well-being and quality of life should be taken into account. The potential impact of noise, dust, vibration, lighting and water pollution potentially being generated from transport movements needs to be considered and mitigated.

2.2.5 The Objectives formulated for the ISA

The following table explores whether the identified ISA Objectives above fall into the three broad categories of sustainability, namely social, environmental and economic themes.

Table 3: The ISA Objectives

ISA Objective	Environmental	Social	Economic
1) To protect and enhance biodiversity through Essex and beyond	✓		
2) To maintain and enhance water quality and resources	✓	✓	
3) To minimise the risk of flooding	✓	✓	
4) To encourage the sustainable use of land and protection of soils, including the best and most versatile agricultural land			✓
5) To safeguard and where possible improve air quality	✓	✓	
6) To minimise net emissions of greenhouse gases and increase adaptability to climate change	✓	✓	✓
7) To avoid, and if this is not possible minimise impacts, both direct, and indirect (e.g. through changes in setting), on the significance of the historic environment, both above and below ground	✓	✓	
8) To protect and enhance the quality and character of landscapes	✓	✓	
9) To promote the use of sustainable transport choices	✓	✓	✓

ISA Objective	Environmental	Social	Economic
10) To improve the reliability of journey times for all people travelling in Essex	✓	✓	✓
11) To improve access to services and employment opportunities in Essex and reduce social exclusion	✓	✓	✓
12) To protect and where possible enhance human health and well-being		✓	
13) To maximise opportunities for sustainable economic development		✓	✓

2.2.6 The Compatibility of the Integrated Sustainability Objectives

A total of 13 ISA Objectives have been derived for the appraisal of the Plan. They are based on the scope of the document, policy advice and guidance and to the assessment of the current state of the environment.

It is useful to test the compatibility of ISA Objectives against one another in order to highlight any areas where potential conflict or tensions may arise. It is to be expected that some objectives are not compatible with other objectives thereby indicating that tensions could occur. Objectives which are based around environmental issues sometimes conflict with economic and social objectives, and vice versa.

The majority of the ISA Objectives relevant to the content of the Plan, are broadly compatible or otherwise unrelated. There are however a number of potential incompatibilities identified in the compatibility matrix, and these are discussed below:

- Protecting landscapes (ISA Objective 9) and enhancing biodiversity (specifically through ensuring net gains) (ISA Objective 1): Although a desire to protect landscape and biodiversity are compatible notionally, there can be a conflict between the merits of protecting landscapes and ensuring biodiversity net gains through certain features on a site-by-site basis.

- Maintaining and enhancing water quality (ISA Objective 2) and any new road schemes associated with ISA Objectives 9 and 10: There is a notional possibility that new roads could lead to adverse impacts on groundwater conditions without appropriate mitigation in place. Those ISA Objectives that seek the protection of water quality for environmental purposes and ensuring improved access have the potential to be incompatible in some areas of the county.

2.3 The ISA Framework

The following ISA Framework forms the basis of the methods used to evaluate the effects of the Plan Review's policy amendments and any 'reasonable alternative' options where relevant.

Table 4: The Integrated Sustainability Framework

ISA Objectives	Proposed guide questions to meet objective (Does the LTP…)	Potential Indicators for monitoring effect
1) To protect and enhance biodiversity through Essex and beyond	Avoid damage to sites, protected species and habitats, especially where there is a designation of international, national, regional or local importance? Maintain and improve biodiversity/geodiversity, avoiding irreversible losses? Acknowledge Biodiversity Net Gain requirements? Restore full range of characteristic habitats and species where possible? Avoid direct or indirect impacts on internationally, nationally, or locally designated or recognised sites or habitats? Conserve or enhance species diversity and avoid harm to internationally and nationally protected, scarce and rare species? Provide for positive management of existing habitats? Assist species to adapt to the anticipated effects of climate change? (i.e. through connecting habitats and/or providing greenspace)?	Change in number and area of designated ecological sites. Proposals affecting protected species outside protected areas. Achievement of Habitat Action Plan targets. Achievement of Species Action Plan targets. Proposals affecting habitats outside protected areas. Bird survey results. Reported condition of ecological SSSIs. Number of schemes that generated any adverse impacts on sites of acknowledged biodiversity importance. Percentage of major developments generating overall biodiversity enhancement. Hectares of biodiversity habitat ensured through schemes.

ISA Objectives	Proposed guide questions to meet objective (Does the LTP…)	Potential Indicators for monitoring effect
	Expand the spatial extent of priority habitat within Essex? Contribute to an adverse cumulative impact of development on biodiversity? Conserve or enhance geological SSSIs? Provide opportunities for the creation of accessible greenspace?	
2) To maintain and enhance water quality and resources	Seek to sustain the highest water quality? Take into account the Water Framework Directive and proposed development impacts? Seek to prevent pollution from run off or other sources? Likely to change the general quality assessment grades of surface and ground water quality? Avoid adverse effects on existing patterns of groundwater flow and/or surface water flow? Protect or enhance the quantity and quality of ground and surface waters? Change potable and/or non-potable abstraction resources or disrupt aquifer continuity? Maintain water availability for water dependant habitats? Affect rates of abstraction / water use?	Water quality in rivers Groundwater quality Potential effect on groundwater source protection zones Condition of water bodies (Water Framework Directive) Water use figures from Anglian Water/Essex & Suffolk Water Resource availability status for units of groundwater in Catchment abstraction Condition of historic water features (e.g. ornamental lakes, and fountains etc.) within Registered Parks and Gardens, and buried archaeology.

ISA Objectives	Proposed guide questions to meet objective (Does the LTP…)	Potential Indicators for monitoring effect
	Consider the potential impacts of dewatering on other tenets of sustainability such as the historic environment and landscapes?	
3) To minimise the risk of flooding	Ensure proposals are not at risk of flooding? Ensure no increased risk of flooding elsewhere? Mitigate the potential effects of fluvial flooding and reduce overall flood risk? Mitigate the potential of surface water flooding and reduce overall flood risk? Mitigate the potential for coastal flooding and reduce overall risk? Mitigate the potential for groundwater flooding and reduce overall risk? Minimise the risks and impacts of flooding having taken into account climate change?	Flood Risk – planning applications approved against Environment Agency advice. Properties at risk of flooding from rivers. Incidence of fluvial flooding (properties affected). Incidences of surface water flooding Incidences of coastal flooding Incidences of groundwater flooding
4) To encourage the sustainable use of land and protection of soils, including the best and most versatile agricultural land.	Minimise risk of soil contamination? Safeguard soil and protect quality and quantity? Encourage the de-contamination and/or re-use of soils? Reduce the capacity of the soil to hold carbon? Minimise the loss of greenfield land?	Map/data showing soil quality Area (hectares) of contaminated land returned to beneficial use Number and percentage of proposals completed on greenfield land.

ISA Objectives	Proposed guide questions to meet objective (Does the LTP…)	Potential Indicators for monitoring effect
	Minimise loss of the best and most versatile agricultural? Affect the amount of contaminated land? Lead to remediation of contaminated land?	
5) To safeguard and where possible improve air quality.	Take into account proposed development impacts within any AQMAs and their relevant Action Plans? Account for locations where air pollution levels are approaching the National Objectives thresholds? Seek to improve air quality? Affect levels of the 7 National Objective pollutants for local air quality (SO2, NO2, PM10, benzene, 1,3-butadene, CO, Pb)?	Achievement of emission limit values Number of AQMAs and dwelling affected Number of days of air pollution
6) To minimise net emissions of greenhouse gases and increase adaptability to climate change.	Increase emissions (both direct and indirect) of greenhouse gases? Maximise the potential for electric car use through appropriate infrastructure? Ensure the use of renewable energy sources? Have any impact upon the county's vulnerability to the impacts of climate change?	Consumption of energy Use of low carbon technologies. Opportunities for utilizing renewable or low-carbon energy supply systems.
7) To avoid, and if this is not possible minimise impacts, both direct, and indirect (e.g. through	Have an adverse impact on designated and non-designated heritage assets, including Listed Buildings, Conservation Areas,	Number of listed buildings at risk Size, condition and number of Conservation Areas

ISA Objectives	Proposed guide questions to meet objective (Does the LTP…)	Potential Indicators for monitoring effect
changes in setting), on the significance of the historic environment, both above and below ground	Registered Parks and Gardens, Scheduled Monuments, and archaeological deposits? Cause a change to the condition of designated heritage assets, and assets identified as being Heritage at Risk? Change the condition of known or potential archaeological monuments and/or the ability to record unknown buried archaeology? Protect designated areas- nationally, regionally and locally Protect areas of high archaeological potential Cause a loss of, or harm to, the character and/or setting of historic assets? Suggest the measures conserve and enhance the local character and distinctiveness of historic townscapes and landscapes? Identify and protect the relationship between historic settlements and the wider landscape? Cause a loss of, or harm to, the character and/or setting of heritage assets (including Registered Parks and Gardens, Registered Battlefields, or non-designated heritage assets)?	Buried archaeology as listed in HER Areas of significant archaeological and paleo-environmental potential Buried archaeology as listed in the HER or considered to be likely within the particular site of a scheme. Schemes submitted and refused due to adverse impact to the Historic Environment Schemes submitted and allowed with conditions relating to the Historic Environment Schemes supported or opposed by Historic England

ISA Objectives	Proposed guide questions to meet objective (Does the LTP…)	Potential Indicators for monitoring effect
8) To protect and enhance the quality and character of landscapes	Protect and enhance the landscape particularly in designated areas? Improve the landscape and townscape character of the county and help to minimise adverse impacts to local amenity and overall landscape character? Conserve and enhance landscape character, quality and distinctiveness, paying particular regard to AONB and other designated areas of high landscape and/or historic sensitivity or value? Contribute to an adverse cumulative impact of development on protected landscapes? Reduce the amount of derelict, degraded and underused land? Provide opportunities for the creation of accessible greenspace?	Changes in landscape (Landscape Character Assessment) Area of designated landscape Number of TPOs affected Number of field boundaries affected Number of planning applications refused for reasons due to poor design Schemes in AONB / National Park / Heritage Coast with commentary on likely impact. Access and green infrastructure: Length of greenways constructed. Hectares of accessible open space per one thousand population.
9) To promote the use of sustainable transport choices	Encourage the use of Travel Plans for educational institutions, businesses and other large scale developments? Seek to improve residents' access to public transport, especially in areas where services are not readily available? Seek to improve reliability of public transport?	Recorded Traffic Flows Travel to school method for all pupils in Essex Public Transport Usage Cycle flows Access to service by public transport

ISA Objectives	Proposed guide questions to meet objective (Does the LTP…)	Potential Indicators for monitoring effect
	Promote the most sustainable modes of transport, such as cycling and walking? Include provision for people with disabilities and those other protected groups identified within the EqIA?	
10) To improve the reliability of journey times for all people travelling in Essex	Improve the reliability of journey times for all travelling within Essex? Ensure that appropriate priority is provided for transport, cyclists and pedestrians? Improve traffic flow on heavily congested roads? Encourage the use of rail for freight movement over road? Seek to reduce the impacts of high traffic levels?	Bus Service Passenger Satisfaction Public Transport Punctuality Public Transport Journey Time Reliability Public Transport Average Journey time (minutes) Recorded traffic flows
11) To improve access to services and employment opportunities in Essex and reduce social exclusion	Seek to improve access to employment areas, services and facilities for all Essex's residents by sustainable transport? Promote the use of sustainable modes of transport? Improve access for residents to public transport, particularly in areas where services are not readily available? Seek to improve reliability of public transport? Promote social equality?	Barriers sub-domain: geographical barriers to services (IMD) Travel to work flows and methods Travel to school methods Accessibility maps for individual services, schools and employment Total number of passenger journeys made annually on all local buses in Essex Journey time reliability Passenger transport punctuality (bus)

ISA Objectives	Proposed guide questions to meet objective (Does the LTP…)	Potential Indicators for monitoring effect
	Encourage improvements and maintenance to the highway network?	
12) To protect and where possible enhance human health and well-being.	Minimise the number and severity of road traffic accidents and maximise safety and security? Have an adverse impact on human health? Improve access to facilities and services including recreational facilities and opportunities? Seek to minimise noise and vibrations from road transport? Encourage large vehicles away from smaller roads and onto more appropriate routes?	Access to recreation facilities and opportunities Open space and public realm improvements that contribute towards recreational opportunities Percentage of residents who are happy with their neighbourhood as a place to live Ambient noise along major roads in Essex dB(A) Complaints relating to noise Light pollution maps
13) To maximise opportunities for sustainable economic development	Seek to improve business development and attract investment? Seek to secure more opportunities for residents, of all abilities, and in all employment sectors, to work in Essex? Ensure improvements and additions to infrastructure be delivered alongside new employment developments? Seek to improve reliability of public transport	Count of new VAT registrations Proportion of VAT paying businesses by employment size Proportion of employment by industry class and location Proportion of employment by occupation type Gross weekly wage Unemployment Rate Public Transport Journey Time Reliability

3. The Approach to Assessing the LTP

3.1 Assessing Policies and the types of effects considered

The ISA of the Plan assesses the LTP's content against the ISA Objectives and key questions / criteria outlined in the ISA framework. The aim is to assess the sustainability effects of the LTP following implementation. The assessment looks at the secondary, cumulative, synergistic, short, medium and long-term permanent and temporary effects in accordance with Annex 1 of the SA Directive, as well as alternatives, and suggests mitigation measures where appropriate. The findings are accompanied by an appraisal matrix which documents the effects over time.

The content of the assessment tables responds to those 'significant effects' of the policy or element of the Plan subject to assessment. Assessments also look at the following:

- Temporal effects;
- Secondary, Cumulative and Synergistic effects;
- The assessment of Alternatives; and
- Proposed mitigation measures / recommendations.

These, and 'significant effects' are further described in the following sub-sections.

3.1.1 Description of 'Significant Effects'

The strength of impacts can vary dependant on the relevance of the policy content to certain SA Objectives or themes. Where the policies have been appraised against the SA Objectives the basis for making judgements within the assessment is identified within the following key:

Possible impact	Basis for judgement
++	Strong prospect of there being significant positive impacts.
+	Strong prospect of there being minor positive impacts.
?	General uncertainty where there is a lack of current evidence (to be elaborated in commentary in each instance) or uncertainty surrounding the degree of impact assessed (also elaborated on within commentary).

Possible impact	Basis for judgement
0	No impact.
-	Strong prospect of there being minor negative impacts and mitigation would be possible / issues can be rectified.
- -	Strong prospect of there being significant negative impacts with mitigation unlikely to be possible (pending further investigation) / further work is needed to explore whether issues can be rectified.
NA	Not applicable to the scope or context of the assessed content.

Commentary is also included to describe the significant effects of the policy on the sustainability objectives.

A NOTE ON 'UNCERTAIN IMPACTS / EFFECTS' IN THE SA:

Within the following SA Framework, a degree of impact is highlighted as 'uncertain.' It should be acknowledged that within the assessment of options 'uncertain' impacts can 'lean' towards either positive or negative impacts, and these additional degrees of impact will be highlighted within option assessments where relevant.

Additionally, it should also be acknowledged that 'uncertain' impacts will only be highlighted where 'positive' or 'negative' impacts cannot be predicted with any assurance or where there is a lack of reliable quantitative information that can be used to predict impacts (or when the only available information is considered qualitative / anecdotal).

3.1.2 Description of 'Temporal Effects'

The assessment of the Plan's content should recognise that impacts may vary over time. This Report highlights where effects may change over time in those instances where evidence exists to support such judgements. Should no evidence exist, then temporal effects will be based on reasonable assumptions, which will also be highlighted and signposted within this Report. Effects for each policy appraisal will be highlighted as:

- S/T: Short Term (responding to the initial stages of a Plan period)
- M/T: Medium Term (responding to the middle stages of the Plan period)
- L/T: Long Term (responding to the latter stages of a Plan period and beyond)

3.1.3 Description of 'Secondary, Cumulative and Synergistic Effects'

In addition to those effects that may arise indirectly (secondary effects), relationships between different elements of the Plan will be assessed in order to highlight any possible strengthening or weakening of impacts from their implementation together. Cumulative effects respond to impacts occurring directly from two different elements together, and synergistic effects are those that offer a strengthening or worsening of more than one element of the Plan that is greater than any individual impact. Additionally, any cumulative impacts with other plans or projects will be highlighted within the assessment.

3.1.4 Description of 'Reasonable Alternatives Considered'

Planning Practice Guidance states that reasonable alternatives are the different realistic options considered by the plan-maker in developing the policies in its plan. They must be sufficiently distinct to highlight the different sustainability implications of each so that meaningful comparisons can be made. The alternatives must be realistic and deliverable.

3.1.5 Description of 'Proposed Mitigation Measures / Recommendations'

Negative or uncertain impacts may be highlighted within assessments. As such, mitigation measures may be required, and these will be highlighted in this section for each policy where relevant. In addition to this, this section will also include any recommendations that may maximise sustainability benefits.

3.2 How are effects identified?

The majority of the effects highlighted within the appraisal use the 2014 LTP SA as a starting point, however it should be acknowledged that the approach taken in that SA highlighted significant effects on the basis of a Policy, or an element of the Policy, being merely successful in either mitigating effects, or responding to national policy requirements. For example, a Policy's successful mitigation of effects on the historic environment would not yield 'significant positive effects' rather 'no effects.' The SA at this point, in responding to best practice, highlights effects as 'significant' only where they will lead to benefits that can be considered so as a result of the Policy. There is also a stronger focus within this SA to use evidence as a starting point, rather than professional opinion or notional planning judgements at the strategic level.

4. The Assessment of the Local Transport Plan

4.1 Introduction to this Section

This section sets out the appraisal of the Local Transport Plan, as amended. Assessment of the Plan's content has been undertaken against the sustainability objectives and framework devised at the scoping stage.

This section assesses the Plan's Vision, overarching policies, and also the thematic chapters / sections (and where relevant reasonable alternative approaches). These sections are:

- Supporting people: health, wellbeing and independence
- Creating sustainable places and communities
- Connecting people, places and businesses

4.2 Assessment of The Vision

4.2.1 Overview

The Vision, as the LTP4 states, focuses on real outcomes for Essex residents, providing both a long-term plan for transport but also tackling short and medium-term challenges. The Vision is for a safe transport system that supports economic growth and prosperity, provides access to homes, services, education, work and leisure and also enables more sustainable choices and journeys to be made.

4.2.2 Are there any alternatives to consider?

As an overarching vision, the Vision closely follows the remit of a Local Transport Plan. As such, no alternatives have been identified that can be considered 'reasonable' i.e. realistic, deliverable and sufficiently distinct from the proposed approach.

4.2.3 Assessment of the Vision

Effect	1	2	3	4	5	6	7	8	9	10	11	12	13
S/T	NA	NA	NA	NA	+	+	NA	NA	++	+	++	+	+
M/T	NA	NA	NA	NA	+	+	NA	NA	++	+	++	+	+
L/T	NA	NA	NA	NA	+	+	NA	NA	++	+	++	+	+

The Plan's Vision can be expected to ensure significant positive effects on various transport related ISA Objectives, covering themes of sustainable transport and improving access to services and employment. Minor positive impacts can be expected additionally on those ISA Objectives related to air quality, reducing net emissions of greenhouse gases, human health and wellbeing, and sustainable economic development.

Further positive impacts can be expected of the ISA objective regarding journey time reliability. The impacts related to this transport related ISA objective are not considered significant directly, as the Vision is necessarily focused on sustainable transport and behavioural shifts away from private vehicle journeys. It can be expected that significant positive effects could indirectly be forthcoming across all transport methods through its approach and focus should sustainable and active travel uptake increase.

4.2.4 Mitigation measures proposed to minimise effects

No mitigation measures are proposed to the Plan's Vision at this stage.

4.3 Assessment of The Plan's Policies

4.3.1 Overview

The Plan's overarching policies cover the broad aims and objectives of the Plan, with more detail offered within the Plan's thematic sections and supporting text. The Plan's policies are included within the table below.

Table 5: The LTP4 Policies

LTP4 Policy	Policy wording
Policy 1. Understanding the travel needs of	We will work with partners to ensure that the travel needs of people and businesses in Essex is clearly understood in how

LTP4 Policy	Policy wording
people and businesses of Essex.	transport services are planned and delivered, including making effective use of the latest digital technology.
Policy 2. Access to Key Services.	We will work with partners and service providers to ensure that everyone living, working and investing in Essex can access key services with a particular focus on resolving inequalities in access to the transport network.
Policy 3. Sustainable and Active Travel Choices.	We will encourage existing communities and require new developments to maximise the use of sustainable forms of travel for a healthier, safer, and more resilient Essex, with better access to a wider range of opportunities.
Policy 4. Being Safe and Feeling Safe.	We will ensure that travel in Essex is safe and feels safe for all users of the transport network.
Policy 5. Our Built Environment.	We will aim to project the historic and built environment from the harmful effects of transport and strive to make places more people focussed with an emphasis on placemaking to make spaces safe and accessible for all.
Policy 6. Integrating Planning and Transport.	We will work with partners to put people and places at the heart of our decisions to secure new development at the most appropriate and sustainable locations. We will consider land use planning and travel planning together, to help reduce the number and length of journeys that people need to make.
Policy 7. Carbon Reduction.	We are committed to the decarbonisation of transport within Essex by 2050; and to implement measures to ensure our transport system is resilient to the impacts of climate change.
Policy 8. Our Natural Environment.	We will aim to reduce the impact of transport on the natural environment to minimise pollution and contribute to biodiversity net gain.
Policy 9. Maintenance and Asset Management.	We will work with Partners to ensure that the transport network is safe to use, resilient to the impacts of climate change, and fit for purpose, especially during periods of adverse weather.
Policy 10. Connectivity and Journey Reliability for	We will work with Partners to ensure that our transport networks support sustainable and high quality places which promote connectivity and reliable journeys for all.

LTP4 Policy	Policy wording
All Modes of Transport.	
Policy 11. Freight Movement.	We will work with Partners to support the efficient and sustainable movement of freight
Policy 12. Sustainable Transport.	We will support a sustainable transport network that assists inclusive economic growth and connectivity and enables access to key services.

4.3.2 Are there any alternatives to consider?

Resembling overarching aims and objectives, the policies closely follows the remit of a Local Transport Plan. As such, no alternatives have been identified that can be considered 'reasonable' i.e. realistic, deliverable and sufficiently distinct from the proposed approach.

4.3.3 Assessment of the Policies

Policy	1	2	3	4	5	6	7	8	9	10	11	12	13
1										✓	✓		✓
2										✓	✓		✓
3									✓	✓	✓	✓	✓
4												✓	
5							✓	✓					
6									✓	✓	✓	✓	
7			✓		✓	✓			✓			✓	
8	✓	✓	✓		✓		✓	✓					
9			✓									✓	

Policy	1	2	3	4	5	6	7	8	9	10	11	12	13
10									✓	✓	✓	✓	✓
11													✓
12									✓	✓	✓	✓	✓

The Plan's policies can be seen to cover the majority of the ISA Objectives, with particular strength in their focus on sustainable transport choices, improving the reliability of journey times, improving access to services and employment opportunities, enhancing human health (through Active Travel), and maximising opportunities for sustainable economic development. These ISA objectives (9-13) represent those most closely aligned to the remit of the LPT4; namely the social and economic themes of sustainability associated with transport planning.

Additionally, the LTP4 acknowledges and seeks to mitigate and enhance county wide conditions related to wider environmental themes. These cover air quality and climate change based objectives through sustainable transport and Active Travel aspirations, as well as policies addressing the impacts new infrastructure can have on landscapes, the historic and built environment. Further, Policy 8 acknowledges the Biodiversity Net Gain requirements of all new development, and further the mitigation or minimisation of impacts at the site specific level. The ISA objective related to soil quality, and the best and most versatile agricultural land (BMV) can be seen as not being directly addressed by any of the Plan's policies. It is considered that the supporting text of the Policies and the wider Plan in general could seek to address impacts on soil quality, however this is not a specific criticism of the Plan itself; such considerations will be made at the point of specific schemes being submitted for planning permission, and as part of discussions regarding planning balance.

4.3.4 Mitigation measures proposed to minimise effects

No mitigation measures are proposed to the Plan's policies at this stage.

4.4 Assessment of the Supporting People section

4.4.1 Overview

The Plan sets out a strategic aim for everyone living in Essex to:

- have good sustainable access to work, education and training, essential services and leisure activities wherever they live.
- enjoy improved physical and mental health and wellbeing – supporting the mental health and wellbeing of our residents by encouraging and enabling more active lifestyles such was walking and cycling.

- have access to a transport network that is safe and feels safe for everyone who uses it.

The Plan outlines a series of planned activities which can be seen to notionally deliver the objectives of this section, covering both rural and urban areas, and also including a focus on deprived areas.

4.4.2 Are there any alternatives to consider?

It is important to consider the strategic nature of this section of the Plan. The section does not include a focus on individual schemes or commitments. As such, no alternatives have been identified that can be considered 'reasonable' i.e. realistic, deliverable and sufficiently distinct from the proposed approach, which is suitably wide ranging.

4.4.3 Assessment of the Supporting People section

Effect	1	2	3	4	5	6	7	8	9	10	11	12	13
S/T	NA	NA	NA	NA	NA	NA	NA	NA	+	+	+	+	NA
M/T	NA	NA	NA	NA	NA	NA	NA	NA	+	+	+	+	NA
L/T	NA	NA	NA	NA	NA	NA	NA	NA	+	+	+	+	NA

The Plan's Supporting People section adheres to a number of the ISA objectives, notably those related to the use of sustainable transport choices (ISA Objective 9), journey time reliability (ISA Objective 10), access to services in Essex (ISA Objective 11), and also, albeit more secondary in nature, improving human health and well-being (ISA Objective 12). The section looks to maximise inclusive access in an evidence-led manner, with a focus on addressing deficiencies in rural and deprived areas; areas of the county where access to services is poor (as well as access to public transport itself); and also enabling realistic access opportunities for the disabled, older people and also the young. Relevant planned activities include implementing Bus Service Improvement Plans; working with the bus and rail industries to secure further improvements to the accessibility of public transport; improving the cycling and walking network; and using travel planning to promote active travel. The wider planned activities within this section are designed to enable options that are both affordable to all and inclusive in regard to age and disability, covering the wide spectrum of transportation methods available in the county. Similarly, and crucially to notions of sustainability, the section also sets out how the authority will support initiatives to ensure that the need to travel is reduced in the first instance, such as through faster broadband, and digital innovation to reduce vehicle trips.

Due to the high level focus of this section of the Plan, and the 'planned activities' contained with it not necessarily having direct, measurable outcomes, impacts are not identified as significant. This is no criticism of the Plan, which is suitable in its scope and detail as a

strategic document. The Plan acknowledges this in Section 7, which outlines that the transport strategy will be delivered through a range of supporting plans and strategies such as a Place and Movement approach, a Speed Management Strategy and fourteen Implementation Plans; the latter of which are considered for assessment elsewhere in this ISA Report.

4.4.4 Mitigation measures proposed to minimise effects

No mitigation measures are proposed to the Plan's Supporting People section.

4.5 Assessment of the Creating Sustainable Places and Communities section

4.5.1 Overview

The Plan sets out the aim to deliver growth in a way that enables the maintenance and improvement of the individual character and quality of our cities, towns, villages, countryside and surrounding environment. The Plan includes the need for:

- All places to support the needs of everyone through appropriate access to transport choices.
- New developments to be designed and built as sustainable from the start with access to good transport choices for residents.
- Transport's negative impact on the environment to be reduced – fully supporting the Essex Climate Action Plan and protecting and enhancing our local environments.

The Plan in this section again outlines a series of planned activities which can be seen to notionally deliver the objectives of this section, which are largely countywide in scope and coverage but also related to specific forthcoming Garden Communities within the county.

4.5.2 Are there any alternatives to consider?

It is important to consider the strategic nature of this section of the Plan. The section does not include a focus on individual schemes or commitments. As such, no alternatives have been identified that can be considered 'reasonable' i.e. realistic, deliverable and sufficiently distinct from the proposed approach, which is suitably wide ranging.

4.5.3 Assessment of the Creating Sustainable Places and Communities section

Effect	1	2	3	4	5	6	7	8	9	10	11	12	13
S/T	?	NA	0/+	NA	0/+	+	NA	NA	+	NA	+	0/+	NA
M/T	?	NA	0/+	NA	0/+	+	NA	NA	+	NA	+	0/+	NA
L/T	?	NA	0/+	NA	0/+	+	NA	NA	+	NA	+	0/+	NA

The Plan's Creating Sustainable Places and Communities section has a wider focus on notions and themes of sustainable development, adhering to the majority the ISA objectives to varying degrees. Directly, the section is closely aligned to those objectives related to the use of sustainable transport choices (ISA Objective 9), adaptability to climate change (ISA Objective 6), and access to services in Essex (ISA Objective 11). Impacts will be positive in regard to these objectives through initiatives and activities such as the implementation of 'walkable neighbourhood principles' in the redesign of existing neighbourhoods, and also an Electric Vehicle Strategy to provide suitable access to a reliable, convenient, accessible and fairly priced network of electric charge points. Impacts are not identified as significantly positive, where much depends on delivery of individual schemes at the district / borough / city level; although LPA Local Plans can be expected to adhere to the principles of the LTP4 through an aligned vision-led approach and joint working and engagement / consultation, much depends on the allocation of sites for growth in appropriate and suitable locations at that level.

Positive implications are likely to be realised in regard to ISA Objective 5 (regarding air quality), ISA Objective 3 (regarding flood risk), and ISA Objective 12 (health and wellbeing, specifically regarding noise and access to open space), albeit impacts are likely to be broadly neutral in terms of the planned activities' approach of minimising effects in the first instance rather than significantly improving the baseline position. These impacts are associated with the planned activities of promoting greater flood resilience on the highway network; implementing an Essex Air Quality Strategy and deliverable Air Quality Action Plans; implementing measures to reduce traffic and road maintenance / construction noise; and also the Green Infrastructure Strategy to deliver healthy streets and more accessible green spaces. There are also some positive implications regarding ISA Objective 1 (biodiversity) in regard to supporting the delivery of ECC's Local Nature Recovery Strategy.

Nevertheless, the LTP4 may give rise to effects on Habitats sites and other designations in the County through improved access. To this extent there is some degree of uncertainty highlighted in the assessment where certain planned activities associated with Garden Communities, and more widely in response to new growth, may have impacts on the integrity of such designations. This may be locational, and lead to improved access to Habitats sites and increasing visitor trips to them.

Due to the high level focus of this section of the Plan however, and the 'planned activities'

contained with it not necessarily having direct, measurable outcomes, impacts are not identified as significant. Once again, this is no criticism of the Plan, which is suitable in its scope and detail as a strategic document. The Plan acknowledges this in Section 7, which outlines that the transport strategy will be delivered through a range of supporting plans and strategies such as a Place and Movement approach, a Speed Management Strategy and fourteen Implementation Plans; the latter of which are considered for assessment elsewhere in this ISA Report.

4.5.4 Mitigation measures proposed to minimise effects

It is recommended that the Plan explicitly add a requirement that all schemes and proposals must avoid any Adverse Effects On the Integrity of Habitats sites. Any proposal coming forward must be able to demonstrate that adverse effects on the integrity of Habitats sites can be avoided. To provide certainty, it is recommended that text be added to the Plan that "all development needs to demonstrate that there would be no adverse effect on the integrity of any Habitats sites, either alone or in combination with other plans or projects. This should be demonstrated through a project level HRA." This is a consistent approach to policy that is included within LPA Local Plans throughout Essex.

4.6 Assessment of The Connecting People, Places and Businesses section

4.6.1 Overview

The Plan aims to connect people, places and businesses effectively and efficiently in order to help Essex secure a stronger, more inclusive and sustainable economy. The Plan aims for:

- the maximisation of the business potential of Essex.
- people to have inclusive and affordable access to work, education and training.
- the transport network to have a secure and long-term future.

The series of planned activities outlined in this section range from countywide in scope to focusing on improving the future of strategic transport hubs within the county.

4.6.2 Are there any alternatives to consider?

It is again important to consider the strategic nature of this section of the Plan. The section does not include a focus on individual schemes or commitments. As such, no alternatives have been identified that can be considered ‘reasonable’ i.e. realistic, deliverable and sufficiently distinct from the proposed approach, which is suitably wide ranging.

4.6.3 Assessment of the Connecting People, Places and Businesses section

Effect	1	2	3	4	5	6	7	8	9	10	11	12	13
S/T	NA	NA	NA	NA	?	?	NA	NA	+	+	+	NA	+
M/T	NA	NA	NA	NA	?	?	NA	NA	+	+	+	NA	+
L/T	NA	NA	NA	NA	?	?	NA	NA	+	+	+	NA	+

The Plan's Creating Sustainable Places and Communities section also adheres to a number of relevant ISA objectives, notably sustainable transport options (ISA Objective 9), those related to journey time reliability (ISA Objective 10), access to services in Essex (ISA Objective 11), and maximising opportunities for sustainable economic development (ISA Objective 13). The section includes numerous activities that set out where the council will work with partners, government, the rail industry, the freight industry, and LPAs to ensure that all aspects of the transport infrastructure are maintained, improved where feasible, and new infrastructure responds to strategically planned growth. Planned activities also cover areas such as improving the accessibility of all transport options, as well as supporting the integration of smart ticketing for transport services in the county.

More secondary or indirect impacts may also be forthcoming as a result of the successful implementation of the planned activities, such as air quality, and associated climate change impacts, due to the potential for public transport uptake to be heightened through better connectivity and ease of use. Impacts are however highlighted as uncertain, as the section rightly acknowledges that inclusive access to employment, education and services also includes improvements to be made to the road network.

As per the assessment of the preceding sections, due to the planned activities contained with the section not necessarily having direct, measurable outcomes, impacts are not identified as significant. Once again, this is no criticism of the Plan, which is suitable in its scope and detail as a strategic document. Section 7 of the Plan outlines that the transport strategy will be delivered through a range of supporting plans and strategies including fourteen Implementation Plans, which are considered for assessment elsewhere in this ISA Report.

4.6.4 Mitigation measures proposed to minimise effects

No mitigation measures are proposed to the Plan's Connecting People, Places and Businesses section.

5. The Assessment of the Implementation Plans

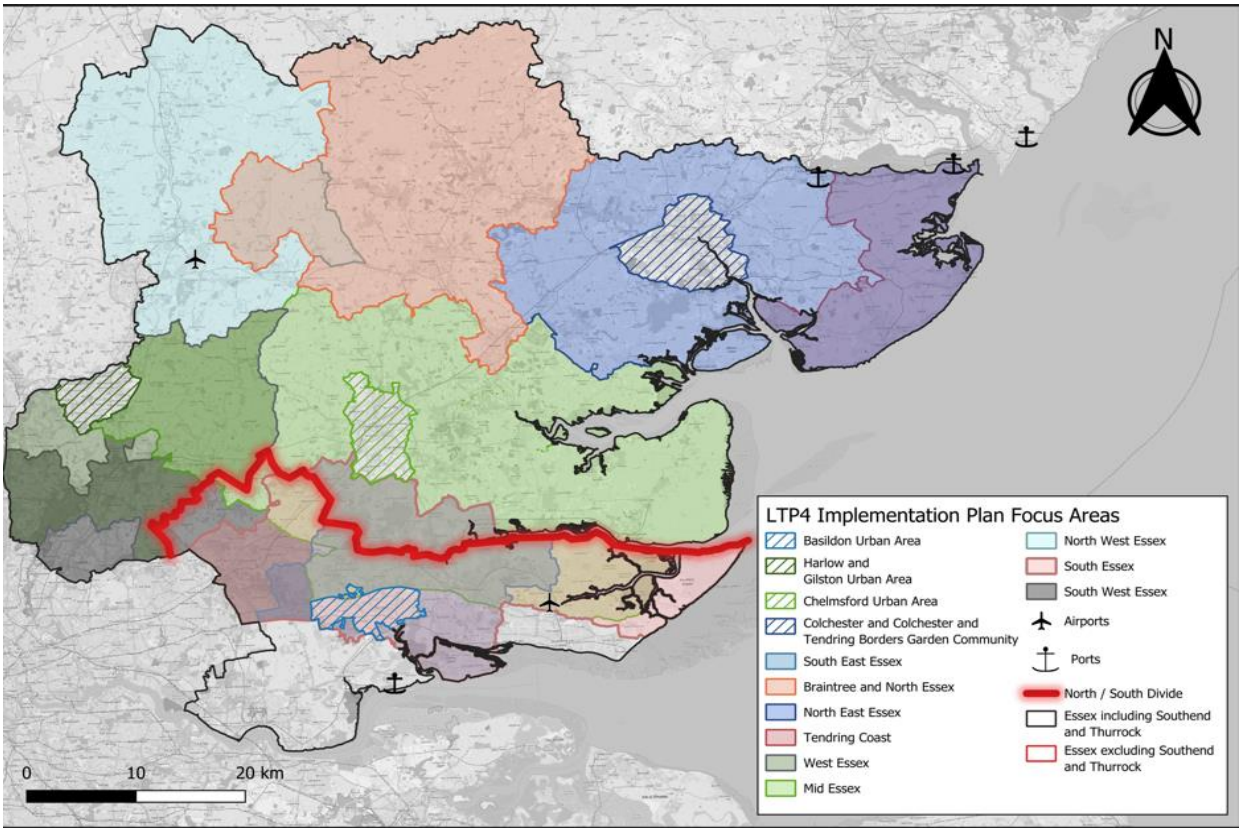
5.1 Overview of the Implementation Plans

The Plan sets out the delivery of the transport strategy through a range of supporting plans and strategies such as a Place and Movement approach, a Speed Management Strategy and fourteen Implementation Plans. These accompanying Implementation Plans will provide the policy direction to shape the transport and travel components of local planning authorities' Local Plans for growth and development, in response to those Plan's strategies and site allocations. As such, the content of these Implementation Plans is suitable for assessment within this ISA Report. The title and broad coverage of each Implementation Plan is set out within the following table and figure.

Table 6: List of Implementation Plans accompanying the LTP4

Implementation Plans	
Strategic Issues	North West Essex
South Essex	Braintree and North Essex
Basildon Urban Area	Tendring Coast
South East Essex	Colchester and Colchester and Tendring Borders Garden Community
South West Essex	North East Essex
West Essex	Chelmsford Urban Area
Harlow and Gilston Urban Area	Mid Essex

Figure 2: Map of Implementation Plan areas



Source: LTP4 (2025)

5.1.2 Content of the Implementation Plans

Each Implementation Plan contains a number of focused schemes which correspond to identified needs in each area, based on planned growth and wider baseline issues or deficiencies. A summary of each Plan's schemes is included within the table below.

Table 7: Content of the Implementation Plans

Implementation Plan	Scheme Name	
Strategic Issues	• M25 junction 28 improvements • A12 Widening Marks Tey to Colchester • A12 Widening M25 to Chelmsford • A12 Widening Chelmsford Bypass • A12 Improvements Colchester to A14 Copdock • A12/ A14 Copdock Junction • A120 Braintree to A12 • Widespread roll-out of EV charging infrastructure • Essex Thameside improvements • GEML Rail Link to London Gateway • GEML strategic package • Liverpool St station	• East-West Rail • Freeport East Access Package • Stansted Airport Sustainable Access Package • Thames Freeport Access Package • Harlow and Gilston Sustainable Transport Corridors • North Essex Rapid Transit – phase 2 • M11 J8 Long Term Scheme • M11 J7 long term enhancement • Braintree Branch Line improvements • A133 Frating to Clacton enhancements • Rapid Transit - Cambridge to Uttlesford CAM • New Link Road connecting the A133 and

Implementation Plan	Scheme Name	
	• Stratford Station • WAML medium term package • Crossrail 2 • Ely Junction Improvements (including Haughley Junction)	A120. • Chelmsford North East Bypass • A127 strategic package • South Essex bus metro - rapid transit • Upgrade Wickford to Southminster line • Southend Airport Access Package
South Essex	• Multi Modal Transport Hub at Southend airport/ A127 accessibility/Airport Surface Access Plans (ASAS) • Southend Airport Connection Improvements • Rochford LCWIP • Sustainable links from Canvey to Thames Freeport • A127 strategic package • South Essex bus metro	• GEML Rail Link to London Gateway • A13 sustainable corridor • Thames Coastal Protection • Canvey to Thurrock bridge - • Essex Thameside rail network study (passenger, freight) • Canvey - surface water flooding • Canvey Access Improvement • Lower Thames Crossing

Implementation Plan	Scheme Name	
	• A13 NMU Crossing Improvements • A13 improvements (Essex) • Thames Freeport connection	• A127/A130 Fairglen • Electrify rail access to London Gateway
Basildon Urban Area	• Basildon Sustainable Transport Package • Basildon LCWIP Delivery • Pitsea Station improvements • Basildon Connectivity improvements • Nether Mayne Improvement • Fortune of War Roundabout Improvement	• Connections south across rail crossing (C2C) • Park and Ride for Basildon Hospital and College • IDP A127 corridor strategic improvements • A127 strategic package • South Essex bus metro
South East Essex	• Dunton-Basildon Connection • IDP A127 corridor strategic improvements • South Essex, Brentwood - IDP/West Horndon interchange • Castle Point LCWIP	• A129 bus corridor • A130 NMU Crossing Improvements • Thames Freeport connection • Dunton Hill - Laindon sustainable corridor

Implementation Plan	Scheme Name	
	• Dial a ride to Canvey • A128 improvement across C2C railway at West Horndon • Dunton Hills Garden Village Bus Lanes • Rail station to serve proposed Dunton EC • A127 strategic package • Basildon Connectivity improvements • A13 NMU Crossing Improvements • Wickford to Basildon bus access improvements • A13 improvements (Essex)	• Thames Coastal Protection • Canvey to Thurrock bridge - • Wickford Station rebuild/re-opening • Canvey - surface water flooding • Canvey Access Improvement • Park and Ride for Basildon Hospital and College • A127/A130 Fairglen • Canvey Town Centre • Wickford High Street Bus Gate • West Horndon Station • South Essex bus metro
South West Essex	• South Essex, Brentwood - IDP/West Horndon interchange • IDP Brentwood cycling grid	• South Essex, Brentwood - IDP/Station environments (public realm and accessibility) • Thames Freeport connection

Implementation Plan	Scheme Name	
	• M25, J28 - Brentwood cycle route (A1023 Brentwood cycling and walking scheme) • Epping LCWIP Delivery • Brentwood LCWIP Delivery • Waltham Abbey LCWIP Delivery • Wilson's Corner redesign • Brentwood Town Centre traffic improvements	• M25 / A12 junction 28 improvements • Crossrail 2 – TE does not have a position on CR2 • Lower Thames Crossing • M11 junction 5 'all access' junction scheme • M25, J29 improvements
West Essex	• Epping to Harlow sustainable corridor • Harlow Bus service review and improvement • Harlow Second Avenue bus lanes • M11 J7 Mitigations	• West Anglia main line package • Epping LCWIP Delivery • Waltham Abbey LCWIP Delivery • Crossrail 2 – TE does not have a position on CR2
Harlow and Gilston Urban Area	• A414 Burnt Mill to Gilston • Improve connection between Harlow rail station and town centre	• Harlow Bus service review and improvement • West Anglia main line package

Implementation Plan	Scheme Name	
	• Harlow Town Railway Station • Harlow STC's (BSIP Scheme) • Harlow Sustainable Transport Package • Harlow Southern Way • Harlow Mill Railway Station • Harlow second LCWIP • Harlow Town Centre LCWIP • Harlow and Gilston Sustainable Transport Corridor	• Harlow Second Avenue bus lanes • PAH (Princess Alexandra Hospital) improvements • Harlow Northern bypass • Harlow Edinburgh Way bus lanes • Harlow Centre to South Route Connector • Second Avenue / Tripton Road Bus Lane • Howard Way / First Avenue
North West Essex	• Multi Modal Transport Hub at Stansted airport / Airport Surface Access Plans (ASAS) • Cycle route through Hertfordshire to Bishops Stortford and Stansted Airport • Uttlesford LCWIP Delivery • Cycleway linkage from Takeley to Stansted Airport	• Great Chesterford/Audley End Station forecourt improvements • Stansted Second Rail Tunnel Bore • Chesterford Research Park Sustainable mode access improvements to out of town/centrally located employment zones • West Anglia main line package

Implementation Plan	Scheme Name	
	• Cycle/footbridge over A120 to link Birchanger to Bishops Stortford • Saffron Walden bus interchange • Saffron Walden to Great Chesterford cycleway (LCWIP) • Rapid transit links from Cambridge to Uttlesford (formerly CAM).	• HERT - Watford to Bishops Stortford to Stansted Airport RTS • Saffron Walden relief road • Bishops Stortford Bypass (A120/B1383 junction improvements) • Stansted Airport fly parking restrictions on residential roads
Braintree and North Essex	• Braintree Sustainable Transport Package • BSIP transformational projects - 'Reach' • Braintree LCWIP corridors • BSIP transformational projects - 'Thrive' • Braintree to Marks Tey Cycle Route • Braintree Branch Line passing loop • DigiGo Bus Scheme Expansion • Public realm improvements linked to Braintree Town Centre pedestrianisation	• New roundabout at the junction of Panfield Lane and Churchill Road • Dualling the A120 between Braintree and Marks Tey • A120 Millennium slips • Braintree Rail Line Adjustments • Halstead Bypass Scheme • Feasibility into a Mobility Hub for Braintree • Feasibility into park active for Braintree

Implementation Plan	Scheme Name	
	• Braintree Station Access Improvements (ITP) • A12 de-trunking • Flitch Way improvements • Bridges and subways across the A12 • A131 Braintree to Sudbury route improvements • Notley Cross Park and Ride (BSIP Scheme) • Springwood Drive Roundabout capacity improvements • Marks Farm Roundabout capacity improvements • Witham Town Centre Gyratory • A new road connecting Springwood Drive with Panfield Lane • Braintree to Witham B1037 Improvements	• Braintree bus corridor improvements • Braintree Town centre signage strategy • Cargo Bike Hire / Deliveries for Businesses • Braintree town centre cycle parking • Braintree town centre gyratory • Traffic Calming and wider roll out of 20mph zones • North Essex Rapid Transit • Improved facilities for pedestrians and cyclists at Porters Field • Asset Renewal of the Existing Cycle Network in Braintree • Additional Bus Stop Improvements in Braintree Town Centre and the wider urban area • Review of footpath provision in satellite settlements

Implementation Plan	Scheme Name	
Tendring Coast	• North Tendring Access Package • Investigate Opportunities for Sustainable Transport in Tendring • Clacton Station Improvements • Tendring Bus coast • More affordable bus fares for Tendring • Clacton Town Centre pedestrian and cycle infrastructure improvements • Clacton Town Centre Action Plan • Harwich rail line Improvements • Dovercourt pedestrian and cycle infrastructure improvements • Clacton rail line Improvements • Tendring LCWIP Delivery • Dovercourt station footbridge / tunnel • Tendring LCWIP Update	• Introducing modern high-quality to Tendring • A120 Freeport improvements • A133 Frating to Clacton enhancements • Clacton Bus Interchange Improvements • Harwich - Felixstowe foot ferry • Thorpe Le Soken bypass • Kirby Cross bus capacity Improvements • England Coast Path connection and tourist routes • Suggested cycle route: Manningtree to Harwich • Harwich active travel corridor • Improve Harwich bus network • BBCT rail freight terminal • Bathside Bay Container Terminal

Implementation Plan	Scheme Name	
	• Jaywick - Broadway Placemaking • Tendring Bus Network Improvements • Encourage Freeport East to provide transport for workers	• Reinstate X15 route Harwich to Colchester • Harwich Town Bus Route / Route Alteration and New Route • Harwich to Ipswich New Route • Tudor Fields cycle Route
Colchester and Colchester and Tendring Borders Garden Community	• Colchester City centre Masterplan schemes • Sustainable corridors Colchester • Colchester Sustainable Transport Package • Improved connections to land north of Ipswich Road • St Botolphs Redevelopment • ATF active travel schemes in Colchester city centre • Delivery of new Colchester LCWIP schemes • Colchester rapid transit	• Review of Colchester Park and Ride • Albert Roundabout Signalisation • Colne Bank Roundabout improvements • Zigzag bridge replacement • Improvements to the Straight Road/London Road junction layout • Haven Road flooding alleviation • Colne Causeway bus lane • Extension of Stanway bypass • Cowdray Avenue dualling

Implementation Plan	Scheme Name	
	• Crouch Street West • Colchester Environmental Improvements • Completion of Colchester LCWIP routes • North Station area/access • Colchester Cycling/Walking route improvement • Extension of existing Colchester LCWIP network - feasibility study • Improvements to Colchester Bus Station and Interchange • Park Active/Park and Stride/Park and Choose - feasibility study • Hythe area improvements study • Colchester City Centre Interchange Improvements • Expansion of Essex Pedal Power, including cycle parking • Implementation of Colchester parking strategy	• Colchester Bus Lane Improvements • Colchester lower emission zone - feasibility study • TCBGC mitigation schemes (various) • Full Colchester gyratory • Colchester Urban area parking feasibility study • implementation of bus priority measures required in urban area • hospital bus interchange improvements • Freight management in Colchester Urban Area • Establishment of a Quality Bus Partnership for Colchester • Colchester car club expansion • Improvements to Strategic bus connectivity in Colchester • B1022 Warren Lane/Maldon Road junction

Implementation Plan	Scheme Name	
	recommendations	improvements

North East Essex	• Braintree to Marks Tey Cycle Route
	• DigGo for Tendring
	• Tendring Bus Passes
	• Wivenhoe Trail - feasibility study and investment into route
	• Sudbury Rail line Improvements
	• South Colchester hinterland
	• A12 detrunking
	• Tendring hydrogen bus programme
	• Review of Colchester Park and Ride
	• Bridges and subways across the A12
	• B1022 Warren Lane/Maldon Road junction improvements
	• A120-A133 Link Road
		• Suggested cycle route: Manningtree to Brightlingsea
		• Potential Flagship Routes
		• DigiGo for Tendring
		• BBCT Mitigation Measures - Junction and Links
		• "Highway Improvements:
		  - A120-A133 link road
		  - A120 Braintree to A12 improvements"
		• Improve provisions for school buses outside Manningtree High School
		• Manningtree School Congestion / Bus Priority
		• Coxs Hill route alteration
		• Lawford Development Access / Route

Implementation Plan	Scheme Name
	• Manningtree Station Interchange • Coxs Hill / Wignall Street / Long Road Junction improvement • Coxs Hill / Station Road Roundabout • Establishment of a Quality Bus Partnership for Colchester • Improvements to bus infrastructure and access improvements in rural areas to support bus use • Improvements and increasing usage of Colchester P&R • Marks Tey lifts • Demand Responsive Transport in rural areas • A12 Junction 26 Improvements • A12 Junction 27 Improvements • A12 Junction 28 Improvements • A12 Junction 29 Improvements Alteration and Bus Priority • Mobility Hub - Manningtree Rail Station (Major interchange) • Mobility Hub - Manningtree High Street (Primary interchange) • Mobility Hub - Mistley High Street (Primary interchange) • Mobility Hub - Mistley Towers (Secondary Local interchange) • Mobility Hub - Manningtree Industrial Park (Secondary Local interchange) • Mobility Hub - Lawford (Secondary Local interchange) • Relocate bus stops on northern side of A137 / Coxs Hill station roundabout for easier station access • "Review feasibility and design cycling leisure routes: - Lawford and Manningtree Station"

Implementation Plan	Scheme Name	
	• Recommendations from Tendring Bus Network Review • Suggested cycle route: Manningtree to Mistley • Suggested cycle route: Manningtree to Harwich	• Cycle crossing improvements on the A120 • Walking improvements on Coxs Hill between the new Summers Park development and the Coxs Hill / Station Road roundabout, including improved street lighting and crossings • Manningtree Level Crossing Replacement and Underpass
Chelmsford Urban Area	• Springfield Road sustainable transport corridor • Chelmsford Sustainable Transport Package • Parkway sustainable transport corridor • LCWIP 1 Moulsham • Army & Navy Sustainable Transport Package • Baddow Road sustainable transport corridor • Chelmsford LCWIP Delivery • Broomfield sustainable transport corridor • New London Road sustainable transport	• New London Road Bus Access Improvements • Essex Regiment Way Sustainable Transport Corridor • Beaulieu Park Station • Broomfield - Chelmsford Garden Community active travel route • Broomfield Road cycle route extension to hospital • Hammonds Farm (East Garden Community) Sustainable Travel Corridor

Implementation Plan	Scheme Name	
	corridor • Chelmsford Bus Interchange • Widford Park and Ride	• LCWIP 3 City Centre to ARU to Springfield (ATF 4) • LCWIP 5 Broomfield Rd (link with STC for Broomfield Rd) • East Chelmsford Cycle Connectivity Links (CCC priority) • Duke Street to City Centre Cycle Route
Mid Essex	• South Woodham Integrated Transport Package • Generals Lane cycle corridor • Southminster to Burnham cycle route • Maldon cycle connections • Greenways along Rivers Blackwater and Crouch • Southminster branch upgrades (from Wickford Station) • Blackwater Trail	• Maldon High Street Bus Operations Feasibility Studies - High Street Option 1 -3 & Parking review • Widford Park and Ride • A414 Route Strategy • B1018/1019 bypass to A12 from Maldon • Chelmsford North East Bypass/section 1B&2 • Improvements to Duke of Wellington Roundabout/B1019 • South Woodham Ferrers (SWF) Bypass

Implementation Plan	Scheme Name	
	• Maldon Town LCWIPs • Completion of Great Waltham to Chelmsford cycleway • Dengie Bus Network Improvements • Express bus services from Maldon to key rail stations • New bus service between South Woodham Ferrers and Maldon • Maldon Town Upper High Street Improvements • Bradwell Nuclear Plant links • A12 de-trunking • Burnham branch line improvements • Reinstate Maldon to Witham line • Maldon to SWF Active Travel Link • Market Hill bus gate (Maldon)	• Danbury Eves Corner Improvements • B1010/B1021 Junction Improvements • South Maldon relief road (SMRR) • B1010 Junction Improvements • Maldon Town Wide Signage Strategy • Expansion/Improvement of Tesco's Park and Ride service in Maldon • Accessibility between south Maldon town and the town centre (Fambridge Road) • Enhanced Partnership for Maldon District • Footpath provision for villages in Maldon District • Review of the rural bus network in Maldon district - feasibility of providing high quality local feeder bus links to and from high frequency routes • Air Quality Theatre production at Maldon Schools

Implementation Plan	Scheme Name	
	• Chelmsford North East Bypass (CNEB) • Maldon Park and Ride Scheme • Development of a Maldon Mobility Hub network and rural bus services • Chelmsford North East Bypass longer term dualling scheme and slip roads to A12	• Footbridge across the canal to connect industrial estates to Heybridge • Introduction of D-DRT service north east of Maldon District

5.2 Reasonable Alternatives

As previously set out, each Implementation Plan contains a number of focused schemes which correspond to identified needs, providing the policy direction to shape the transport and travel components of local planning authorities' Local Plans for growth and development, in response to those Plan's strategies and site allocations. With this considered and in response to the strategic nature of the wider LTP4, it is considered that reasonable alternatives to many of the schemes and aspirations included are more appropriately considered as part of the Local Plans themselves.

This position is taken within this ISA Report in further consideration of the fact that many of the Implementation Plans schemes respond directly to Local Plan site allocations that have already been through the plan-making process and are adopted as part of those Local Plans.

5.3 Assessment of the Implementation Plans

The below table shows an overview of the impacts identified through the assessment of the Implementation Plans, and the following sub-sections provide a narrative for those impacts, per Implementation Plan.

Table 8: Assessment of the content of the Implementation Plans

ISA Obj.	Strategic Issues	South Essex	Basildon Urban Area	South East Essex	South West Essex	West Essex	Harlow and Gilston Urban Area	North West Essex	Braintree and North Essex	Tendring Coast	Colchester & CTBGC[1]	North East Essex	Chelmsford Urban Area	Mid Essex
1	?	?	?	?	?	?	?	?	?	?	?	?	?	?
2	?	?	?	?	?	?	?	?	?	?	?	?	?	?
3	?	0	?	0	0	0	0	0	0	0	0	0	0	0
4	?	?	?	?	?	?	?	?	?	?	?	?	?	?
5	?+	?+	?+	+	?+	+	+	?+	+	+	+	?+	+	+
6	?+	?+	?+	+	?+	+	+	?+	+	+	+	?+	+	+
7	?	?	?	?	?	?	?	?	?	?	?	?	?	?

[1] CTBGC: Colchester & Tendring Borders Garden Community

ISA Obj.	Strategic Issues	South Essex	Basildon Urban Area	South East Essex	South West Essex	West Essex	Harlow and Gilston Urban Area	North West Essex	Braintree and North Essex	Tendring Coast	Colchester & CTBGC[1]	North East Essex	Chelmsford Urban Area	Mid Essex
8	?	?	?	?	?	?	?	?	?	?	?	?	?	?
9	++	++	+	++	++	++	++	+	++	++	++	+	++	++
10	++	++	+	+	++	+	+	+	++	++	++	++	+	+
11	+	++	+	++	++	+	+	++	+	+	++	++	+	++
12	?	?+	?+	+	+	+	+	?+	+	+	+	+	+	+
13	++	++	+	+	+	+	+	++	+	++	+	+	+	+

The following sub-sections consider the potential effects raised in the assessment of each Implementation Plan (IP).

5.3.1 The Strategic Issues IP

The Strategic Issues IP has the potential for significant effects in regard to:

- Sustainable Transport improvements;
- Journey time reliability; and
- Economic growth.

The assessment of the Strategic Issues IP raises largely uncertain implications in regard to environmental ISA objectives as far as effects are likely to be realised at the site level in those locations of any new 'large scale' infrastructure. This includes effects related to the historic environment, landscapes, flood risk, biodiversity and soils which may possibly be affected at the micro level and also cumulatively through new road schemes such as widening, new dual carriageway links, and the provision of new Rapid Transit systems. Effects would be more appropriately identified at the detailed design stage and through adequate and suitable assessments in relation to environmental conditions.

Uncertain effects are also realised at this high level in regard to human health, due to many of the strategic schemes identified in the IP being related to the strategic road network. Although Active Travel schemes are included within the IP, the effects on an improved road network may lead to private vehicle trips being more attractive. Impacts are not identified as negative however, as it must be acknowledged that at the strategic level, Active Travel opportunities are not going to be relevant for long distances or alternatives to travelling by the County's network of A-roads and motorways. The effects highlighted for climate change / emission and air quality ISA Objectives also highlight a degree of uncertainty for this reason; that many of the strategic schemes are likely to make car travel more attractive.

The Strategic Issues IP, notably the identified schemes, respond directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. This is recognised in this assessment, which identifies the potential for significant effects on those ISA Objective themes related to sustainable transport and increasing journey time reliability. The spread of schemes cover the majority of the county and are inclusive in their scope of seeking to improve conditions for existing road users, future users associated with growth, and also those with and without private vehicles. Effects are not identified as significant in regard to access, due to the scope of the IP schemes not extending to rural areas. This is to be expected however from a strategic plan, and other Implementation Plans exist to ensure that these communities also experience improvements to the transport network.

Significant effects are also identified in regard to economic growth, to reflect the scope of IP schemes, which can all be expected to lead to positive implications. Directly, those IP schemes that focus on the GEML enhancements, Crossrail 2, the East-West Rail scheme, the Freeport East Access Package, the Stansted Airport Sustainable Access Package, the

Thames Freeport Access Package, linking Uttlesford growth with employment in Cambridge via Rapid Transit, and the Southend Airport Access Package can all be expected to significantly promote and enhance access to employment opportunities in Essex, and perhaps also attract inward investment.

5.3.2 The South Essex IP

The South Essex IP has the potential for significant effects in regard to:

- Sustainable Transport improvements;
- Journey time reliability; and
- Economic growth.

The assessment of the South Essex IP also raises largely uncertain implications in regard to environmental ISA objectives as far as effects are likely to be realised at the site level in those locations of any new 'large scale' infrastructure. Mentioned within the scope of IP schemes, this would include the Lower Thames Crossing; an NSIP that has been identified as having significant environmental concerns particularly in regard to archaeology. Again however, effects would be and have been more appropriately identified at the detailed design stage and through adequate and suitable assessments in relation to environmental conditions. The IP scheme addressing surface water flood risk at Canvey Island will seek to address road flooding and result in neutral or 'no' impacts on the baseline position in relation to ISA Objective 3.

Uncertain to positive effects are also realised at this high level in regard to human health, due to many of the schemes identified in the IP being related to the strategic road network. Although Active Travel schemes are included within the IP, the effects on an improved road network may lead to private vehicle trips being more attractive. The effects highlighted for climate change / emission and air quality ISA Objectives also highlight a degree of uncertainty for this reason; that many of the strategic schemes are likely to make car travel more attractive. Nevertheless, positive implications relate to the IP schemes corresponding to the A13 NMU Crossing Improvements (which can be expected to enhance the potential for Active Travel) and also the protection of the Thames Estuary coastal path.

The South Essex IP, notably the identified schemes, respond directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. This is recognised in this assessment, which identifies the potential for significant effects on those ISA Objective themes related to sustainable transport and increasing journey time reliability. The spread of schemes cover the majority of the county and are inclusive in their scope of seeking to improve conditions for existing road users, future users associated with growth, and also those with and without private vehicles. Significant positive effects are also realised for access, where the scope of the IP's schemes cover the vast majority of South Essex, notably where people live in the broad area, and also addressing deficiencies across all modes and similarly addressing issues of transport poverty in the area.

Significant effects are however also identified in regard to economic growth, to reflect the scope of IP schemes, which can all be expected to lead to positive implications. Directly, those IP schemes that focus on improving connections and providing sustainable links to Thames Freeport, and also matching growth in the area can all be expected to significantly promote and enhance access to employment opportunities in South Essex, and perhaps also attract inward investment. The IP schemes similarly address the baseline position of gaps in the electrification on the Essex Thameside corridor freight services, with many still hauled by diesel locomotives, through the Essex Thameside rail network study IP scheme.

5.3.3 The Basildon Urban Area IP

The assessment of the Basildon Urban Area IP, consistent with the assessment of other Implementation Plans, will have uncertain effects in regard to environmental ISA objectives, with effects more appropriately being identified at any forthcoming design stage.

Uncertain to positive effects are also realised at this high level in regard to human health and wellbeing, due to many of the schemes identified in the IP being related to the strategic road network. Although Active Travel schemes are included within the IP, the effects on an improved road network may lead to private vehicle trips being more attractive. The effects highlighted for climate change / emission and air quality ISA Objectives also highlight a degree of uncertainty for this reason. Nevertheless, positive implications relate to the IP schemes corresponding to the address issues of severance (which can be expected to enhance the potential for Active Travel and a sense of community) and also connectivity improvements.

As with other Implementation Plans, the Basildon Urban Area IP seeks to respond directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. The spread of schemes cover the majority of transport modes, including Active Travel. Positive effects are also realised for access, where the scope of the IP's schemes can be seen to address issues of severance in the area. The Basildon Urban Area IP has not been assessed as giving rise to any significant effects, largely due to the small scale of the IP area. Nevertheless, some of the schemes included within the Implementation Plan are cross-boundary and larger in scope than the Basildon urban area in isolation. The positive effects of those schemes are more appropriately identified elsewhere in this ISA Report, whether that be in larger IP assessments or the cumulative effects section.

Positive effects are however also identified in regard to economic growth, to reflect the scope of IP schemes, which can all be expected to lead to positive implications.

5.3.4 The South East Essex IP

The South Essex IP has the potential for significant effects in regard to:

- Sustainable Transport improvements; and
- Access.

Again, the assessment of the South Essex IP also raises largely uncertain implications in regard to environmental ISA objectives as far as effects are likely to be realised at the site level. The IP scheme addressing surface water flood risk at Canvey Island will seek to address road flooding and result in neutral or 'no' impacts on the baseline position in relation to ISA Objective 3.

Positive effects are realised at this high level in regard to human health, due to many of the schemes identified in the IP being related to sustainable transport and Active Travel. The South Essex IP, notably the identified schemes, respond directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. This is recognised in this assessment, which identifies the potential for significant effects on those ISA Objective themes related to sustainable transport. The spread of schemes are inclusive in their scope of seeking to improve conditions for existing communities and future communities associated with growth. Significant positive effects are also realised for access, where the scope of the IP's schemes address deficiencies across a variety of modes.

Positive effects are also identified in regard to economic growth, to reflect the scope of IP schemes, which can all be expected to lead to positive implications.

5.3.5 The South West Essex IP

The South West Essex IP has the potential for significant effects in regard to:

- Sustainable Transport improvements;
- Journey time reliability;
- Access;
- Economic growth.

The assessment of the South Essex IP also raises largely uncertain implications in regard to environmental ISA objectives, with effects likely to be realised at the site level in those locations of any new infrastructure. Mentioned within the scope of IP schemes, this would again include the Lower Thames Crossing.

Positive effects are realised at this high level in regard to human health, due to many of the schemes identified in the IP being related to sustainable transport and Active Travel. The South Essex IP, notably the identified schemes, respond directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. This is recognised in this assessment, which identifies the potential for significant effects on those ISA Objective themes related to sustainable transport. The spread of schemes cover the majority of the county and are inclusive in their scope of seeking to improve conditions for existing communities and future communities associated with growth. Significant positive effects are also realised for access, where the scope of the IP's schemes address deficiencies across a variety of modes, including to the strategic road network.

Significant positive effects are also identified in regard to economic growth, to reflect the scope of IP schemes, which can all be expected to lead to positive implications. Directly, those IP schemes that focus on improving connections and providing sustainable links at a West Horndon Station Interchange, the Thames Freeport connection, the Lower Thames Crossing, any renewed interest in Crossrail 2, and also matching growth in the area; these schemes can all be expected to significantly promote and enhance access to employment opportunities in the broad area and beyond, and also attract inward investment.

5.3.6 The West Essex IP

The West Essex IP has the potential for significant effects in regard to:

- Sustainable Transport improvements.

Again, the assessment of the West Essex IP raises largely uncertain implications in regard to environmental ISA objectives.

Positive effects are realised at this high level in regard to human health, due to many of the schemes identified in the IP being related to sustainable transport and Active Travel. Positive effects are also realised for access. The West Essex IP responds directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. This assessment identifies the potential for significant effects on those ISA Objective themes related to sustainable transport. The spread of schemes are inclusive in their scope of seeking to improve conditions for existing communities and future communities associated with growth, including economic growth.

5.3.7 The Harlow and Gilston Urban Area IP

The Harlow and Gilston Urban Area IP has the potential for significant effects in regard to:

- Sustainable Transport improvements.

The assessment of the West Essex IP raises largely uncertain implications in regard to environmental ISA objectives, consistent with the appraisal of other IPs in this report.

Positive effects are realised at this high level in regard to human health, due to many of the schemes identified in the IP being related to sustainable transport and Active Travel. Positive effects are also realised for access. The IP responds directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. This assessment identifies the potential for significant effects on those ISA Objective themes related to sustainable transport. The spread of schemes are inclusive in their scope of seeking to improve conditions for existing communities and future communities associated with growth, including economic growth.

5.3.8 The North West Essex IP

The North West Essex IP has the potential for significant effects in regard to:

- Economic growth.

The assessment of the North West Essex IP raises largely uncertain implications in regard to environmental ISA objectives, consistent with the appraisal of other IPs in this report.

Uncertain to positive effects are realised at this high level in regard to human health, due to a number of the schemes identified in the IP being related to the strategic road network. Although Active Travel schemes are included within the IP, the effects on an improved road network may lead to private vehicle trips being more attractive. The effects highlighted for climate change / emission and air quality ISA Objectives also highlight a degree of uncertainty for this reason; that many of the strategic schemes are likely to make car travel more attractive. Nevertheless, positive implications relate to the IP schemes corresponding to public transport improvements and enhancements to connectivity.

The North West IP, notably the identified schemes, respond directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. This is recognised in this assessment, which identifies the potential for positive effects on those ISA Objective themes related to access. The spread of schemes cover the majority of the broad area and are inclusive in their scope of seeking to improve conditions for existing road users, future users associated with growth, and also those with and without private vehicles. However, it should be noted that the North West of Essex is very rural, with high car ownership, isolated settlements away from the M25 and A120, only a single rail line, and similarly few public transport options in many areas. To that extent, impacts are not considered significantly positive as far as the Plan can only do so much to promote modal shift and influence service providers.

Significant positive effects are identified in regard to economic growth, to reflect the scope of IP schemes, which can all be expected to lead to positive implications. Directly, those IP schemes that focus on linking growth locations in north Uttlesford with employment opportunities in Cambridge, improving rail capacity at Stansted Airport, and ensuring a package of improvements along the West Anglia main line, can be expected to ensure positive implications in regard to economic growth. It should be noted however that the schemes are considered likely to enhance commuting opportunities and access to employment opportunities outside the broad area, rather than promote inward investment in a range of employment sectors in North West Essex.

5.3.9 The Braintree and North Essex IP

The Braintree and North Essex IP has the potential for significant effects in regard to:

- Sustainable Transport improvements; and
- Journey time reliability.

The assessment of the Braintree and North Essex IP raises largely uncertain implications in regard to environmental ISA objectives, consistent with the appraisal of other IPs in this report.

Positive effects are realised at this high level in regard to human health, due to many of the schemes identified in the IP being related to sustainable transport and Active Travel. Positive effects are also realised for access. The IP responds directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network in line with one of the County's most rural districts. This assessment identifies the potential for significant effects on those ISA Objective themes related to sustainable transport and also journey time reliability. The spread of schemes are inclusive in their scope of seeking to improve conditions for existing communities and future communities associated with growth, including economic growth. The IP schemes also seek to address existing congestion issues, to alleviate traffic on the A120, the Braintree to Witham B1037, the Marks Farm Roundabout capacity improvements, the A131 Braintree to Sudbury route improvements, and gyratory roundabouts at Braintree and Witham town centres.

5.3.10 The Tendring Coast IP

The Tendring Coast IP has the potential for significant effects in regard to:

- Sustainable Transport improvements;
- Journey time reliability; and
- Economic growth.

The assessment of the Tendring Coast IP raises largely uncertain implications in regard to environmental ISA objectives, consistent with the appraisal of other IPs in this report.

Positive effects are realised at this high level in regard to human health, due to many of the schemes identified in the IP being related to sustainable transport and Active Travel. Positive effects are also realised for access. The IP responds directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network in line with one of the County's most rural districts and where public transport options are few, and often less inclusive and connected in comparison to other areas of Essex. This assessment identifies the potential for significant effects on those ISA Objective themes related to sustainable transport and also journey time reliability. The spread of schemes are inclusive in their scope of seeking to improve conditions for existing communities and future communities associated with growth, particularly economic growth.

5.3.11 The Colchester & Colchester and Tendring Borders Garden Community IP

The South West Essex IP has the potential for significant effects in regard to:

- Sustainable Transport improvements;

- Journey time reliability; and
- Access.

The assessment of the Colchester and Colchester and Tendring Borders Garden Community IP also raises largely uncertain implications in regard to environmental ISA objectives, with effects likely to be realised at the site level in those locations of any new infrastructure. Mentioned within the scope of IP schemes, this would again much of the work surrounding sustainable corridors, the St Botolphs redevelopment, and new rapid transit routes to support growth and the Garden Community.

Positive effects are realised at this high level in regard to human health, due to many of the schemes identified in the IP being related to sustainable transport and Active Travel. The IP, notably the identified schemes, respond directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. This is recognised in this assessment, which identifies the potential for significant effects on those ISA Objective themes related to sustainable transport, access, and journey time reliability; the suite of IP schemes can be expected to contribute to a cumulative easing of congestion issues in the town. The spread of schemes cover the majority of the broad area and are inclusive in their scope of seeking to improve conditions for existing communities and future communities associated with growth. Significant positive effects are also realised for access, where the scope of the IP's schemes address deficiencies across a variety of modes, including improvements to the local road network.

Positive effects are also identified in regard to economic growth, to reflect the scope of IP schemes, which can be expected to lead to positive implications where the town centre appears to the focus of many regeneration schemes, particularly those transport and public realm elements of the Colchester City centre masterplan.

5.3.12 The North East Essex IP

The North East Essex IP has the potential for significant effects in regard to:

- Sustainable Transport improvements;
- Journey time reliability;
- Access; and
- Economic growth.

The assessment of the North East Essex IP raises largely uncertain implications in regard to environmental ISA objectives, consistent with the appraisal of other IPs in this report.

Uncertain to positive effects are realised at this high level in regard to human health, due to a number of the schemes identified in the IP being related to the strategic road network. Although Active Travel schemes are included within the IP, the effects on an improved road network may lead to private vehicle trips being more attractive. The effects highlighted for climate change / emission and air quality ISA Objectives also highlight a degree of

uncertainty for this reason; that many of the strategic schemes are likely to make car travel more attractive. Nevertheless, positive implications relate to the IP schemes corresponding to public transport improvements and enhancements to connectivity.

The North East IP, notably the identified schemes, respond directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. This is recognised in this assessment, which identifies the potential for positive effects on those ISA Objective themes related to journey time reliability, and access. The spread of schemes cover the majority of the broad area and are inclusive in their scope of seeking to improve conditions for existing road users, future users associated with growth, and also those with and without private vehicles. However, it should be noted that the North East of Essex is largely rural in nature, with high car ownership, isolated settlements away from the A12 and A120 and few public transport options in many areas. To that extent, impacts are not considered significantly positive for sustainable transport as far as the Plan can only do so much to promote modal shift and influence service providers despite commitments to improve physical infrastructure.

Positive effects are identified in regard to economic growth, to reflect the scope of IP schemes, which can all be expected to lead to positive implications in terms of connectivity to existing and future employment development areas.

5.3.13 The Chelmsford Urban Area IP

The Chelmsford Urban Area IP has the potential for significant effects in regard to:

- Sustainable Transport improvements.

The assessment of the Chelmsford Urban Area IP raises largely uncertain implications in regard to environmental ISA objectives, consistent with the appraisal of other IPs in this report.

Positive effects are realised at this high level in regard to human health, due to many of the schemes identified in the IP being related to sustainable transport and Active Travel. Positive effects are also realised for access. The IP responds directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. This assessment identifies the potential for significant effects on those ISA Objective themes related to sustainable transport. The spread of schemes are inclusive in their scope of seeking to improve conditions for existing communities and future communities associated with growth, including economic growth.

5.3.14 The Mid Essex IP

The Mid Essex IP has the potential for significant effects in regard to:

- Sustainable Transport improvements;
- Access.

The assessment of the Mid Essex IP raises largely uncertain implications in regard to environmental ISA objectives, consistent with the appraisal of other IPs in this report.

Positive effects are realised at this high level in regard to human health, due to many of the schemes identified in the IP being related to sustainable transport and Active Travel. Significant positive effects are also realised for access. The IP responds directly to the baseline in terms of ensuring improvements regarding the movement of people, goods, and the transport network. This assessment identifies the potential for significant effects on those ISA Objective themes related to sustainable transport. The spread of schemes are inclusive in their scope of seeking to improve conditions for existing communities and future communities associated with growth, including economic growth.

6. Cumulative, Synergistic, Temporal and Transboundary Effects

6.1 Introduction

As set out earlier in this Report, relationships between different elements of the Plan are assessed in order to highlight any possible strengthening or weakening of impacts from their implementation together. Cumulative effects respond to impacts occurring directly from two different elements together, and synergistic effects are those that offer a strengthening or worsening of more than one element of the Plan that is greater than any individual impact. Additionally, any cumulative impacts with other plans or projects are highlighted within this assessment.

6.2 Cumulative, Synergistic & Temporal Effects at the Plan Level

6.2.1 Environmental Effects

The cumulative environmental effects of the LTP4 are difficult to identify, such is the high level nature of the document. When considering all of the schemes within the Implementation Plans cumulatively, it is similarly difficult as much depends on the timeframes of delivery, both through construction and also the delivery of sustainable transport / active travel schemes within developments.

Nevertheless, it can be considered that notionally any negative implications arising from those schemes that deliver new road infrastructure to support housing or employment growth in the county, would be broadly balanced by the similar integration of active travel measures (in terms of emissions). This is also the case in regard to biodiversity in terms of net gain requirements. Much will depend however on individual schemes, in regard to both their location and the detail of proposals.

The Habitats Regulations Assessment (HRA) accompanying the LTP4 identifies considers the potential impacts on Habitats sites likely to result from the LTP4, including in combination (cumulative) effects. The HRA concludes that the policies and policy direction of the LTP4 are not considered to result in any significant effects on any Habitats sites either alone or in combination with other plans and projects.

Nevertheless, a number of the schemes identified within the various supporting Implementation Plans, have been screened within the HRA as potentially giving rise to significant effects. As a result, the requirement for project level HRAs should be, and is, explicitly enshrined in the LTP4 to ensure that effects are fully known and mitigated at the detailed application stage including effects in combination with other plans and projects. These schemes are identified (with the potential impact) in the following table.

Table 9: Implementation Plan schemes and potential effects on Habitats Sites

Implementation Plan Scheme	Potential to impact
A12 Widening J19 - J25 (Chelmsford to Marks Tey)	Water Quality
A12 Widening Marks Tey to Colchester	Water Quality
A12 Widening Chelmsford Bypass	Water Quality
A12 Improvements Colchester to A14 Copdock	Water Quality
A12/ A14 Copdock Junction	Water Quality
Essex Thameside improvements	Water Quality
Braintree Branch Line improvements	Water Quality
Crossrail 2	Water Quality
A133 Frating to Clacton enhancements	Water Quality
New Link Road connecting the A133 and A120.	Water Quality
Chelmsford North East Bypass	Water Quality
A127 strategic package	Water Quality
Lower Thames Crossing	Water quality and Air quality
Upgrade Wickford to Southminster line	Water quality
Freeport East Access Package	Water quality and Air quality
Thames Freeport Access Package	Water quality and Air quality

Implementation Plan Scheme	Potential to impact
Strategic PROW enhancements to form long distance routes	Recreational disturbance
A12 Improvements	Water Quality
Bridges and subways across the A12	Water Quality
Improved access to Canvey	Functionally Linked Land & Water Quality

Source: Essex Local Transport Plan 4 – Strategic HRA Screening Report (2025)

Additionally, the ISA objective related to soil quality, and the best and most versatile agricultural land (BMV) can be seen as not being directly addressed by any of the Plan's policies. It is considered that the supporting text of the Policies and the wider Plan in general could seek to address impacts on soil quality, however this is not a specific criticism of the Plan itself as such considerations will be made at the point of specific schemes being submitted for planning permission, and as part of discussions regarding planning balance. Nevertheless, there may be a significant cumulative loss of BMV across the county should all schemes be considered in isolation and not cumulatively.

6.2.2 Social and Economic Effects

It can be considered that there will be significant positive cumulative effects on the majority of the ISA Objectives within the Plan's remit and focus and covering the responsibilities of the local transport authority. The focus of the LTP4 on connectivity ensures improvements in and the integration of Active Travel and sustainable transport but acknowledging the position that many people in Essex rely on private vehicle use. The inclusive nature of the Plan's policy position, and many of the Implementation Plan schemes, ensures that all residents of Essex can be expected to have realistic transport options. Crucially also, the LTP4 ensures that sustainable and affordable transport solutions can be integrated into new developments and that infrastructure can match growth. If integrated beyond individual schemes and 'joined up' with partnership working outcomes with other service providers, this can afford a significant cumulative strengthening of connectivity across the county with similarly significant effects to investment and economic growth.

6.3 Transboundary Effects

Transboundary effects are those that can be felt outside the Plan area and off-site from individual schemes or commitments.

6.3.1 Relationship with Neighbouring Authorities

The LTP4 sets out that transport does not respect boundaries, district or county, and so the broad transport objectives of neighbouring authorities such as Suffolk, Cambridgeshire, Hertfordshire, Greater London, Thurrock and Southend-on-Sea all have an impact in Essex. Essex is a member of Transport East, an organisation of the transport authorities of Norfolk, Suffolk, Essex, Southend and Thurrock. Transport East aims to improve transport for all residents in the East by creating safe, efficient and net zero transport networks over the next 30 years.

The LTP4 identifies the need for collaboration with a wide range of partners to improve travel in Essex and across neighbouring local authorities where necessary. Similarly the Plan sets out that the local transport authority will work collaboratively with partners and other third parties (such as National Highways, neighbouring local transport authorities, major generators of traffic such as ports and airports, and utility companies) to co-ordinate maintenance works across transport networks. This is designed to minimise disruption to the travelling public. Further, the LTP4 sets out the need to plan across boundaries, especially for wider projects related to rail, freight, maritime and planning. This includes access and connectivity to the nationally significant (and growing) ports in Thurrock, at London Gateway, and Tilbury. These are served by the A13, M25 and Essex Thameside rail corridor, all within Essex. Additionally, the LTP4 acknowledges that Essex is a major freight centre and a net exporter of goods to the rest of the UK and that the major roads in Essex perform a national role in moving freight.

In regard to growth, the Harlow & Gilston Garden Community is a cross-boundary new settlement in Essex and Hertfordshire of approximately 16,500 new homes. As part of meeting the criteria of garden communities, sustainable transport is crucial to place making and requires complex multi-authority working between the various authorities.

6.3.2 Infrastructure Projects / Schemes

The emergence of numerous Nationally Significant Infrastructure Projects (NSIPs) and major infrastructure schemes in Essex is significant and increasing. These include multiple schemes to reinforce and improve the electricity transmission network in the region, as well as solar and wind farms. Regarding transport, the Lower Thames Crossing seeks to introduce a road tunnel under the River Thames joining Essex to Kent to alleviate congestion east of London by nearly doubling road capacity crossing the river.

The status of many NSIPs is advanced and going through a rigorous process towards eventual consent that involves the county council as the local transport authority. The NSIP process involves detailed studies to explore impacts on various environmental factors to inform Environmental Impact Assessment and then Codes of Construction Practices and Local Environmental Management Plans, all of which are often subject to statutory and non-statutory consultation. The scope of these processes are vast, and finalisation can take years. It is considered that any cumulative impacts resulting from NSIPs and LTP4 schemes or activities are being adequately and suitably considered at the detailed application level.

7. Conclusions

7.1 'Whole Plan' Effects by Sustainability Theme

Evidence underpinning the LTP4 highlights various key findings which have shaped the development of the Plan. Generally, it can be expected that the Plan's planned activities, and the supporting Implementation Plans, would improve the baseline position, including trend data, where relevant across a variety of transport related factors. Additionally, it can be expected that the Implementation Plans seek to meet transport demand associated with new growth and also respond to higher level notions and targets of moving towards low carbon transport and encouraging public transport uptake.

The overall effects of this ISA Report are outlined within the following sub-headings, each of which corresponds to a thematic Integrated Sustainability Objective. The conclusions are drawn from an analysis of the individual policy, chapter / section, and Implementation Plan appraisals within this Report, as well as the cumulative, synergistic, and temporal assessment work undertaken.

7.1.1 Biodiversity

Short-Medium Term Effects	Long Term Effects
Uncertain (positive / negative)	Uncertain (positive / negative)

The Plan's potential effects on biodiversity have been assessed as uncertain at this stage, responding to the potential positive effects that can be expected through Policy 8 and transport schemes ensuring biodiversity net gains, but also acknowledging the potentially negative implications associated with some of the Implementation Plan schemes. These potential negative effects emanate from the findings of the HRA, which states that there is potential for Likely Significant Effects on the integrity of Habitats sites from several impact pathways (air quality, disturbance, functionally linked land and water quality). The HRA acknowledges that further and precise impacts would only be understood through project level HRA. These would be required at the application stage in order to demonstrate no Adverse Effect On the Integrity of any Habitats sites within scope of the HRA Screening Report. The LTP4 acknowledges this position and includes the requirement for project level HRA for qualifying schemes.

7.1.2 Water quality and resources

Short-Medium Term Effects	Long Term Effects
Uncertain (neutral / negative)	Uncertain (neutral / negative)

Policy 8 of the LTP4 includes that the local transport authority will aim to reduce the impact of transport on the natural environment to minimise pollution. Further, Implementation Plan schemes are included that deal with the potential effects of surface water flood risk which can be considered to have secondary positive implications, and neutral impacts, on water quality.

Nevertheless, various Implementation Plan schemes have been identified as having the potential to impact water quality pathways as identified within the HRA. The Plan acknowledges that individual and cumulative schemes may have such impacts and as a result requires project level HRA to determine impacts on water quality at the application stage alongside suggested mitigation. To this effect, the impacts on water quality of the Plan as a whole are uncertain, with the potential for neutral to negative effects at this stage.

7.1.3 Flood risk

Short-Medium Term Effects	Long Term Effects
Neutral	Neutral

The Plan addresses issues of flood risk through prevention, appropriate mitigation where required, and also the role the local transport authority can have in flood defence where relevant and in promoting greater flood resilience on the highway network. The LTP4 acknowledges the impact that new transport infrastructure can have in certain areas and includes commitments to mitigate and improve conditions through Implementation Plan schemes, particularly at Canvey Island. As a result, effects are considered neutral of the Plan as a whole, associated with the Plan's stance of prevention and mitigation.

7.1.4 Soils / agricultural land

Short-Medium Term Effects	Long Term Effects
Uncertain (negative)	Uncertain (negative)

The ISA objective related to soil quality, and the best and most versatile agricultural land (BMV) can be seen as not being directly addressed by any of the Plan's policies. It is considered that the supporting text of the Policies and the wider Plan in general could seek to address impacts on soil quality, however this is not a specific criticism of the Plan itself as such considerations will be made at the point of specific schemes being submitted for planning permission, and as part of discussions regarding planning balance. It is not considered viable or realistic for major transport schemes to avoid such land should they be needed in specific areas.

Nevertheless, overall uncertain to potentially negative impacts are raised in regard to soil quality and BMV of the Plan as a whole.

7.1.5 Air quality

Short-Medium Term Effects	Long Term Effects
Uncertain (positive / negative)	Uncertain (positive / negative)

The LTP4 seeks to ensure the implementation of the Essex Air Quality Strategy and deliverable Air Quality Action Plans. Further, secondary or indirect impacts may also be forthcoming as a result of the successful implementation of the local transport authority's planned activities that can be expected to heighten the potential for public transport uptake through better connectivity and ease of use.

Nevertheless, the effects highlighted for air quality also highlight a degree of uncertainty resulting from the fact that many of the strategic schemes are likely to make car travel more attractive. The HRA identifies that the Lower Thames Crossing, Freeport East Access Package, and Thames Freeport Access Package all have the potential to have impacts on Habitats sites associated with air quality, associated with an increase in private vehicle movements.

Regarding human health, Health Impact Assessment (HIA) at the Plan level has been undertaken for the LTP. This 'strategic' HIA concludes that the extent of health impacts arising from Implementation Plan schemes are however more suitably identified at the application stage. To that extent, the Plan has uncertain impacts at this stage, with the potential for both negative and positive implications from individual schemes.

7.1.6 Climate change

Short-Medium Term Effects	Long Term Effects
Positive	Positive

The LTP4's Transport Strategy includes themes and outcomes specifically regarding decarbonising transport in the face of climate change and protecting and improving the environment for the long-term. Further, the Plan seeks to ensure a transport network that is flexible, reliable, operates safely, and responds to a changing climate including extreme weather. Amongst more specific examples of this approach within the Plan are the integration of Sustainable Drainage Systems (SuDS), planting more street trees, playing an active role in flood defence and coastal protection, managing the introduction of appropriate alternative fuel infrastructure, and supporting the pilot and where appropriate the adoption of new technology which enables more sustainable travel.

When considered at the macro scale, and not as a result of individual schemes (see effects identified for air quality where relevant), the Plan can be seen to have positive implications in regard to climate change, both in terms of resilience against future events, and also reducing emissions through promoting and facilitating sustainable transport options.

7.1.7 The historic environment

Short-Medium Term Effects	Long Term Effects
Uncertain	Uncertain

The LTP4's policy 5 states that the local transport authority will aim to project the historic and built environment from the harmful effects of transport and strive to make places more people focussed with an emphasis on placemaking to make spaces safe and accessible for all.

Despite this, the assessment of the Implementation Plan schemes raises largely uncertain implications in regard to environmental ISA objectives as far as effects are likely to be realised at the site level in those locations of any new 'large scale' infrastructure. This includes effects related to the historic environment which may possibly be affected at the micro level through new road schemes such as new dual carriageway links, and the provision of new Rapid Transit systems. Effects would be more appropriately identified at the detailed design stage and through adequate and suitable assessments in relation to environmental conditions. Uncertain impacts are therefore raised at the whole Plan level.

7.1.8 Landscape

Short-Medium Term Effects	Long Term Effects
Uncertain	Uncertain

The LTP4's policy 5 states that the local transport authority will aim to project the historic and

built environment from the harmful effects of transport and strive to make places more people focussed with an emphasis on placemaking to make spaces safe and accessible for all. This has implications for historic landscapes, and also the LTP4 ensures that landscape at the local level is considered, such as through the retention of features and more generally through public realm improvements.

Despite this, the assessment of the Implementation Plan schemes raises largely uncertain implications in regard to environmental ISA objectives as far as effects are likely to be realised at the site level in those locations of any new 'large scale' infrastructure. This includes effects related to landscapes which may possibly be affected at specific locations but also cumulatively through new road schemes such as new dual carriageway links, and the provision of new Rapid Transit systems. Effects would be more appropriately identified at the detailed design stage and through adequate and suitable assessments in relation to environmental conditions.

7.1.9 Sustainable transport

Short-Medium Term Effects	Long Term Effects
Positive	Significantly positive

It can be considered that there will be significant positive implications for the majority of the ISA Objectives within the Plan's remit and focus and covering the responsibilities of the local transport authority. The focus of the LTP4 on connectivity ensures improvements in and the integration of Active Travel and sustainable transport. This affords minor positive effects in the short-medium term. In the long term there is a presumption that there will be heightened sustainable transport uptake through behavioural change and the delivery of those sustainable and active travel Implementation Plan schemes associated with strategic growth and Garden Communities that will be delivered later in Local Plan periods. Crucially the LTP4 ensures that sustainable and affordable transport solutions can be integrated into such developments and that infrastructure can match growth.

7.1.10 Journey time reliability

Short-Medium Term Effects	Long Term Effects
Positive	Significantly positive

It can again be considered that there will be significant positive implications for the majority of the ISA Objectives within the Plan's remit and focus and covering the responsibilities of the local transport authority. The focus of the LTP4 on connectivity ensures improvements in and the integration of all transport modes, acknowledging the position that many people in

Essex rely on private vehicle use. This affords minor positive effects in the short-medium term as it can be expected that the Implementation Plan schemes will cause some disruption until constructed and fully accessible (identified as the long term). In the long term there is a presumption that there will be heightened realistic transport options through the delivery of those sustainable and active travel Implementation Plan schemes associated with strategic growth and Garden Communities that will be delivered later in Local Plan periods. Similarly, the Plan's focus on place making allows tenets of sustainable development to be achieved, and also shorter trips for key services. Crucially, and as set out in the assessment of the sustainable transport ISA Objective, the LTP4 ensures that inclusive transport solutions can be integrated into developments and that infrastructure can match growth.

7.1.11 Access to services

Short-Medium Term Effects	Long Term Effects
Positive	Significantly positive

Again, it can be considered that there will be significant positive effects on the majority of the ISA Objectives within the Plan's remit and focus. The focus of the LTP4 on connectivity ensures improvements in and the integration of all transport modes, acknowledging the position that many people in Essex rely on private vehicle use and also that this should not be the only or predominant option in new sustainable development. As per the assessment of the sustainable transport and journey time ISA Objectives, minor positive effects have been identified in the short-medium term. Similarly again, in the long term there is a presumption that there will be heightened realistic transport options through the delivery of those sustainable and active travel Implementation Plan schemes associated with strategic growth and Garden Communities. It should also be reiterated here that the Plan's focus on place making enables sustainable development and shorter trips for services. Crucially, and as set out in the assessment of the sustainable transport ISA Objective, the LTP4 ensures that inclusive transport solutions can be integrated into developments and that infrastructure can match growth.

The inclusive nature of the Plan's policy position, and many of the Implementation Plan schemes, ensures that all residents of Essex can be expected to have realistic transport options. If integrated beyond individual schemes and 'joined up' with partnership working outcomes with other service providers, this can afford a significant cumulative strengthening of connectivity across the county with similarly significant effects to investment and economic growth.

7.1.12 Health and wellbeing

Short-Medium Term Effects	Long Term Effects
Uncertain / positive	Uncertain / positive

As the LTP4 is strategic in nature and primarily focused on policy aspirations, it can be considered to not have any direct, significant or necessarily identifiable impacts on the health and wellbeing of individuals in Essex. The Plan seeks to improve access, connectivity and Active Travel options, which will improve health and wellbeing in the long term, although the detail of such schemes is likely to come forward within other plans and proposals.

Any future transport related proposals that arise in the county have the potential to impact on both health and wellbeing. It is considered that, where any impacts are recognised, priority is satisfactorily given to the preparation of a project level HIA within the LTP4. This will allow the identification and mitigation of impacts related to detailed schemes to be understood prior to planning permission being granted. Nevertheless, the Plan directly addresses issues of connectivity, community, place making and severance as well as being inclusive of various groups and incomes. Overall, uncertain to positive impacts are highlighted at this stage.

7.1.13 Sustainable economic development

Short-Medium Term Effects	Long Term Effects
Positive	Significantly positive

Transport development can be seen to support new jobs and general economic prosperity as well as reducing deprivation in key areas through enhanced access to services and employment opportunities. The LTP4 actively seeks improvements in connectivity, directly in order to address deficiencies where possible, and support new employment growth through multiple Implementation Plan schemes. Policy 12 of the Plan similarly seeks to support a sustainable transport network that assists inclusive economic growth and connectivity with an overall aim of maximising the business potential of Essex. Implementation Plan schemes focused on Great Eastern Mainline (GEML) enhancements, Crossrail 2, the East-West Rail scheme, the Freeport East Access Package, the Stansted Airport Sustainable Access Package, the Thames Freeport Access Package, linking Uttlesford growth with employment in Cambridge via Rapid Transit, and the Southend Airport Access Package can all be expected to significantly promote and enhance access to employment opportunities in Essex, and perhaps also attract inward investment.

More widely, the LTP4 ensures that sustainable and affordable transport solutions can be

integrated into new developments and that infrastructure can match growth. If integrated beyond individual schemes and 'joined up' with partnership working outcomes with other service providers, this can afford a significant cumulative strengthening of connectivity across the county with similarly significant effects to investment and economic growth. Overall, positive effects are realised in the short-medium term to reflect the position that economic growth is linked to specific schemes and growth outside the remit of the LTP4, however significant positive effects are predicted in the long term associated with the delivery of those schemes and wider growth in Essex.

7.2 Recommendations / Mitigation Measures

No recommendations or mitigation measures are made at this point. Although the potential for negative effects is raised in this Report, it is acknowledged that there are inherent differences between various transport modes on the environment and also the need for an inclusive range of options to be included within the Plan.

8. Next Steps

8.1 Consultation

The LTP and this ISA Report will be subject to statutory consultation. There are three statutory consultees that are required to be consulted for all Sustainability Appraisal and Strategic Environmental Assessment documents, and therefore also this ISA. These are: The Environment Agency; Natural England; and Historic England.

In addition to these, consultation will seek to engage the wider community in order to encompass comprehensive public engagement. Essex County Council, as the Highways Authority, are additionally required to invite comments from focussed groups, relevant stakeholders and interested parties.

8.2 Updating the ISA Report

Once consultation has been undertaken on the LTP4, this ISA Report, and the accompanying HRA, the ISA Report will need to be updated to include the requirements of EqIA. As previously set out in this Report, EqIA is an evidence-led process of assessment, and consultation with key groups is crucial to ensuring that equality duties are met.

By updating this ISA Report post-consultation with the requirements of EqIA included, the process can be necessarily evidence-led and not merely notional in its assessment. This satisfies the requirements of EqIA and ensures that both the ISA Report and the LTP4 can include any necessary updates and recommendations prior to adoption.

8.3 Monitoring

The significant sustainability effects of implementing a Local Plan must be monitored in order to identify unforeseen adverse effects and to be able to undertake appropriate remedial action. The Sustainability Framework contained in this Report includes suggested indicators in order to monitor each of the Integrated Sustainability Objectives, however these may not all be collected due to limited resources and difficulty in data availability or collection.

Guidance stipulates that it is not necessary to monitor everything included within the Sustainability Framework, but that monitoring should focus on significant sustainability effects, e.g. those that indicate a likely breach of international, national or local legislation, that may give rise to irreversible damage or where there is uncertainty, and monitoring would enable preventative or mitigation measures to be taken.

Upon adoption Local Plans will be accompanied by an Adoption Statement which will outline those monitoring indicators most appropriate for future monitoring of the Plan in line with Regulation 16 of the Environmental Assessment of Plans and Programmes Regulations 2004.

Appendix 1: Health Impact Assessment

Screening Health Impacts

As set out earlier in this Report, there is no statutory duty in place to undertake a HIA as part of undertaking a Local Plan, however the schemes identified within the Local Transport Plan may have the potential to impact on health, which could be a cause for concern amongst members of the public. HIA can have a strong role in the plan-making process, as well as for individual projects that emanate from the Plan.

This Appendix:

- Screens the Plan area to determine if the Plan is likely to result in health impacts, paying specific mind to any local inequality issues;
- Provides recommendations throughout the decision making process, allowing for responses to be made to any issues that are raised;
- Seeks to maximise positive impacts, while minimising the negative impacts of the Plan.

Health & Wellbeing Baseline Profile

The following baseline is considered relevant to the remit of the LTP4 and the scope of this HIA:

Sustainable Travel and Accessibility

- There is generally poor access to key services by public transport in parts of Essex. There is also high car access in rural areas. As an example, 90% of residents in Uttlesford have access to a car.
- Many towns have far from a complete cycle network, and routes are not always connected and signposted.

Quality of Local Environment / Existing Communities

- According to the Essex Residents' Survey, access to green space is considered important by residents to help make an area a good place to live. Access to health services and the level of crime and antisocial behaviour are also important to local communities and have become more important since 2020.
- Road and pavement repairs are considered the top priority for improvement by Essex residents, followed by the level of traffic congestion and access to health services

- Twelve Essex wards are listed on the 'Left Behind Neighbourhoods Index.' This means having high levels of deprivation and a lack of community and civic assets and infrastructure.

New Development Planning

- Green infrastructure is essential in new developments, including sustainable urban drainage systems. Development should also design for future climate events, incorporating resilience to changing weather conditions and more frequent extreme weather events.
- Healthy Streets, Liveable Neighbourhoods and Walkable Neighbourhoods are planning approaches that can be developed in both new and existing communities.
- The provision of active travel routes and mobility hubs will help tackle the issue of car dependency and enhance last mile travel.

Improving the Local Environment

- There has been an increased frequency of extreme weather events. There requires further investigation of the impacts on the transport network of higher temperatures and more intense rainfall. Significant parts of Essex at long term risk from flooding, from surface water, or from rivers and seas
- New developments are best placed to adapt through the use of green infrastructure and SuDS, however existing communities need to be considered too, and how elements such as shading, cover and protection can be retrospectively included in their layouts.
- Some areas of Essex have inadequate access to green infrastructure (GI). The benefits of GI include health and wellbeing. There are target areas to improve access to GI in Harlow, Epping Forest, Colchester, Chelmsford Castle Point and Basildon.
- EV ownership is greatest in urban areas, which also have the highest density of charging points. There is lower EV ownership and fewer charging points in rural areas.
- Cargo bikes offer an efficient, low-carbon transport solution. They are often faster and cheaper than motor vehicles in urban areas, addressing issues congestion and air quality issues.

Human Health and Deprivation

- Health deprivation – correlates with life expectancy and TRSE Health Risk levels. Tendring is the most health deprived district and Uttlesford the least.

- Distance to health services – the best public transport / walking journey times in the County are in Chelmsford city centre (at less than 20 minutes). The worst is in northern Braintree District (at 100-120 minutes).
- Air Quality – there are potentially illegal levels of NO2 in urban centres and along the SRN. Tendring District has the highest mortality rate for preventable respiratory disease (aged 75+) and the highest levels of hypertension (all ages).
- Noise – regarding preventable cardiovascular disease, the highest mortality rate in the County is Harlow (35%) in the <75 age range.
- Hospital waiting lists – the highest percentage of the local population on a hospital waiting list is 11% in Colchester and Tendring (correlates to health deprivation in both places)
- Vulnerable people are at risk of exposure to high air and noise pollution, as many care homes and schools are located near the road and rail network.
- Essex has high levels of overweight / obese adults and children, with 28% adults obese; 66% of adults being obese or overweight; Tendring, Braintree and Harlow having the highest levels of inactivity; 22% of those aged 4-5 are obese (England average being 20.9%).

Wellbeing

- Crime can potentially deter people from using active travel modes or public transport use: Bicycle thefts more prevalent than vehicle crimes; and hate crime is an increasing issue.
- Fewer people feel safe after dark than during the day – between 2014 and 2022: 87% up to 91% during the day; and 49% up to 55% after dark.
- Anxiety and depression are most prevalent in Basildon, Harlow and Tendring. Simultaneously, the percentage of adults that never walk are highest in Harlow (at 11%), and Tendring (at 8%).
- Approximately 37% of the Essex population feel lonely ‘some of the time’, ‘often’ or ‘always’. This is highest in Basildon (20% often & always) and is potentially caused by transport-related community severance.
- Similarly, higher anxiety levels are present in more rural areas.
- Coastal areas in Essex are struggling to maintain a healthy level of wellbeing for residents with a perceived need for improvement around safety, road collisions and community wellness.

Independence

- In Uttlesford and Braintree there is poor walking access to bus travel, and journeys to a rail station take on average over 45 minutes
- Effects of community severance are greater on deprived communities and those with low mobility in Marks Tey (Colchester). Here there is poor air quality and noise exposure from the A120 and A12 negatively impacting health, and playing fields and sports facilities are severed from residential areas.
- Older people are more at risk of isolation and social exclusion. People aged 70+ tend to be more reliant on reliable, accessible and affordable public transport; are more likely to have difficulty walking to a bus stop; and are more likely to be deterred from using public transport if there are no bus shelters, nearby bus stops, or seating provisions.
- Disabled people uses buses 20% more frequently than non-disabled people. Disabled people in rural areas are less likely to travel by rail due to a lack of staffing in stations and booking assistance services reduces independence by affecting ability to make impromptu journeys.
- Rising bus fares are affecting the accessibility of bus services for low income families, corresponding to a significant barrier to employment and education opportunities.
- The elderly, disabled people, low-income families and rural areas are more affected by transport poverty. In Epping Forest and Castle Point, travel times of >60 minutes are prevalent to many key services including healthcare and employment.
- People who can no longer drive due to health or age will be forced into transport poverty.

Health Objectives elsewhere in the ISA

An important component of the LTP4 is that new infrastructure and schemes will be required to both address existing issues regarding transport in Essex, and also to support and in some instances facilitate essential new housing and employment growth.

This ISA Report factors in the requirements for Sustainability Appraisal (SA) which considers health as an important tenet of sustainability. Health has been identified within the SA element of this ISA Report as a ‘Key Sustainability Issue’ relevant to the Plan and the Plan area.

Table 10: Health related issues as identified within the ISA

General Theme	Focused Theme	Description / Supporting Evidence
Health	Human health and pollution	Potential impacts on health, well-being and quality of life should be taken into account. The potential impact of noise, dust, vibration, lighting and water pollution potentially being generated from transport movements needs to be considered and mitigated.

This led to the formulation of a directly health related ISA Objective, which is included as part of this ISA's sustainability framework. The relevant excerpt from this framework is included in the table below.

Table 11: Health related objectives in the Sustainability Framework of this ISA

SA Objective	Proposed guide questions to meet objective (does the LTP4…)	Potential indicators for monitoring effects
12) To protect and where possible enhance human health and well-being.	Minimise the number and severity of road traffic accidents and maximise safety and security? Have an adverse impact on human health? Improve access to facilities and services including recreational facilities and opportunities? Seek to minimise noise and vibrations from road transport? Encourage large vehicles away from smaller roads and onto more appropriate routes?	Access to recreation facilities and opportunities Open space and public realm improvements that contribute towards recreational opportunities Percentage of residents who are happy with their neighbourhood as a place to live Ambient noise along major roads in Essex dB(A) Complaints relating to noise Light pollution maps

The Screening of the LTP4

In order to determine if the LTP4 requires an HIA a series of Screening themes have been identified. The following table includes the potential impacts surrounding each key health related theme, how the LTP4 addresses these impacts (directly or indirectly), and recommendations proposed that the LTP4 could integrate (if/where relevant).

Table 12: Screening of health impacts associated within transport related activities as set out within the Plan

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
Housing	The delivery of housing needs in Essex is reliant on supporting infrastructure. In Essex, if the housing projections contained in the City, Borough and District Councils' Local Plans are fulfilled it will mean an unprecedented increase in the number of new houses built in the County over the next 15 plus years. Housing growth if well planned can create a number of direct and indirect opportunities for health and wellbeing in the County, including: - Provision of new and an improvement to the existing infrastructure which can have a positive impact on health, such as good opportunities for active travel to support physical	The LTP4 sets out that design and community need to be at the core of development, and that there is a role for the local transport authority to assist in ensuring that housing developers design and build sustainable developments, located in the right place with sustainable transport choices for the long-term. The LTP4 adds that new developments need to include schools, shops and other facilities forming new centres for the neighbourhood, reducing the need for new residents to travel further afield and reducing the reliance on car travel for everyday needs. Successful new communities also need to integrate with existing	There will be overall positive impacts on both health and wellbeing through the support of housing growth within Essex. As a consultee for Local Plans in Essex, the local transport authority can seek to promote and influence the location and future design of housing growth. Similarly, requirements for a Health Impact Assessment and use the Essex Healthy Places Checklist to be submitted as part of planning applications will ensure neutral to positive impacts.	No recommendations are made.

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
	activity which contributes to the reduction of many related health conditions and increased general wellbeing of the population - Access to new green space, leisure and open spaces to support social cohesion, physical activity and mental wellbeing of the residents. - Supply of affordable housing to reduce homelessness and provide homes for those who cannot get onto the housing ladder. - Supporting the local economy and increasing the overall standard of living in the County which in the long term should contribute to the reduction of health inequalities. It should be recognised that there may be some potential	communities with travel providing access for both existing and new residents to a wider range of facilities and employment opportunities shared across the new larger population. Additionally, the LTP4 identifies the role for transport solutions to assist in tackling social exclusion and often in rural areas the need for enough people to make such solutions viable. Future housing and economic growth targeted in the right places can make a positive difference. It should be acknowledged however that impacts are likely to be minimised by the policies of Local Plans and the scrutiny of the statutory and regulatory bodies. Lastly it is important to note		

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
	risks to health and wellbeing as a result of development growth if these are completed to a low standard and not supported by the appropriate infrastructure.	that the LTP4 states that the local transport authority will require developers to produce a Health Impact Assessment and use the Essex Healthy Places Checklist as part of their planning application. This will consider the positive and negative impacts of travel and transport on residents and the community.		
Construction	Health impacts from construction can be divided into two categories: immediate impacts such as accidents; and accumulative and progressive impacts such as stress and pulmonary diseases. Impacts can be felt by the employees and surrounding communities. The different types of health impacts can be classified as:	Section 5: Creating Sustainable Places and Communities of the LTP4 sets out that the local transport authority will: seek to reduce traffic noise where this adversely impacts significant numbers of people or places categorised as 'noise important areas'; lead by example by reducing the	Transport operations which come forward have the potential to generate potential health and wellbeing impacts. These potential negative impacts will be required to be mitigated to an acceptable level through the LTP4s requirement for associated project level	No recommendations are made.

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
	- Physical - includes noise, heat, vibrations, falls, and various forms of dust, aerosols and fine particles - Mental – mental health of workers associated with working environment Any impacts, whether negative or positive will be greater in relation to vulnerable population groups and concentrations of ill health. Therefore, special attention should be paid to these groups when transport related developments come forward. This includes areas of health and economic deprivation, concentration of people at old age. This HIA will not attempt to identify any hotspots in Essex as such analysis is best made at the site level, on a case-by-case basis as	noise impacts of our road maintenance and construction activities; and also consider appropriate ways to reduce vehicle noise. The LTP4 additionally states that the local transport authority will require developers to produce a Health Impact Assessment and use the Essex Healthy Places Checklist as part of their planning application. This will consider the positive and negative impacts of travel and transport on residents and the community.	HIAs. The impact of the LTP4 can be considered as neutral.	

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
	schemes are considered.			
Development Design	The location and design of development sites can have negative effects (direct or perceived) on surrounding communities through: - affecting visual qualities, reducing the visual attractiveness and sense of place which may affect the general wellbeing of neighbouring communities - affecting opportunities for physical activity through the removal of public open spaces and existing walking/cycling routes used by the residents for exercise, dog walking and leisure. This could have a number of direct and indirect health impacts including increased prevalence of obesity and related conditions,	The LTP4 identifies that for new developments, there is a need to rethink how design can ensure 'place' and 'community' are core principles. To this end, the LTP4 acknowledges that there is a further need to ensure that developers design and build sustainable developments in the right place and with sustainable transport choices for the long-term. This includes electric vehicle infrastructure, the inclusion of SuDS, and public transport infrastructure. A recurrent theme throughout the LTP4 is one of inclusivity with design at the forefront of such aspirations. The Plan seeks	There are considered to be no negative impacts, and only positive implications associated with the LTP4's design considerations for new development.	No recommendations are made.

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
	respiratory conditions, cancers and mental health. - affecting the natural environment which will have indirect impacts on the health and wellbeing of nearby sensitive receptors. - the anticipation of likely effects that the development can have on the local community and place creating anxiety amongst the residents, in particular those more vulnerable to change. New or improved transport infrastructure offers the potential for health and wellbeing improvements in Essex. Opportunities include: - Creation of new and enhancements to the existing walking and cycling routes and linking these routes with the	to remove barriers to travel for those with disabilities by ensuring that transport infrastructure is designed, built, operated and maintained so that it is accessible, easy and safe to use by everyone all the time. Similarly the LTP4 requires 'safety audits' to be undertaken of all proposed designs of new transport schemes or proposals to materially alter the existing public carriageway or footway. The LTP4 additionally states that the local transport authority will require developers to produce a Health Impact Assessment and use the Essex Healthy Places Checklist as part of their planning application. This will consider the positive and negative		

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
	wider routes outside of the site – creating opportunities for physical activity - Creation of new green spaces, leisure trails and parks – creating opportunities for social interaction, physical activity and enjoyment of nature and calm environment for people to rest and enjoy - Landscape and habitat enhancements – creation of an attractive and biodiversity rich environment to support mental health and wellbeing - Flood alleviation and planting of trees to reduce the impact of climate change on health and wellbeing of the local residents - Air quality improvements	impacts of travel and transport on residents and the community.		
Active Travel and	The active travel related health and wellbeing considerations	The LTP4 makes commitments that the local	There are considered to be no negative impacts,	No recommendations

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
Connectivity	generated by transport related developments could include: - Potential temporary disruptions of existing walking and cycling networks which can affect levels of physical activity amongst the local residents. - Potential temporary disruptions of existing road networks which can affect accessibility and connectivity. - Creating opportunities for active travel and public transport access.	transport authority will work collaboratively with third parties including Transport East, National Highways, neighbouring transport authorities and utility companies to co-ordinate maintenance works across networks and minimise disruption to the travelling public. Similarly the Plan includes planned activities to work with organisations such as bus operators and active travel organisations and funders to make the case for new investment, as well as ensuring that Travel Plans (as submitted as part of proposals for major generators of travel such as existing workplaces, schools and proposed developments) address	and only positive implications associated with the LTP4's approach for active travel and connectivity.	are made.

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
		active travel choices.		
Public open space	Some transport infrastructure can see the loss of open/green spaces. Alternatively, new functional spaces can be created through public realm improvements and wider connectivity associated with active travel infrastructure. Open spaces can have a positive impact on the mental health of the community.	The LTP4 seeks enhancements to access to open space, and through its integration with active travel infrastructure. In the Plan's Supporting people: health, wellbeing and independence section, key outcomes related to open space include its safe access and feeling safe to users. Regarding physical health, the LTP4 includes that, 'our transport network has a key role to play in providing residents with a low cost way to keep active and maintain good health'. Linked 'planned activities' related to this include: - Develop and deliver long-term plans to improve our cycling and walking	There will be no negative impacts, and only positive implications, on both health and wellbeing through the creation of new, or improvements to the access of existing areas and networks of public open space.	No recommendations are made.

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
		networks; - Implement our Green Infrastructure Strategy to deliver better quality and more accessible green spaces and links for everyone; - Work with landowners and other partners to ensure that public rights of way are well maintained and easy to use; and - Improve access and raise awareness of the green spaces, facilities and activities available to the public. The LTP4 identifies that for new developments, there is a need to rethink how design can ensure 'place' and 'community' are core principles. To this end, the		

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
		LTP4 acknowledges that there is a further need to ensure that developers design and build sustainable developments in the right place and with sustainable transport choices for the long-term. This includes electric vehicle infrastructure, the inclusion of SuDS, and public transport infrastructure. A recurrent theme throughout the LTP4 is one of inclusivity with design at the forefront of such aspirations. The Plan seeks to remove barriers to travel for those with disabilities by ensuring that transport infrastructure is designed, built, operated and maintained so that it is accessible, easy and safe to use by everyone all the time. Similarly the LTP4		

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
		requires 'safety audits' to be undertaken of all proposed designs of new transport schemes or proposals to materially alter the existing public carriageway or footway. The LTP4 additionally states that the local transport authority will require developers to produce a Health Impact Assessment and use the Essex Healthy Places Checklist as part of their planning application. This will consider the positive and negative impacts of the specific proposal in regard to any loss of open space and net gains.		
Employment and Economy	Transport development supports new jobs and general economic prosperity. This may	The LTP4 actively seeks improvements in connectivity, directly in order	There will be no negative impacts, and only positive	No recommendations are made.

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
	help to reduce deprivation in key areas, as well as health inequalities. Transport development / infrastructure construction has the potential for negative impacts on surrounding business such as through noise or dust nuisance.	to address deficiencies where possible, and support new employment growth. Section 5: Creating Sustainable Places and Communities of the LTP4 sets out that the local transport authority will: seek to reduce traffic noise where this adversely impacts significant numbers of people or places categorised as 'noise important areas'; lead by example by reducing the noise impacts of our road maintenance and construction activities; and also consider appropriate ways to reduce vehicle noise. The LTP4 additionally states that the local transport authority will require developers to produce a	implications, on both supporting new employment growth, addressing deficiencies in access and connectivity, and ensuring the mitigation of any transport related impacts.	

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
		Health Impact Assessment and use the Essex Healthy Places Checklist as part of their planning application. This will consider the positive and negative impacts of travel and transport on neighbouring uses.		
Equality and social cohesion	Social interaction has an impact on people's overall health and well-being. Increased or enhanced connectivity, both existing and as part of new development, can ensure the promotion of community cohesion and the provision of benefits accessible to the whole community.	A recurrent theme throughout the LTP4 is one of inclusivity. The Plan seeks to remove barriers to travel for those with disabilities by ensuring that transport infrastructure is designed, built, operated and maintained so that it is accessible, easy and safe to use by everyone all the time. Similarly the LTP4 requires 'safety audits' to be undertaken of all proposed designs of new transport schemes or proposals to	There will be no negative impacts, and only positive implications, on equality and social cohesion through the Plan's approach to ensuring inclusive access for all and affordability of transport solutions.	No recommendations are made.

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
		materially alter the existing public carriageway or footway. The LTP4 additionally states that the local transport authority will require developers to produce a Health Impact Assessment and use the Essex Healthy Places Checklist as part of their planning application. This will consider the positive and negative impacts of the specific proposal in regard to inclusivity and the needs of various demographics. The Plan is also subject to an Equality Impact Assessment (part of this Report once public consultation has been undertaken).		

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
Climate change	Any new development has the potential to increase the risks associated with climate change related events such as flooding. There are, however, opportunities to mitigate against and adapt to, some of these effects. Climate change related to extreme weather events could affect the health and well-being of communities and the wider population. Transport connectivity, and solutions supporting or enabling growth through new road infrastructure, can lead to an increase in vehicle emissions and associated health impacts. The implementation and promotion of accessible sustainable transport options can be considered significant methods of minimising emissions in the first instance. Additionally, Sustainable	The LTP4's Transport Strategy includes themes and outcomes specifically regarding decarbonising transport in the face of climate change and protecting and improving the environment for the long-term. Further, the Plan seeks to ensure a transport network that is flexible, reliable, operates safely, and responds to a changing climate including extreme weather. Amongst more specific examples of this approach within the Plan are: - Appropriately designed, built and maintained Sustainable Drainage Systems (SuDS) as a key part of new development and new transport	There can be considered broadly neutral impacts through the provision of mitigation that addresses certain facets of climate change.	No recommendations are made.

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
	Drainage Systems, water quality mitigation, biodiversity enhancements, and the protection of the best and most versatile agricultural land can all be considered relevant mitigation methods for transport related development.	infrastructure; - Planting more street trees and replacing street trees where needed; - Playing an active role in flood defence, coastal protection, and conservation to reduce the risks and impacts of climate change on our coastal communities and transport network; - Managing the introduction of appropriate alternative fuel infrastructure to encourage cleaner zero-emission travel; and - Supporting the pilot and where appropriate the adoption of new technology which enables more sustainable travel.		
Environmental	Air quality – New developments	The LTP4 specifically	There can be	No recommendations

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
Hazards	can have a cumulative impact on localised air quality. Mitigation measures can construction introduced during the working phase of a site to help limit these effects. Noise – development sites and new transport infrastructure may create additional noise. Any new schemes should be sensitive to the prevailing acoustic environment and seek to mitigate their own effects. Flooding – All development and infrastructure schemes must mitigate against detrimentally affecting flooding both on site and elsewhere. This ensures ensure the development will not have a detrimental impact on the health of local communities through flooding. Land stability – Developments and infrastructure schemes	includes various activities that are planned to address possible environmental hazards. These include: - Deploying approaches such as Sustainable Drainage and Natural Flood Management to promote greater flood resilience on the highway network; - Implementing ECC's Essex Air Quality Strategy to reduce exposure to poor quality air; - Developing effective and deliverable Air Quality Action Plans with partners; - Implementing measures to reduce traffic noise where this impacts a significant number of people or noise important areas;	considered broadly neutral impacts through the provision of mitigation that addresses various environmental hazards.	are made.

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
	must ensure they will have no detrimental impact on land stability.	- Reducing the noise impacts of our road maintenance and construction activities; - Supporting the delivery of our Local Nature Recovery Strategy by thinking about biodiversity from the earliest stages of transport projects and new developments; and - Implementing ECC's Green Infrastructure Strategy to deliver healthy streets and more accessible green spaces and links for everyone. Further in regard to flooding, a planned activity of the LTP4 is to play an active role in flood defence, coastal protection, and conservation to reduce the risks and impacts of climate change on our coastal		

Theme	Potential impact	How does the LTP4 address this (within its remit)?	Impact on health & wellbeing	HIA Recommendations
		communities and transport network.		

Summary of Impacts

In order to determine if the Plan requires an HIA a series of Screening Questions have been utilised to assess if a comprehensive HIA of the entire plan is needed. The Department of Health[2] provide a set of questions to help decision makers understand if their proposal will require a full HIA through a screening exercise, which also serves as a summary to the themes assessed in the table above.

Screening Question	If there will be no health impact, provide a brief explanation for your response	If there will be health impact(s) provide a brief explanation
Will the proposal / Plan have a direct impact on health, mental health and wellbeing?	It is considered that the Plan itself will not give rise to any such effects. The implications of any specific proposals within the LTP4's Implementation Plans, or its planned activities, will be explored within the 'project-level' HIAs of qualifying proposals. Such impacts are therefore currently unknown and would not be understood until the planning application stage.	There is the potential for impacts to arise as a result of unmitigated development and the Plan seeks to ensure positive outcomes on health and wellbeing. Project level HIAs are further specified as required to be undertaken to prevent any identified negative impacts and promote positive impacts on the local and wider community.
Will policy / Plan have an impact on social, economic and environmental living conditions that would indirectly affect health?	It is considered that the Plan itself will not give rise to any such effects. The implications of any specific proposals within the LTP4's Implementation Plans, or its planned activities, will be explored within the 'project-level' HIAs of qualifying proposals. Such impacts are therefore currently unknown and would not be understood until the	There is the potential for impacts to arise as a result of unmitigated development and the Plan seeks to ensure positive outcomes on health and wellbeing. Project level HIAs are further specified as required to be undertaken to prevent any identified negative impacts and promote positive impacts on the local and

[2] Health Impact Assessment of Government Policy, p.12, Department of Health, 2010

Screening Question	If there will be no health impact, provide a brief explanation for your response	If there will be health impact(s) provide a brief explanation
	planning application stage.	wider community.
Will the proposal / Plan affect an individual's ability to improve their own health and wellbeing?	N/A	The LTP4 seeks enhancements to the county's active travel infrastructure, including its safety. This can be expected to improve the options that new and existing communities will have regarding transport, including walking and cycling.
Will there be a change in demand for or access to health and social care services?	The LTP4, in supporting and enabling new sustainable development in the county, can be expected to offer enhancements in connectivity and therefore access to health and social services. The provision of such services in the first instance is beyond the remit of the Plan.	N/A
Will the proposal / Plan have an impact on global health?	It is not considered that any single or cumulative proposals or approaches within the LTP4 would have an impact on the global scale. This is in response to the Plan area, reflecting the county.	N/A

HIA Conclusions

As the LTP4 is strategic in nature and primarily focused on policy aspirations, it can be considered to not have any direct, significant or necessarily identifiable impacts on the health and wellbeing of individuals in Essex. The Plan seeks to improve access, connectivity and Active Travel options, which will improve health and wellbeing in the long term, although the detail of such schemes is likely to come forward within other plans and proposals.

Any future transport related proposals that arise in the county have the potential to impact on both health and wellbeing. It is considered that, where any impacts are recognised, priority is satisfactorily given to the preparation of a project level HIA within the LTP4. This will allow the identification and mitigation of impacts related to detailed schemes to be understood prior to planning permission being granted. There are therefore no recommendations to make within this strategic HIA as a result.

Appendix 2: Equalities Impact Assessment

Introduction

An Equality Impact Assessment (EqIA) is an evidence-based approach designed to help ensure that policies, practices, events and decision-making processes are fair and do not present barriers to participation or disadvantage any protected groups from participation. This covers both strategic and operational activities.

The term 'policy,' as used throughout this document, covers the range of functions, activities and decisions which are set out within the LTP4. The EqIA helps to ensure that:

- The local transport authority understand the potential effects of the Plan by assessing the impacts on different groups both external and internal;
- Any adverse impacts are identified, and actions identified to remove or mitigate them; and
- Decisions are transparent and based on evidence with clear reasoning.

Ultimately, this EqIA seeks to ensure that the LTP4 is non-discriminatory. For the purposes of this ISA Report, discrimination is defined as someone being treated less favourably or put at a disadvantage because of their protected characteristic. The different groups covered by the Equality Act are referred to as protected characteristics: disability, gender reassignment, marriage or civil partnership status, pregnancy and maternity, race, religion or belief, sexual orientation, sex (gender), and age.

Discrimination is usually unintended and can often remain undetected until there is a complaint. Improving or promoting equality is therefore crucial to remove barriers and improve participation for people or groups with a protected characteristic.

Building Evidence

Building the evidence is important to be able to make accurate judgements and identify any effects. At present and throughout the development of the LTP4 to date, there is little evidence of the potential effects on protected characteristic groups. Consultation will strengthen value judgements by building a consensus that can avoid obvious prejudices or assumptions.

Consultation

Consultation will add evidence to this assessment and is key to demonstrating that the local transport authority are meeting equality duties, however consultation also needs to be proportionate and relevant. Nevertheless, under-consultation on the LTP4 has the potential to create barriers to participation. The LTP4 and this ISA Report are both available for public consultation.

Provisional Assessment

At this initial stage, not all the evidence that is needed is available, so a provisional assessment has been included. Post-consultation on the LTP4, a full impact assessment will be prepared.

EqIAs are about making comparisons between groups of employees, service users or stakeholders to identify differences in their needs and/or requirements. If the difference is disproportionate, then the policy may have a detrimental impact on some and not others.

In terms of identifying potential effects at this provisional stage, broad options are available. These are:

- No barriers or impact identified, therefore the Plan as drafted can proceed;
- The available evidence suggests an impact towards one or more groups;
- Elements of the Plan need changing to eliminate the impact; or
- Barriers and impact identified, however having considered all available options, there appears to be no proportionate way to eliminate the impact.

The table below show the provisional assessment at this stage.

Table 13: EqIA – provisional assessment

Protected Characteristic Group	Is there the potential for an impact?	Example of evidence	Action to address negative impact
Disability	Yes	In rural and deprived areas access to services is poor (as well as access to public transport itself); and there is a deficit of realistic access opportunities for people	None specifically required, subject to consultation. A recurrent theme throughout the LTP4 is one of inclusivity with design at the forefront of

Protected Characteristic Group	Is there the potential for an impact?	Example of evidence	Action to address negative impact
		with disabilities. Buses are used by disabled people 20% more frequently than non-disabled people. Disabled people in rural areas are less likely to travel by rail due to a lack of staffing in stations and booking assistance services reduces independence by affecting ability to make impromptu journeys. The elderly, disabled people, low-income families and rural areas are more affected by transport poverty. In Epping Forest and Castle Point, travel times of >60 minutes are prevalent to many key services including healthcare and employment.	such aspirations. The Plan seeks to remove barriers to travel for those with disabilities by ensuring that transport infrastructure is designed, built, operated and maintained so that it is accessible, easy and safe to use by everyone all the time. Similarly the LTP4 requires 'safety audits' to be undertaken of all proposed designs of new transport schemes or proposals to materially alter the existing public carriageway or footway. The LTP4 additionally states that the local transport authority will require developers to produce a Health Impact Assessment and use the Essex Healthy Places Checklist as part of their planning application. This will consider the positive and negative impacts of travel and transport on residents and the community. The Plan's Supporting People section looks to maximise inclusive access in an evidence-led manner, with a focus on addressing deficiencies. Relevant planned activities include

Protected Characteristic Group	Is there the potential for an impact?	Example of evidence	Action to address negative impact
			implementing Bus Service Improvement Plans; and working with the bus and rail industries to secure further improvements to the accessibility of public transport.
Gender reassignment	No known negative impact	N/A	N/A
Marriage or civil partnership	No known negative impact	N/A	N/A
Pregnancy and maternity / paternity	No known negative impact	N/A	N/A
Race	No known negative impact	N/A	N/A
Religion or belief	No known negative impact	N/A	N/A
Sexual orientation	No known negative impact	N/A	N/A
Sex (gender)	No known negative impact	N/A	N/A

Protected Characteristic Group	Is there the potential for an impact?	Example of evidence	Action to address negative impact
Age	No known negative impact	In rural and deprived areas access to services is poor (as well as access to public transport itself); and there is a deficit of realistic access opportunities for older people and also the young. The elderly and those in rural areas are more affected by transport poverty. In Epping Forest and Castle Point, travel times of >60 minutes are prevalent to many key services including healthcare and employment.	None specifically required, subject to consultation. The planned activities within Plan's Supporting People section are designed to enable options that are both affordable to all and inclusive in regard to age covering the wide spectrum of transportation methods available in the county. Similarly, and crucially to notions of sustainability, the section also sets out how the authority will support initiatives to ensure that the need to travel is reduced in the first instance, such as through faster broadband, and digital innovation to reduce vehicle trips.
Other (such as income)	Yes	The elderly and those in rural areas are more affected by transport poverty. In Epping Forest and Castle Point, travel times of >60 minutes are prevalent to many key services including healthcare and employment.	None specifically required, subject to consultation. The planned activities within Plan's Supporting People section are designed to enable options that are both affordable to all and inclusive in regard to income covering the wide spectrum of transportation methods available in the

Protected Characteristic Group	Is there the potential for an impact?	Example of evidence	Action to address negative impact
			county. Similarly, and crucially to notions of sustainability, the section also sets out how the authority will support initiatives to ensure that the need to travel is reduced in the first instance, such as through faster broadband, and digital innovation to reduce vehicle trips.

Evaluation

Question	Explanation / Justification
Is it possible the LTP4 could discriminate or unfairly disadvantage people?	There is no evidence to show that the LTP4 could discriminate or unfairly disadvantage people.

Final Decision

Final Decision	Relevance	Explanation / Justification required
No barriers or impact identified, therefore the Plan as drafted can proceed	X	N/A
The available evidence suggests an impact towards one or more groups	✓	The Plan's evidence has led to a thread of inclusivity throughout, from the strategic level to the individual schemes of targeted

Final Decision	Relevance	Explanation / Justification required
		Implementation Plans. The LTP4 is considered at this stage, to ensure that there are benefits to the identified groups (disability, age, and income).
Elements of the Plan need changing to eliminate the impact	X	N/A
Barriers and impact identified, however having considered all available options, there appears to be no proportionate way to eliminate the impact.	X	N/A

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Essex County Council

A Better Connected Essex:
Local Transport Plan 4 (LTP4)

Integrated Sustainability Appraisal (ISA): Interim Report - Annexes

July 2025

Essex County Council

About us

Place Services is a leading public sector provider of integrated environmental assessment, planning, design and management services. Our combination of specialist skills and experience means that we are uniquely qualified to help public organisations meet the requirements of the planning process, create practical design solutions and deliver environmental stewardship.

Place Services has a proven track record of delivering sustainable, creative and effective solutions for the built environment. Our in-house expertise comprises a multidisciplinary team which includes planners, urban designers, landscape architects, flood specialists and public art consultants. Our approach is client led; we work alongside our clients to deliver services, projects and planning objectives in a collaborative and cost effective way.

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Glossary

Term (abbreviation)	Definition
Appropriate Assessment (AA)	The process and documentation associated with the statutory requirement under the EU Appropriate Assessment Habitats and Species Directive.
Best and Most Versatile Agricultural Land (BMV)	Land identified by the Department for Environment, Food and Rural Affairs (Defra) as falling within classification grades 1, 2 or 3a, based on the physical characteristics of the land and the limits these impose upon its agricultural uses.
Blue Infrastructure	Blue landscape elements are linked to water. Examples include pools, ponds and pond systems, artificial buffer basins, Sustainable Drainage Systems and water courses.
Development Plan	A document setting out the local planning authority's policies and proposals for the development and use of land and buildings in the authority's area. This includes adopted Local Plans, neighbourhood plans and the London Plan, and is defined in section 38 of the Planning and Compulsory Purchase Act 2004. (Regional strategies remain part of the development plan until they are abolished by Order using powers taken in the Localism Act.
Environment Agency (EA)	A body that aims to prevent or minimise the effects of pollution on the environment and issues permits to monitor and control activities that handle or produce waste. It also provides up-to-date information on matters such as water issues, including flood protection advice.
Historic England (HE)	Advisors with responsibility for all aspects of protecting and promoting the historic environment. Historic England is responsible for advising the government on the listing of historic assets.
Environmental Impact Assessment (EIA) and Environmental Statement (ES)	Applicants for certain types of development, usually more significant schemes, are required to submit an environmental statement accompanying a planning application. This evaluates the likely environmental impacts of the development, together with an assessment of how the severity of the impacts could be mitigated.

Term (abbreviation)	Definition
Flood Risk Assessment (FRA) / Strategic Flood Risk Assessment (SFRA)	An assessment of the flooding risk in a particular area so that development needs and mitigation measures can be carefully considered.
Green Infrastructure (GI)	Green infrastructure includes parks, open spaces, playing fields, woodlands and also street trees, allotments, private gardens, green roofs and walls, sustainable drainage systems (SuDS) and soils. It can include rivers, streams, canals and other water bodies, sometimes called 'blue infrastructure'.
Groundwater	An important part of the natural water cycle present underground, within strata known as aquifers.
Habitats Regulation Assessment (HRA)	The assessment of the impacts of implementing a plan or policy on a Habitats site. It considers the impacts of a land use plan or project against the conservation objectives of the site and ascertains whether any impacts would adversely affect the integrity of them.
Habitats Site	As per the NPPF, any site which would be included within the definition at regulation 8 of the Conservation of Habitats and Species Regulations 2017 for the purpose of those regulations, including candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation, Special Protection Areas and any relevant Marine Sites.
Local Plan	A Development Plan Document prepared by district and other local planning authorities, including minerals and waste planning authorities, to guide development in their administrative area.
Local Planning Authority (LPA)	The local authority or council that is empowered by law to exercise planning functions. Often the local borough/ district/ city council. County councils are the authority for waste and minerals matters.
National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG)	Sets out the Government's planning policies for England and how these are expected to be applied. It provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

Term (abbreviation)	Definition
Natural Capital	Natural capital is another term for the stock of renewable and non-renewable resources (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people.
Natural England (NE)	Body formed by bringing together English Nature, the landscape, access and recreation elements of the Countryside Agency and the environmental land management functions of the Rural Development Service.
Special Area Of Conservation (SAC)	A site designated under the European Community Habitats Directive, to protect internationally important natural habitats and species.
Statutory	Required by law (statute), usually through an Act of Parliament.
Strategic Environmental Assessment (SEA) & Sustainability Appraisal (SA)	SEAs integrate environmental considerations into the preparation and adoption of plans and programmes. They are required by the European Directive 2000/42/EC “on the assessment of the effects of certain plans and programmes on the environment” (the SEA Strategic Environmental Assessment Directive). Government guidance considers that it is possible to satisfy the requirements for Sustainability Appraisal (SA) and SEA through a single approach provided that the requirements of the SEA Directive are met. The environmental, economic and social effects of the plan are presented in the form of an iterative Environmental Report.
Traffic Assessment (TA)	The Local Validation Checklist states that a Transport Assessment (TA) is to be required where there is likely to be a significant amount of traffic generated. This is defined as generating in excess of 50pcu (passenger car units (PCU’s)) in the peak hour. PCU’s are a Traffic Assessment calculation of all types of vehicles as car equivalents: an HGV is 2 car units. A TA forms part of an Environmental Statement submitted with most applications requiring Environmental Impact Assessment (EIA). However smaller developments not requiring an EIA do not submit a TA.
Traffic Statement (TS)	A short, straightforward document, dealing with impacts on the transport network accompanying planning applications without providing detailed capacity assessments. A TS is required by the new validation checklists (June 2008) for all development that fall beneath the threshold for a TA but still have some form of material impact on the highway.

1. Introduction

1.1 Background

On behalf of Essex County Council (ECC), Place Services has been commissioned to undertake an independent Integrated Sustainability Appraisal (ISA) for the Essex Local Transport Plan (LTP). The ISA incorporates the requirements and subsequent stages relevant to Sustainability Appraisal (SA), Strategic Environmental Assessment (SEA), Health Impact Assessment (HIA) and Equalities Impact Assessment (EqIA). A Habitats Regulations Assessment (HRA) will be undertaken in conjunction with this ISA but presented separately,

1.2 Scoping

The main Interim Report includes elements of the scoping stage, satisfying the legislative requirement for the Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA). This Annex includes the detailed context and baseline relevant to the remit of the LTP. Annex A sets out the baseline information profile for Greater Essex and where necessary and relevant, beyond. Annex B outlines the contextual review for the emerging LTP and ISA, outlining a summary of the key objectives of plans and programmes relevant to both the Plan and sustainability themes.

2. Annex A - Baseline Information Profile

The baseline information identifies current sustainability issues and problems in the Plan area to be addressed and provides a summary of those themes which provide the basis for predicting and monitoring the effects of implementing the document. To ensure the data collected within this annex was relevant and captured a good range of sustainability issues, it was categorised under 13 thematic topics. They cover all the topics referred to in Annex 1(f) of the SEA Directive and follow the order of:

- Transport & connectivity
- Economy & employment
- Housing
- Health & wellbeing
- The historic environment
- Biodiversity & nature conservation
- Landscapes
- Water
- Climate & energy
- Air
- Noise
- Minerals
- Waste
- Nationally Significant Infrastructure Projects (NSIPs)

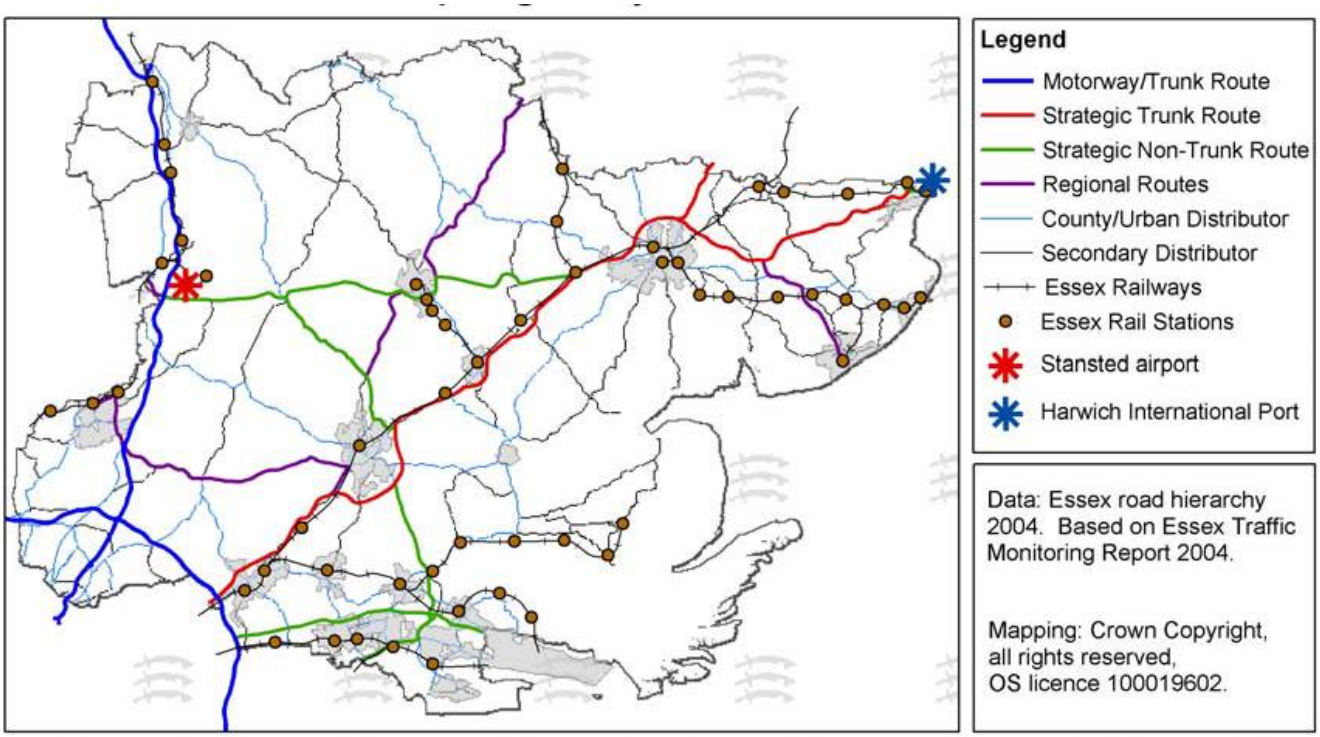
The following sub-sections address and include baseline information in regard to each of the above themes in kind. Please note that due to the large size of the Plan area, certain baseline information is presented at a high level only.

2.1 Transport & Connectivity

2.1.1 Transport Infrastructure

Essex has good transport connections by road, rail, air and sea. The nationally important M11, M25, A12 and A120 run through the county, and major local roads including the A13, A127, A130 and A414 provide good coverage. Three main rail lines radiate from London, supplemented by a number of branch lines, serving 57 railway stations, and the London Underground extends into the county. As a result of its proximity to London, there is a large commuter population. The county also contains two major 'International Gateways': the UK's third busiest airport at Stansted (which handles around 20 million passengers each year); and Harwich International sea port which provides nationally important connections to Holland and Denmark[1].

Figure 1: Travel networks and Transport Gateways in Essex



Source: Essex Trends

[1] Essex Transport Strategy 2011

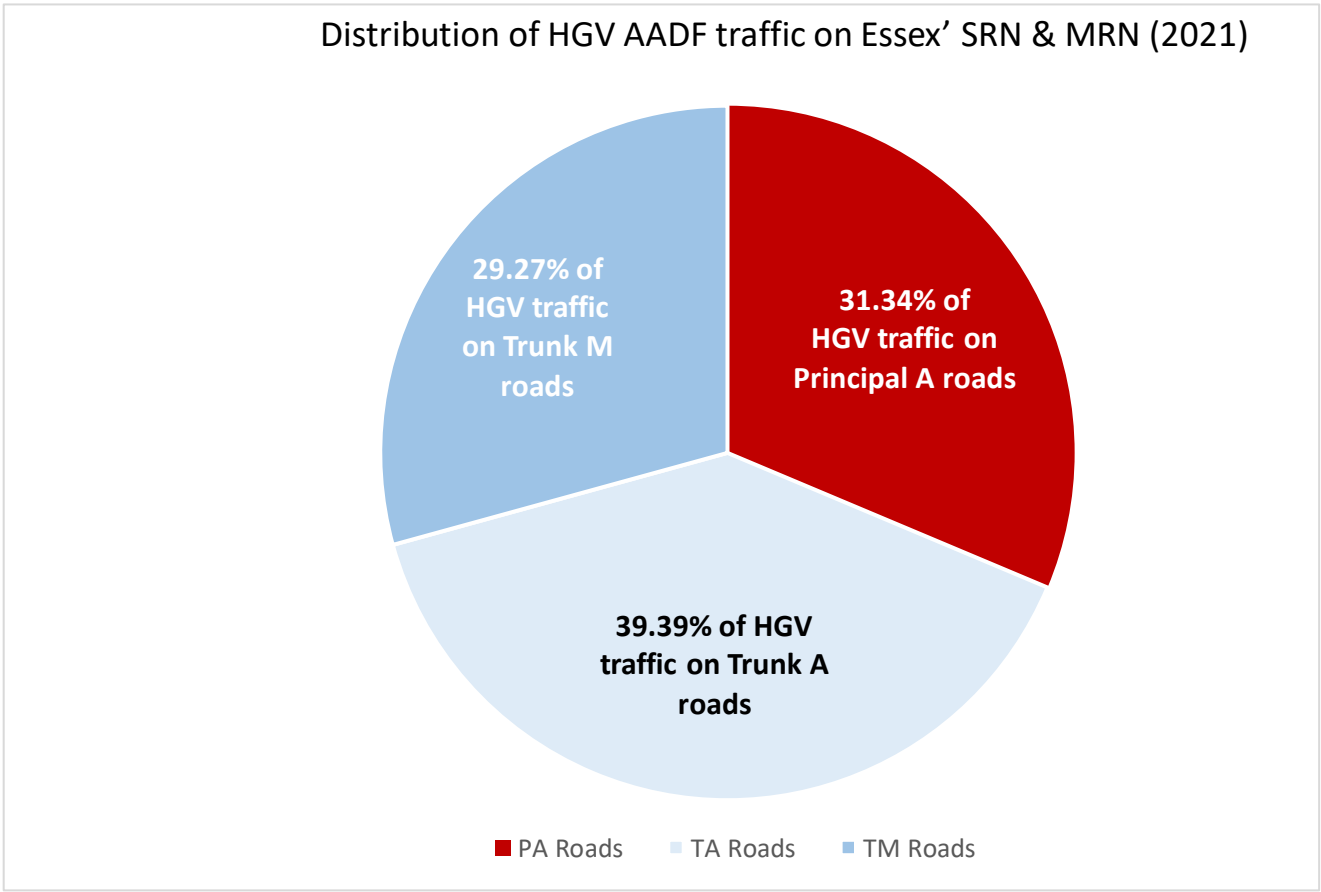
2.1.2 Movement of Goods

Regarding the movement to goods / freight, in 2021:

- 3.93% of all motor traffic travelling on Principal A roads in Essex, Southend and Thurrock were HGVs
- 11.58% of all motor traffic travelling on Trunk A roads in Essex, Southend and Thurrock were HGVs
- 15.95% of all motor traffic travelling on Trunk M Roads (M11, M25) in Essex, Southend and Thurrock were HGVs.

The proportion of HGV traffic travelling in Trunk A-Roads and Principal A-Roads is higher than the proportion travelling on Trunk M-Roads. The graphic below shows this distribution.

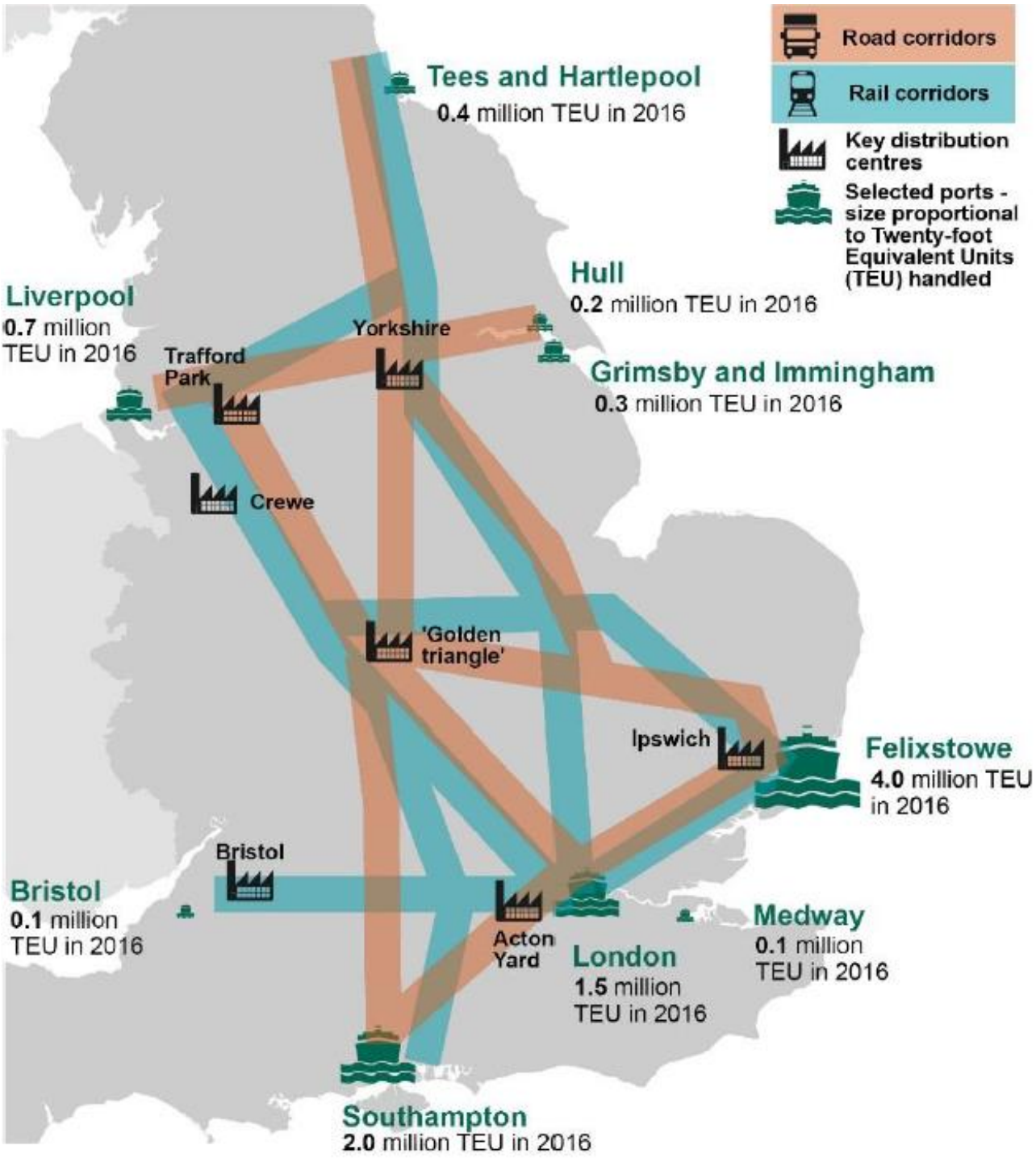
Figure 2: Distribution of HGV traffic on Essex's roads (2021)



Source: DfT, 2000-2023

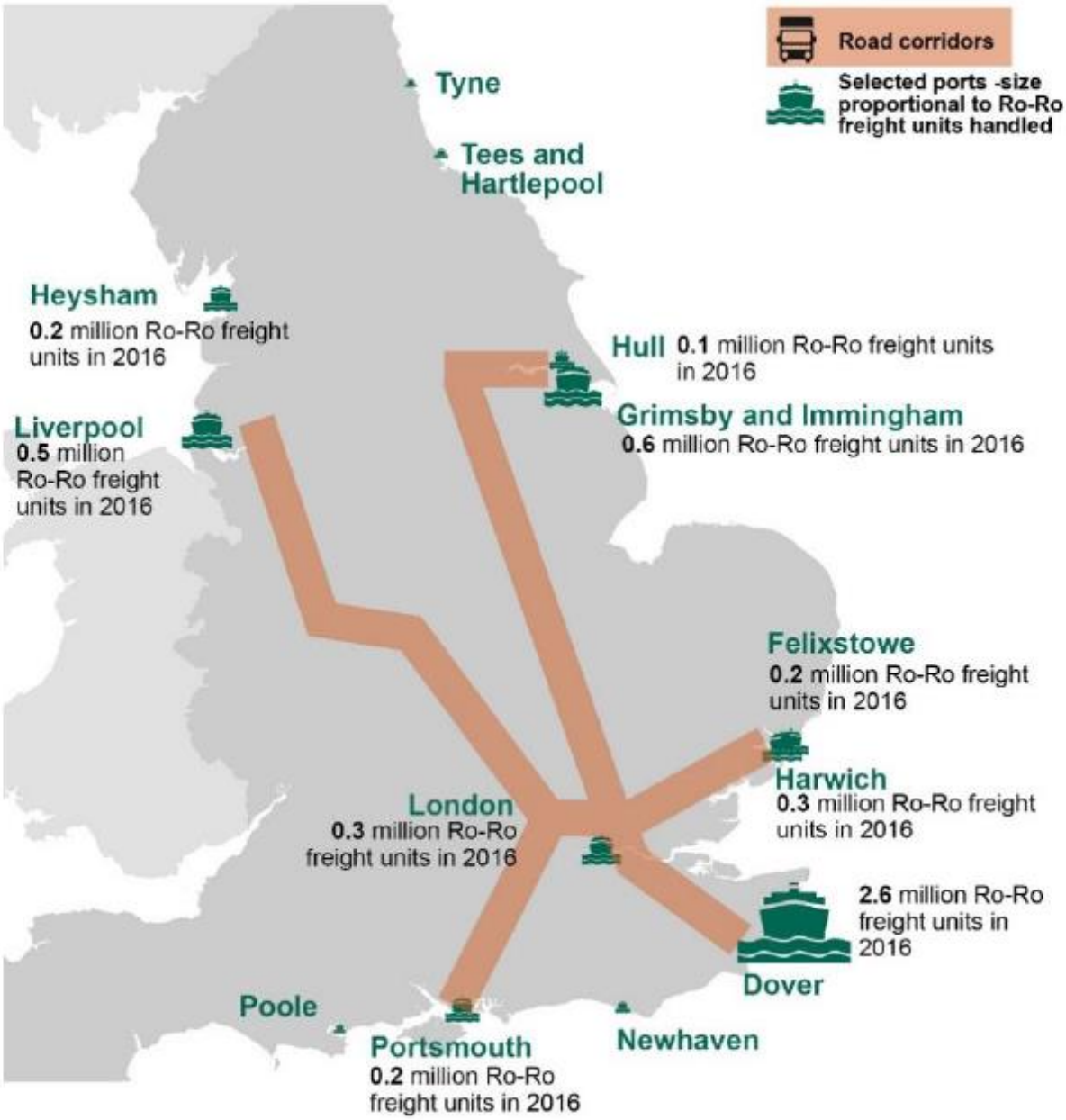
2.1.2.1 Key Freight Routes

Figure 3: Key Freight Routes (lift on lift off freight)



Source: : Transport East Evidence Base. 2016 data

Figure 4: Key Freight Routes (roll on roll off freight)



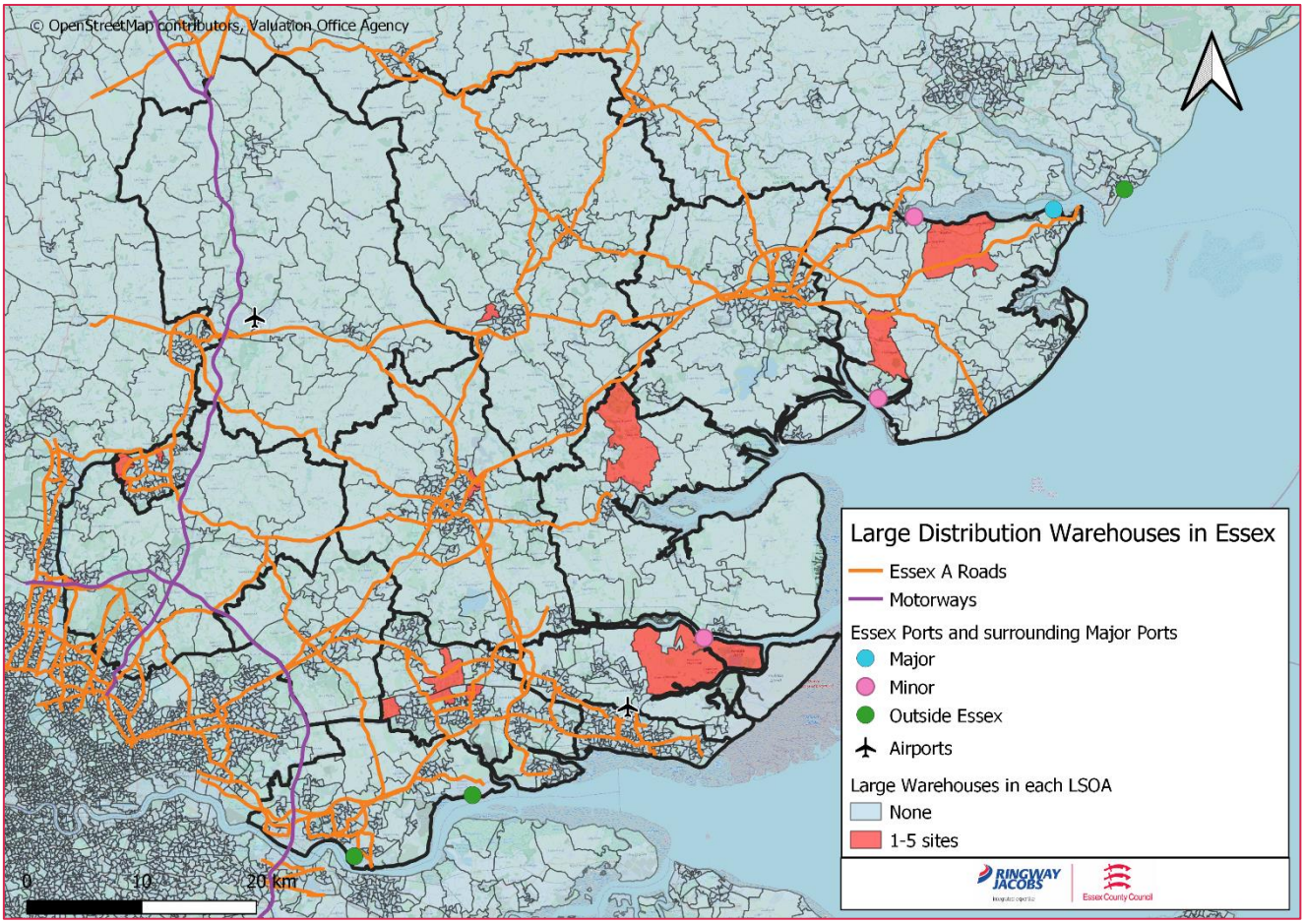
Source: : Transport East Evidence Base. 2016 data

As can be seen, nationally, Essex is important for the movement of freight to Harwich and also Felixstowe.

The graphic below shows the location of large distribution warehouses in Essex. Large distribution warehouses are those that are over 8,000m2 in size. Large warehouses can be found near Essex' ports including Harwich, Mistley, Brightlingsea and Wallasea/Baltic Distribution.

Large warehouse sites can also be found in urban areas such as Harlow, Basildon, Braintree and Chelmsford.

Figure 5: Large distribution warehouses in Essex



Source: Valuation Office Agency

2.1.2.2 Rail Freight

Around 419 loaded trains per working week operate to, from and within the Transport East area, accounting for 200,000 tonnes of freight lifted, the equivalent of 12,000 articulated HGV loads.

These rail services represent a reduction of 3,000 tonnes per week, compared to the same volume of freight moved in articulated HGVs. Or at least 150,000 tonnes per annum if rail volumes were constant across the year.

The graphic below shows these movements.

Figure 6: Transport East Strategic Corridors (rail freight)

Source: Transport East State of Rail Report, 2023

Essex Thameside is a significant freight corridor that generates about 40-45 freight movements per day. These freight trains transport a diverse range of cargoes to and from various destinations along the corridor.

The majority of freight connectivity to and from the Essex Thameside corridor is with destinations in the Midlands and northern England, although there is also some traffic to and from southern and western England, Wales and the Scottish central belt.

Any uplift in freight traffic to and from Essex Thameside destinations would require consideration of capacity on the north London routes (including the Great Eastern Main Line).

Freeport East is a rail freight terminal in Harwich that has not been active. Recent upgrades may lead to new opportunities for rail freight in the area. In 2021 Harwich had its rail access upgraded to cope with growing demands and to help increase the attractiveness of the Freeport East bid. Since then, Freeport East (Harwich and Felixstowe and other maritime assets) has received final government approvals allowing it to move forward in the delivery phase. The freeport status will be cemented by a twenty-five million pounds (30 million euros) of government funding to support infrastructure enhancement. That almost certainly means further development of the multiple rail freight terminals within the complex.

The evidence underpinning the LTP4 explores what is required to shift more road freight movements to rail. The GB Freight Model includes three main factors which influence rail freight market share:

- Commodity: the growth areas are intermodal to /from ports; intermodal between major distribution hubs; construction materials. Most other commodities have low potential (although see comments below on “light weight freight”)
- Relative cost of road and rail: generally things that are difficult to control at a local level as the main cost factors include the cost of fuel and staff.
- Access to rail freight: the biggest single influence on rail freight market share is whether the origin and / or destination have a rail terminal on site or nearby. Goods starting near a rail terminal have a major cost saving as there is no need for expensive road freight trips, and this lower price leads to higher rail share. Most ports have rail access and so the rail freight share to and from ports is high.

The National Rail forecast uses these factors to produce an unconstrained modal forecast by commodity and by origin – destination. The key constraints that could prevent the forecasts being met are:

- Capability: do the rail freight routes with market potential have the physical capability to carry rail freight? In many cases the capability constraint is the loading gauge: routes used for intermodal services need a larger loading gauge to be competitive. But other factors that might constrain rail freight include maximum axle load (route availability) and length of passing loops / sidings.
- Capacity: Many rail routes have significant spare capacity available for rail freight. A few locations are capacity constrained, and this will constrain rail freight market share unless investment is made to improve capacity.

Unfortunately, one of the most constrained areas is the network of routes from Essex is through London. Lack of capacity on these routes seriously constrains potential to grow rail freight to and from Essex.

2.1.3 Movement of People

Journey to work data (Countywide Model, 2017 (07:00 – 19:00)) indicates the following commuting car trip summaries in Essex:

- Internal car commuting trips made up over 50% of total originating trips in:
    1. Chelmsford
    2. Colchester
    3. Harlow
    4. Southend
    5. Tendring
    6. Thurrock
- Colchester is the district with the highest total of originating car commuting trips: 33,434. Colchester is also a large district meaning people are more likely to make longer car trips within the district.
- Harlow stands out here as the district is mostly urban so there is greater potential for modal shift
- The highest car commuting flows to Greater London originate in:
    1. Brentwood
    2. Epping Forest
    3. Thurrock

A lack of key services in rural areas means residents have to travel further than those in urban areas. However, public transport access is poor in rural areas and bus frequency is limited-low meaning that people may be dependent on the private car.

Uttlesford, Tendring, Braintree and Epping Forest stand out as areas that have particularly poor access to key services via sustainable modes. Could these areas be the target for better public transport facilities, DRT services like DigiGo and Park and Stride options/Interchange hubs to enable residents to travel part of their journey via another mode.

Tendring has particularly poor access to areas of employment, a lower working from home potential and has both higher scores for Income and Employment deprivation.

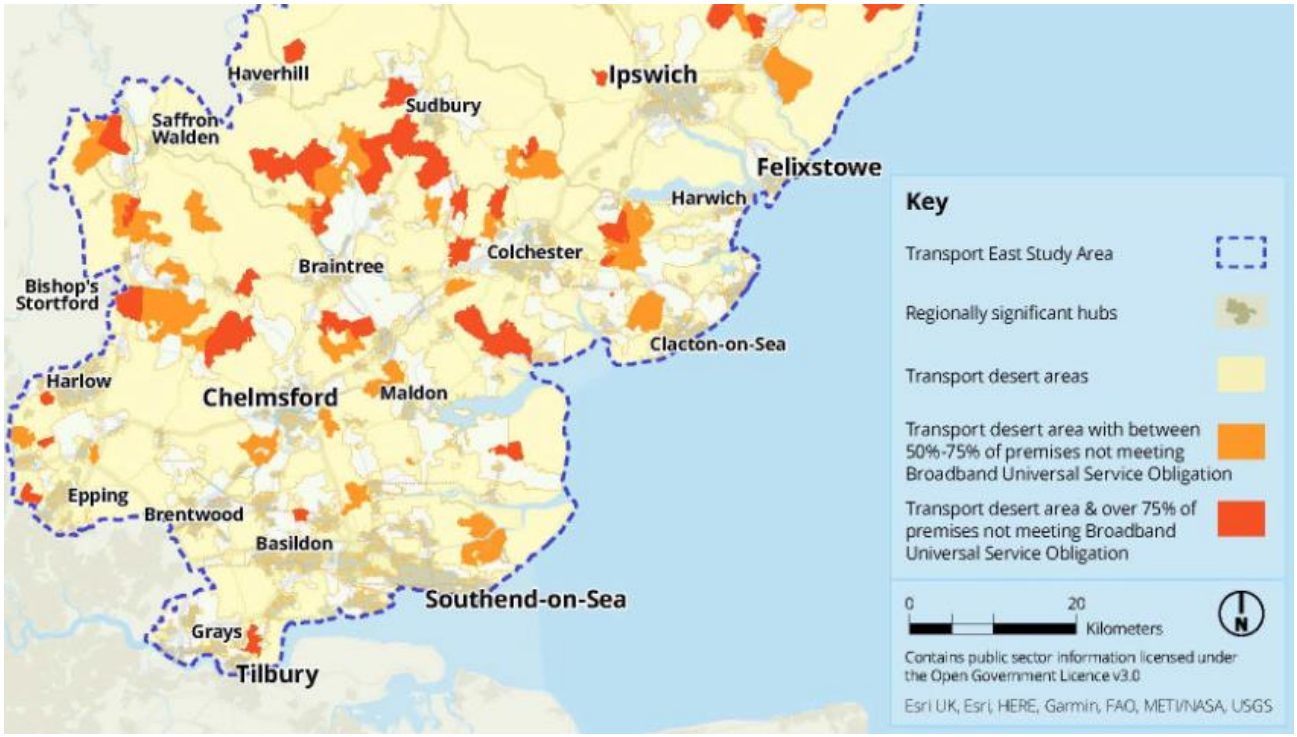
Some areas may be a 0-30 minute Public Transport journey away from a town centre/key service. However, the frequency of bus services that run to those areas may be low-limited, therefore making public transport a less reliable and convenient mode.

2.1.4 Public Transport Coverage

Rural communities often find it difficult to reach their nearest town centres by public transport. Some rural communities live in what is effectively a ‘public transport desert’. These are shown in the Figure below and are areas without access to nearby alternative transport

other than private vehicles.

Figure 7: Public Transport Deserts



Source: LTP4 (2025)

2.1.5 Summary of Key Issues from LTP4 Evidence Base

The key findings from the evidence base are included within the sub-sections below.

2.1.5.1 Movement of Goods

- Harwich Port does not transfer much freight by rail. The port handles around 83,000 containers per annum, suggesting potential future scope to reinstate intermodal rail services.
- There are gaps in electrification on the Essex Thameside corridor freight services, with many still hauled by diesel locomotives.
- There has been a 30% increase in freight (tonnes) at Stansted Airport between 2011-2021.
- In regard to HGVs, 65 million tonnes of goods were lifted from Essex in 2022, and 55 million tonnes lifted to Essex. A total of 31 million tonnes were moved internally within the county.
- Additional parking and facilities for HGV drivers may be required nearer to large warehouses and areas of growth.
- The number of casualties from collisions involving HGVs almost doubled between 2017 and 2022.

2.1.5.2 Movement of People

- Within Essex education, healthcare and retail are the most common industries, all with minimal opportunities for home working
- Employment is projected to increase by 15% and productivity is projected to increase by 16% by 2040
- Greater Essex is more than 5pp behind Great Britain overall by education qualification level
- Car ownership is usually higher in rural or low income areas, and has increased overall across Essex between 2011 and 2021
- Travel to work by car is high, especially in rural and coastal areas
- Over 30% of car trips are below 4 miles; a total of nearly half a million daily trips and 1.1 million vehicle miles. There is potential for an increase of 708,000 walking and cycling trips on an average weekday, based on car occupancy averages.
- There is generally a lack of key services in rural areas, which means rural residents have to travel further than those in urban areas. Also, there is often poor public transport access in rural areas with limited bus frequency contributing to car-dependence.
- The average job density (ratio of jobs to working population) for Essex is 0.77, compared with 0.85 for the UK.
- Tendring has particularly poor access to areas of employment, lower home working potential, and has both higher scores for Income and Employment deprivation (IMD). Tendring also has a significantly higher proportion of residents economically inactive (32%) than the Essex and England averages.

2.1.5.3 Transport Network

- Delay is highest in town and cities across both peak periods. Colchester and Chelmsford experience the most hours lost to delay and highest cost in Essex – Hours lost to delay in Chelmsford in 2022 was still 21% below 2019 levels, meaning traffic had not returned to pre-covid levels. Basildon's traffic levels exceeded pre-Covid levels in 2022
- Key routes experiencing delays – In the AM Peak, A12 SB, A120 WB, and the A127 (both directions approaching Southend) show significant delays; in the PM Peak, A12 NB, A127, A120 EB and A130 show significant delays.
- The impact of Climate Change on transport infrastructure is significant.
- Flood Risk Areas that are of the highest priority impact Colchester, Chelmsford and Great Dunmow. It is likely to also have an impact on the SRN.
- A 2022 'Public Satisfaction Survey' by National Highways & Transport indicates that the 'Condition of highways' had the lowest satisfaction level in Essex at 22%. This remains 12 percentage points below the national average.
- It is local roads that are perceived to need the most improvement, This is a significantly higher percentage than other categories (PR1, PR2, A,B and C

roads), but has improved since 2014. Similarly, satisfaction with the frequency of bus services has decreased.

- There is a perceived need for footway improvement. High-use routes have seen large increases in this perceived need for improvement since 2015, peaking at 32% in 2019/20.

2.1.5.4 Sustainable Travel and Accessibility

- In Essex, a high proportion of work trips are by car. Almost two-thirds of all work trips across the county are by car. Less than 28% of journeys to work are made by public transport.
- There is low access to employment opportunities, particularly in parts of Epping Forest, Chelmsford, Braintree, Uttlesford, Rochford and Maldon districts.
- There is generally poor access to key services by public transport in parts of Essex. There is also high car access in rural areas. As an example, 90% of residents in Uttlesford have access to a car.
- The cost of car parking is often cheaper than bus fares. Car parks are around half the price of an average commuter bus fare.
- Demand responsive transport (DaRT) has improved accessibility and reduced journey times. For example, journey times to medical services in North Essex improved substantially between 2020 and 2022, compared to minimal change in South Essex.
- Many towns have far from a complete cycle network, and routes are not always connected and signposted.
- Urban residents travel shorter distances to work. According to the Countywide model, more than 30% of car trips in Essex are below 4 miles, so some of these trips could potentially be shifted to active travel.

2.1.5.5 Quality of Local Environment / Existing Communities

- According to the Essex Residents' Survey, access to green space is considered important by residents to help make an area a good place to live. Access to health services and the level of crime and antisocial behaviour are also important to local communities and have become more important since 2020.
- Road and pavement repairs are considered the top priority for improvement by Essex residents, followed by the level of traffic congestion and access to health services
- The need to reduce traffic congestion was ranked particularly highly in Castle Point and Rochford, with more than 60% of respondents identifying it as an issue.
- Residents in rural parts of the county must travel over an hour to their nearest employment centre (offering 500 jobs) by public transport.
- Twelve Essex wards are listed on the 'Left Behind Neighbourhoods Index'. This means having high levels of deprivation and a lack of community and civic assets and infrastructure.

2.1.5.6 New Development Planning

- According to the Thriving Places Index 'good' places can have 'poor' transport. Districts with typically higher local condition scores do not necessarily have high transport scores. Uttlesford has the worst transport scores, likely due to it being in a rural area with only one rail line passing through.
- At least five Garden Communities are planned across Essex, with objectives to create sustainable communities, so they must be designed and located appropriately.
- Green infrastructure is essential in new developments, including sustainable urban drainage systems. Development should also design for future climate events, incorporating resilience to changing weather conditions and more frequent extreme weather events.
- Healthy Streets, Liveable Neighbourhoods and Walkable Neighbourhoods are planning approaches that can be developed in both new and existing communities.
- The provision of active travel routes and mobility hubs will help tackle the issue of car dependency and enhance last mile travel.

2.1.5.7 Improving the Local Environment

- There has been an increased frequency of extreme weather events. There requires further investigation of the impacts on the transport network of higher temperatures and more intense rainfall. Significant parts of Essex at long term risk from flooding, from surface water, or from rivers and seas
- New developments are best placed to adapt through the use of green infrastructure and SuDS, however existing communities need to be considered too, and how elements such as shading, cover and protection can be retrospectively included in their layouts.
- Some areas of Essex have inadequate access to green infrastructure (GI). The benefits of GI include health and wellbeing. There are target areas to improve access to GI in Harlow, Epping Forest, Colchester, Chelmsford Castle Point and Basildon.
- EV ownership is greatest in urban areas, which also have the highest density of charging points. There is lower EV ownership and fewer charging points in rural areas.
- Cargo bikes offer an efficient, low-carbon transport solution. They are often faster and cheaper than motor vehicles in urban areas, addressing issues congestion and air quality issues.

2.1.5.8 Health

- Health deprivation – correlates with life expectancy and TRSE Health Risk levels. Tendring is the most health deprived district and Uttlesford the least.
- Distance to health services – the best public transport / walking journey times in the County are in Chelmsford city centre (at less than 20 minutes). The worst is in

northern Braintree District (at 100-120 minutes).

- Air Quality – there are potentially illegal levels of NO2 in urban centres and along the SRN. Tendring District has the highest mortality rate for preventable respiratory disease (aged 75+) and the highest levels of hypertension (all ages).
- Noise – regarding preventable cardiovascular disease, the highest mortality rate in the County is Harlow (35%) in the <75 age range.
- Hospital waiting lists – the highest percentage of the local population on a hospital waiting list is 11% in Colchester and Tendring (correlates to health deprivation in both places)
- Vulnerable people are at risk of exposure to high air and noise pollution, as many care homes and schools are located near the road and rail network.
- Essex has high levels of overweight / obese adults and children, with 28% adults obese; 66% of adults being obese or overweight; Tendring, Braintree and Harlow having the highest levels of inactivity; 22% of those aged 4-5 are obese (England average being 20.9%).

2.1.5.9 Wellbeing

- Crime can potentially deter people from using active travel modes or public transport use: Bicycle thefts more prevalent than vehicle crimes; and hate crime is an increasing issue.
- Fewer people feel safe after dark than during the day – between 2014 and 2022: 87% up to 91% during the day; and 49% up to 55% after dark.
- Anxiety and depression are most prevalent in Basildon, Harlow and Tendring. Simultaneously, the percentage of adults that never walk are highest in Harlow (at 11%), and Tendring (at 8%).
- Approximately 37% of the Essex population feel lonely ‘some of the time’, ‘often’ or ‘always’. This is highest in Basildon (20% often & always) and is potentially caused by transport-related community severance.
- Similarly, higher anxiety levels are present in more rural areas.
- Coastal areas in Essex are struggling to maintain a healthy level of wellbeing for residents with a perceived need for improvement around safety, road collisions and community wellness.

2.1.5.10 Independence

- Access to bus and rail services: Total dedicated bus lane – only 16.3km in Essex. Average number of bus stops per km2 = 4
- In Uttlesford and Braintree there is poor walking access to bus travel, and journeys to a rail station take on average over 45 minutes
- Effects of community severance are greater on deprived communities and those with low mobility in Marks Tey (Colchester). Here there is poor air quality and noise exposure from the A120 and A12 negatively impacting health, and playing fields and sports facilities are severed from residential areas.

- Older people are more at risk of isolation and social exclusion. People aged 70+ tend to be more reliant on reliable, accessible and affordable public transport; are more likely to have difficulty walking to a bus stop; and are more likely to be deterred from using public transport if there are no bus shelters, nearby bus stops, or seating provisions.
- Tendring potentially suffers from the greatest barriers to youth independence in the county, with 11%+ of households not having access to a car/van. Clacton-on-Sea has the second lowest driving test passes in the county, and active travel is less accessible for secondary school children.
- Buses are used by disabled people 20% more frequently than non-disabled people. Disabled people in rural areas are less likely to travel by rail due to a lack of staffing in stations and booking assistance services reduces independence by affecting ability to make impromptu journeys.
- Rising bus fares are affecting the accessibility of bus services for low income families, corresponding to a significant barrier to employment and education opportunities.
- The elderly, disabled people, low-income families and rural areas are more affected by transport poverty. In Epping Forest and Castle Point, travel times of >60 minutes are prevalent to many key services including healthcare and employment.
- People who can no longer drive due to health or age will be forced into transport poverty.

2.2 Economy & Employment

2.2.1 Introduction

In order to meet the needs of a growing population and economy Local Authorities must account for future growth by forecasting the requirement for economic floorspace. This is typically provided by an Employment Land Needs Assessment (ELNA) to predict and meet employment needs. The table below summarises the floorspace requirements of each Local Authority within Greater Essex.

Table 1: Local Plan Employment Needs

LPA	Net new employment provision over Local Plan periods	Source of requirement
Basildon	Making provision of 92ha of land in order to deliver at least 51ha of additional employment development falling within use classes B1, B2 and B8 during the plan period.	Basildon Borough Council Revised Publication Local Plan 2014-2034 (withdrawn)
Braintree	The Plan sets out employment land requirements for the period 2016 – 33 for two plausible scenarios, baseline and higher growth. These two bookends provide flexibility to allow for a supply trajectory to reflect their differing requirements. For Braintree, there is a requirement for between 23 and 43.3 hectares of employment land required.	Braintree District Local Plan 2033 (Section 1 and 2) (2022)
Brentwood	Job growth will be provided for by […] a total of circa 47.39 ha of new employment land (B-use) allocations and continued support for existing employment sites and appropriate redevelopment where appropriate.	Brentwood Local Plan 2016-2033 (2022)

LPA	Net new employment provision over Local Plan periods	Source of requirement
Castle Point	In order to support the wider economy in South Essex, the economy of Castle Point will be enhanced through […] The provision of at least an additional 24 hectares of land identified for employment development falling within the B Use Classes of the Use Classes Order; and […] Support for the provision of at least an additional 1 hectare of land and 6,605 square metres of floorspace elsewhere in the borough for employment development falling within the B Use Classes of the Use Classes Order.	Castle Point Local Plan (withdrawn)
Chelmsford	The Plan allocates land for 55,000 sqm of office / flexible business space and 13,400sqm for food retail.	Chelmsford Local Plan 2013-2036 (2020) and Issues and Options Consultation Document (plan review) (2022)
Colchester	The Plan sets out employment land requirements for the period 2016 – 33 for two plausible scenarios, baseline and higher growth. These two bookends provide flexibility to allow for a supply trajectory to reflect their differing requirements. For Colchester, there is a requirement for between 22 and 55.8 hectares of employment land required.	Colchester Local Plan 2017-2033 (Section 1 and 2) (2021)
Epping Forest	The Plan sets out that the components of employment land requirement over the	Epping Forest District Local Plan 2011 to 2033 (2023)

LPA	Net new employment provision over Local Plan periods	Source of requirement
	period 2011-2033 are 16-19ha (to be provided).	
Harlow	The Plan states that to reflect the Economic Development and Prosperity Strategy for Harlow and the sub-regional service role of the Harlow and Gilston Garden Town, up to 18.8ha of B1 uses will be delivered at Harlow Business Park at The Pinnacles and at the Harlow Enterprise Zone at London Road. A further 2.2ha of land will be delivered for employment uses at Templefields.	Harlow Local Development Plan (2020)
Maldon	The Plan identifies three allocated sites to meet B1, B2 and B8 use needs at a total of 8.4ha.	Maldon District Council Local Development Plan (2014-2029) (2017) and Local Development Plan Review 2021+
Rochford	Although no allocations are identified at this stage of the plan-making process, evidence suggests an employment land requirement of 16 hectares is needed to meet future needs.	Rochford District Council Local Plan (2025-2040) (emerging)
Tending	The Plan sets out employment land requirements for the period 2016 – 33 for two plausible scenarios, baseline and higher growth. These two bookends provide flexibility to allow for a supply trajectory to reflect their differing requirements. For Tendring, there is a requirement for between 20 and 38 hectares of	Tendring District Council Local Plan 2013-2033 and Beyond (Section 1 and 2) (2022)

LPA	Net new employment provision over Local Plan periods	Source of requirement
	employment land required.	
Uttlesford	The Plan outlines that there is 49,000sqm of employment floorspace available at sites where planning permission is already in place, which contributes to the portfolio of sites available to assist meeting the delivery targets of premises B1, B2 & B8 uses. The Plan then identifies a further need for 48,983 sqm of land for office and industrial purposes, to be met through Plan allocations.	Uttlesford Local Plan 2021 to 2041 Regulation 18 (2023)
Southend-on-Sea	Although no allocations are identified at this stage of the plan-making process, evidence suggests an employment land requirement of 11 hectares is needed to meet future needs.	Southend-on-Sea New Local Plan Refining the Plan Options (2021)
Thurrock	Although no allocations are identified at this stage of the plan-making process, the combined employment floorspace requirement for Thurrock is 1,050,397 sqm of new floorspace, which translates into an employment land requirement of 259 hectares to be provided to meet future needs in full.	Thurrock Local Plan Initial Proposals (2023) (emerging)
Greater Essex (grouped)	A total of 158,184 dwellings over various plan periods (15-20 years)	N/A

2.3 Housing

2.3.1 Introduction

The latest population trend data shows that the population in Essex is growing. Not only should there be sufficient housing for the growing population, there should also be suitable housing to meet a wide range of needs. The following table outlines Local Plan housing provision (as adopted, where this is the case) and the newly identified targets that need to be addressed through future reviews of Local Plans at the LPA level.

Table 2: Local Plan Housing Needs (adopted) and new housing requirements per annum (pa)

LPA	Previous housing targets pa	New housing targets pa	Increase pa	% change
Braintree	813	1,098	285	35%
Chelmsford	913	1,406	493	54%
Colchester	1,043	1,290	247	24%
Epping Forest	725	1,210	485	67%
Harlow	514	648	134	26%
Maldon	276	544	268	97%
Tendring	770	1,043	273	35%
Uttlesford	675	749	74	11%
North Essex Total	5,729	7,988	2,259	39%
Basildon	1,039	1,291	252	24%
Brentwood	511	691	180	35%
Castle Point	349	685	335	96%

LPA	Previous housing targets pa	New housing targets pa	Increase pa	% change
Rochford	356	675	319	90%
South Essex Total	2,255	3,342	1,086	48%
Essex Total	7,984	11,330	3,345	42%
Southend-on-Sea	1,173	1,372	200	17%
Thurrock	1,158	1,066	-92	-8%
(Combined South Essex Total)	4,506	5,780	1,194	26%
Greater Essex Total	10,316	13,768	3,453	33%

The above table shows that within Local Plan periods (typically 15 years from adoption), housing targets will be increasing by approximately a third. This could have significant impacts for transport infrastructure and capacities, both by road and sustainable means. Such growth should be acknowledged through LTP priorities and schemes.

2.4 Health & Wellbeing

2.4.1 Introduction

Overall, the health of people in Essex is generally better than the England average. Life expectancy for men is higher than the England average and Essex is generally less deprived than the rest of England, with an average Index of Multiple Deprivation (IMD) score of 17.2 compared to the national average of 21.8.

2.4.2 Accessible Natural Greenspace

Accessible local greenspace is an important contributor to good health. It not only provides a daily experience of wildlife but contact with nature boosts people's physical and mental health. Exercise in the outdoors reduces obesity and is shown to reduce heart disease, blood pressure and diabetes – among England's most common medical problems. In addition to this, regular outdoor exercise can help to reduce obesity across all age groups. In Essex, the percentage of adults classified as obese is approximately 60%, which is marginally higher than the national average for England. Thus, encouraging an active lifestyle will be key to improving public health in Essex.

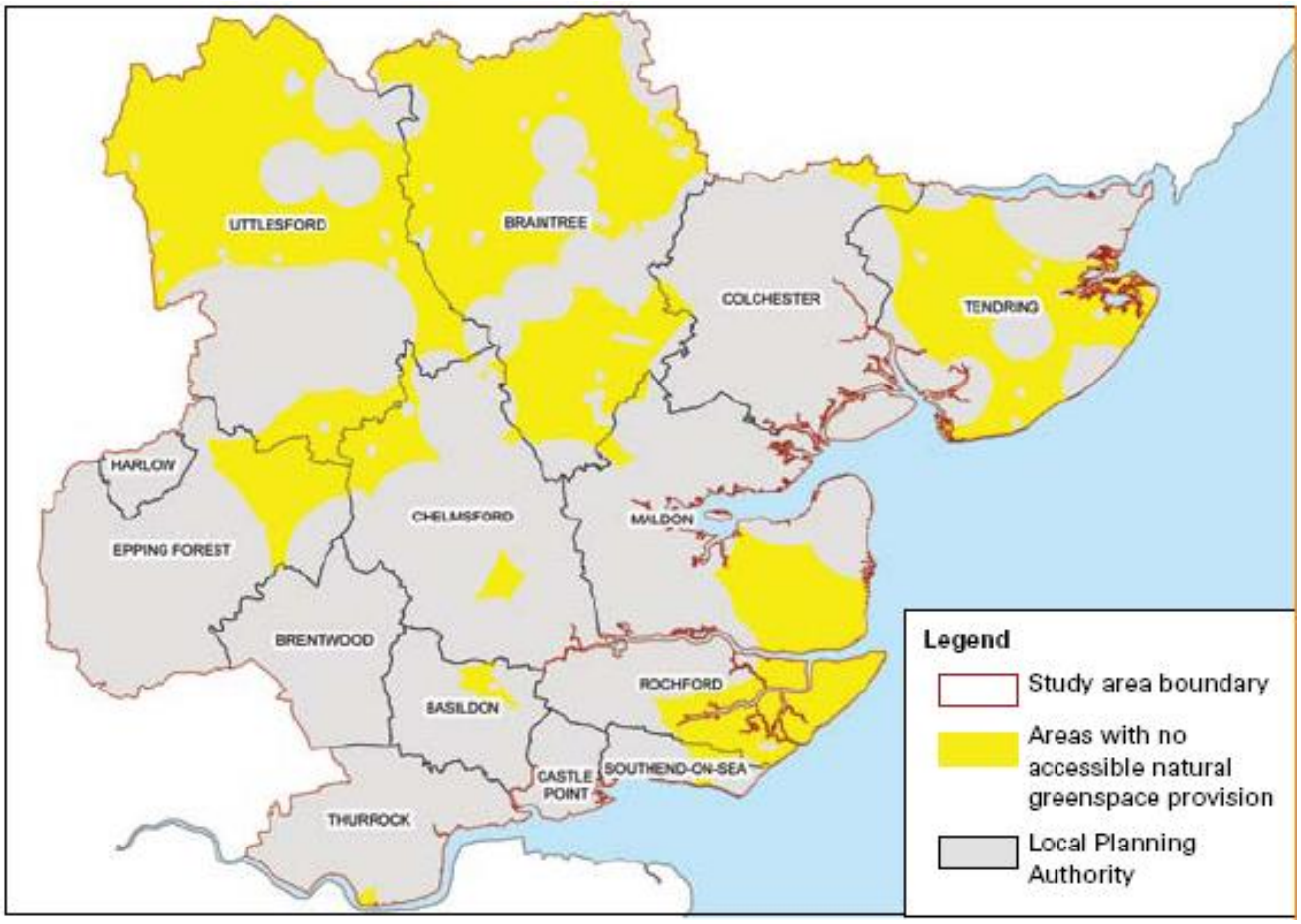
Natural England has devised the Accessible Natural Greenspace Standard (ANGSt), which sets out the minimum amount of accessible natural greenspace that any household should be within reach of. The criteria state that:

- an accessible natural greenspace of at least 2 hectares in size, no more than 300 metres (5 minutes' walk) from home;
- at least one accessible 20-hectare site within two kilometres of home;
- one accessible 100-hectare site within five kilometres of home; and
- one accessible 500-hectare site within ten kilometres of home.

In Essex there is 15,055ha of accessible natural greenspace however only 9% of Essex households have all of their ANGSt requirements met, while 16% of households within Essex have none of their ANGSt requirements met. The areas that fare the worst according to the ANGSt criteria are the more rural parts of the county as there is often limited official public access beyond the footpath network as shown in the figure below.

The districts of Tendring, Uttlesford and Braintree had the highest proportions of households without access to natural greenspace with 59%, 54% and 35% respectively. There were no households in Basildon. Braintree, Castle Point, Chelmsford, Rochford and Uttlesford meeting all of their ANGSt requirements and Brentwood, Maldon and Tendring had less than 1% being met.

Figure 8: Areas in Essex with No Accessible Natural Greenspace provision



Source: Analysis of Accessible Natural Greenspace Provision for Essex, including Southend-on-Sea and Thurrock Unitary Authorities, Essex Wildlife Trust.

2.5 The Historic Environment

2.5.1 Introduction

The historic environment should be effectively protected and valued for its own sake, as an irreplaceable record which contributes to our understanding of both the present and the past. Cultural heritage adds to the quality of life, by enhancing the local scene and sustaining a sense of local distinctiveness, which is an important aspect of the character and appearance of towns, villages and countryside and should not be compromised by the insensitive location of development. It also has an importance for leisure and recreation. The location and scale of transport infrastructure may have an adverse impact on nearby features of a cultural heritage value.

The Essex Historic Environment Record (EHER), maintained by Essex County Council, is a computerised database of all listed and other historic buildings and all known archaeological sites, historic parks and gardens and other historic landscape features in the county and currently holds over 36,000 records.

2.5.2 Listed Buildings

All buildings built before 1700 which survive in anything like their original condition are listed, as are most of those built between 1700 and 1840. The criteria become tighter with time, so that post-1945 buildings must be exceptionally important to be listed. A building normally must be over 30 years old to be eligible for listing.

Table 3: Listed Buildings in Essex

Administrative area	Grade 1 Listed	Grade II* Listed	Grade II Listed	Total
Essex	266	751	12,970	13,947

Source: Historic England

The total number of listed buildings or groups of buildings in England is over 377,000 and in Essex there are around 14,000. Grade I buildings are of exceptional interest, sometimes considered to be internationally important. Only 1.9% of all listed buildings in Essex are Grade I and 5.3% have been designated as Grade II* buildings; which are particularly important buildings of more than special interest. The remainder are Grade II listed meaning they are nationally important and of special interest.

There is a fairly even distribution of listed buildings within Essex; however, there is a greater concentration to the north particularly in the districts of Uttlesford and Braintree and also around historic towns such as Colchester.

2.5.3 Archaeology, Recorded Sites and Finds in Essex

As with rest of the UK, it is true to say that most archaeological sites and deposits in Essex remain buried, hidden and thus preserved. However, the known archaeological resource in the county is very varied and highly significant. There are over 36,000 records of archaeological sites and finds, recorded on the Essex Historic Environment Record (EHER) for the county. The archaeological deposits range in date from the Palaeolithic, through to structures related to the Cold War. However, it should also be remembered that the EHER represent only the known deposits with many new sites being identified each year. Archaeological sites (and their setting) constitute a finite, non-renewable resource, vulnerable to damage.

2.5.4 Scheduled Monuments

Scheduled Monuments (SMs) are sites of national importance and protected by the Ancient Monuments and Archaeological Areas Act 1979. SMs are designated to preserve the monument for the future and protect it from damage, destruction or any unnecessary interference. There are 296 SMs in Essex, ranging from prehistoric burial mounds to unusual examples of World War II defensive structures.

2.5.5 Conservation Areas

Essex currently has 193 designated Conservation Areas. The Conservation Areas are defined as historical town centres and buildings having ‘special architectural or historical interest, the character of which is desirable to preserve or enhance’ which are protected under the Listed Buildings and Conservations Areas Act (1990). The objective of the Conservation Area designation is to ensure that the character of the defined area is preserved from developments which do not preserve or enhance its character.

2.5.6 Historic Parks and Gardens

These are designated by English Heritage and defined as “a park or garden of special historic interest”. They are graded I (highest quality), II* or II. There are currently 37 historic parks and gardens in Essex. Of the 37, six have been graded II* and one, Audley End, has been awarded grade I status which is the highest quality.

2.5.7 Historic Battlefields

There is one registered battle site within Essex, located at Northey Island in the Blackwater Estuary. It is known as the Battle of Maldon which took place in 991AD between the Saxons and the Vikings who wanted to invade England. The battlefield site is situated within a number of designations: The Coastal Protection Belt, Special Landscape Area and a SSSI.

2.6 Biodiversity & Nature Conservation

2.6.1 Introduction

Essex is predominantly rural in character with a diverse wildlife. There are sites designated as internationally, nationally and locally important due to the habitats and species present. The Essex coastline affords international protection due to a series of saltmarshes, mudflats, sandflats, lagoons and estuaries which are not only important examples of habitats but are home to over 100,000 migratory birds. Conservation of sites and designations of biodiversity value have an important role within the planning process, land management, and controlling development pressure.

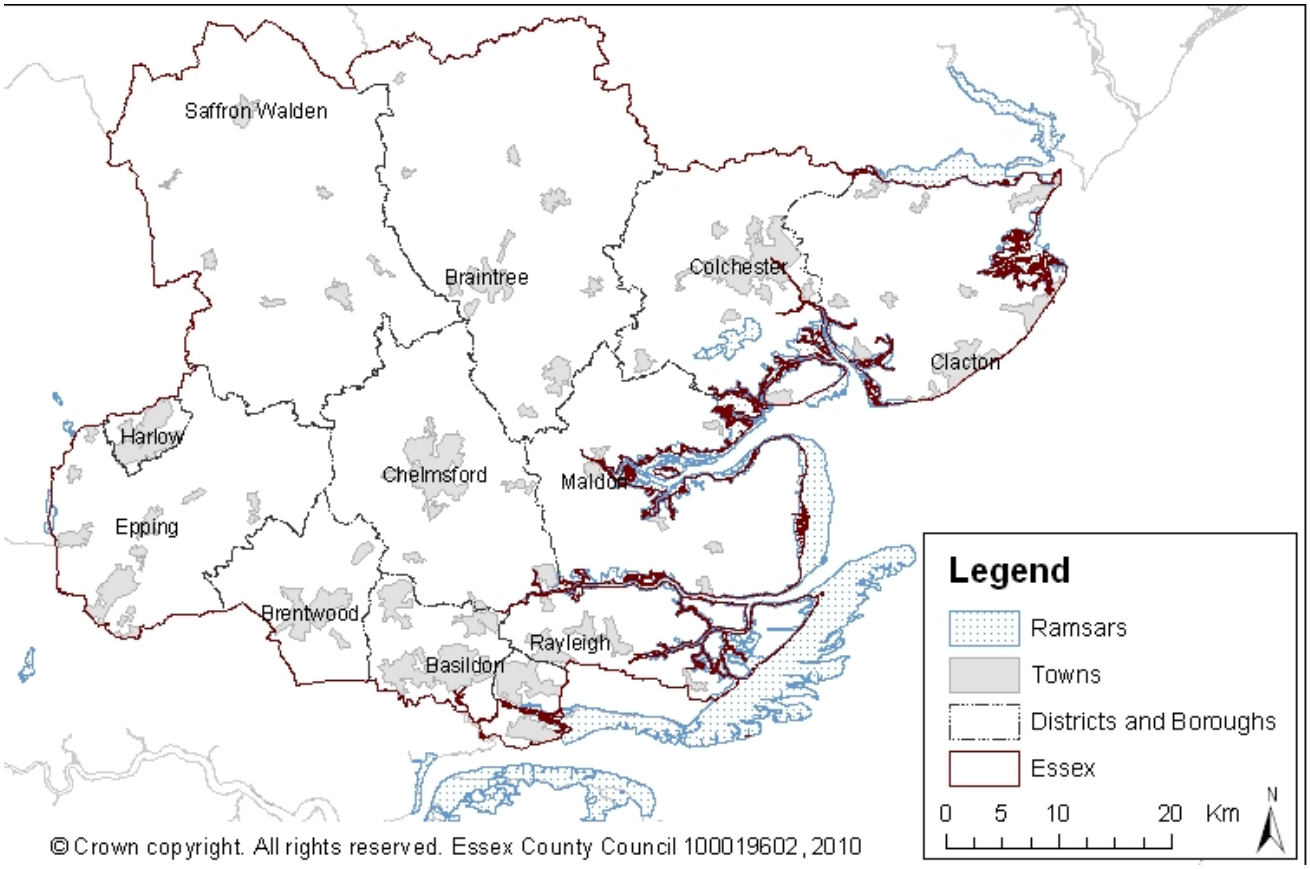
2.6.2 Land Designations

2.6.2.1 Ramsar Sites

Ramsar sites are wetlands of international importance designated under the Ramsar Convention which have a high degree of protection. They often incorporate Special Protection Areas (SPAs) and Special Areas for Conservation (SACs).

In Essex there are 10 Ramsar sites (as shown in the figure below) which cover approximately 30,524ha and include coastal areas, estuaries, rivers and lakes/reservoirs. These include Hamford Water, parts of the Colne and Blackwater estuaries, and the Dengie Marshes. Development is not suitable on such sites or in any location that may see a decline in their habitat quality.

Figure 9: Ramsar Sites in Essex



Source: Essex County Council, 2010

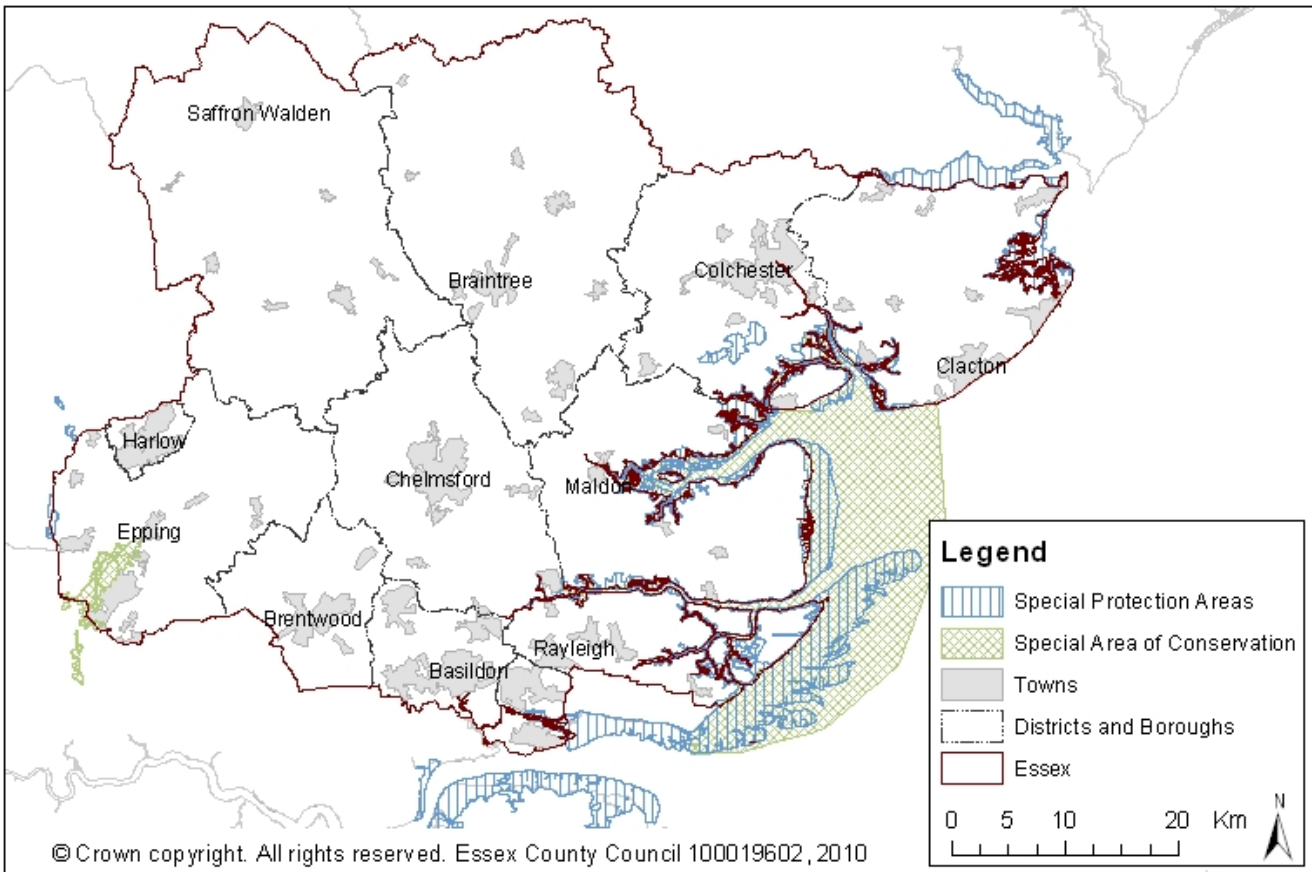
2.6.2.2 Special Protection Areas and Special Areas for Conservation

Special Protection Areas (SPAs) are internationally protected sites which are classified in accordance with Article 4 of the EC Directive on the Conservation of Wild Birds (79/409/EEC). SPAs are designated to protect rare and vulnerable birds and for regularly occurring migratory species. They are also often designated as Ramsar sites and comprise areas of estuaries and coasts. The majority of the Essex coastline has been designated as part of the Mid-Essex Coast Phase, which is made up of 5 separately designated SPAs. Combined, these cover an area of approximately 23,000 ha.

Special Areas for Conservation (SACs) are sites of international importance designated under the EC Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC). There are three SACs in the County: Epping Forest, Essex Estuaries and Hamford Water.

The designated SPAs and SACs are shown in the figure below. Together the SPAs and SACs form 'Natura 2000', a European wide network of areas of special nature conservation interest. Due to the high level of protection that these designations are given appropriate measures to reduce potential adverse impacts arising from development proposals are required.

Figure 10: Special Protection Areas and Special Areas for Conservation in Essex

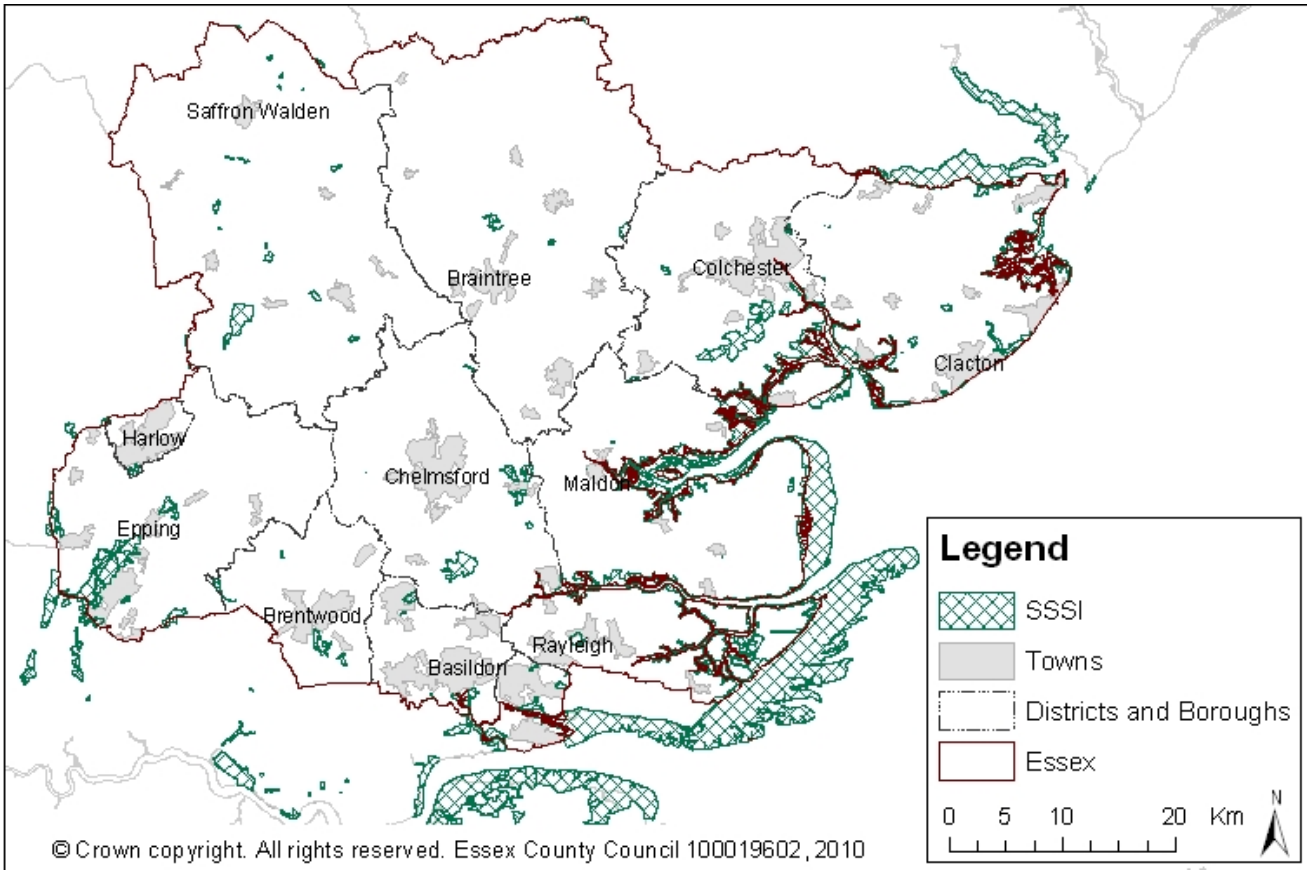


Source: Essex County Council, 2010

2.6.2.3 Sites of Special Scientific Interest

Sites of Special Scientific Interest (SSSIs) are designated areas of land which are considered to be of special interest due to their fauna, flora, geological and/or physiographical features. In Essex there are 87 SSSIs covering a total of approximately 37,000 ha, the largest proportion of which are along the coastline as shown in the figure below. There are over 4,000 SSSIs in England.

Figure 11: SSSIs in Essex



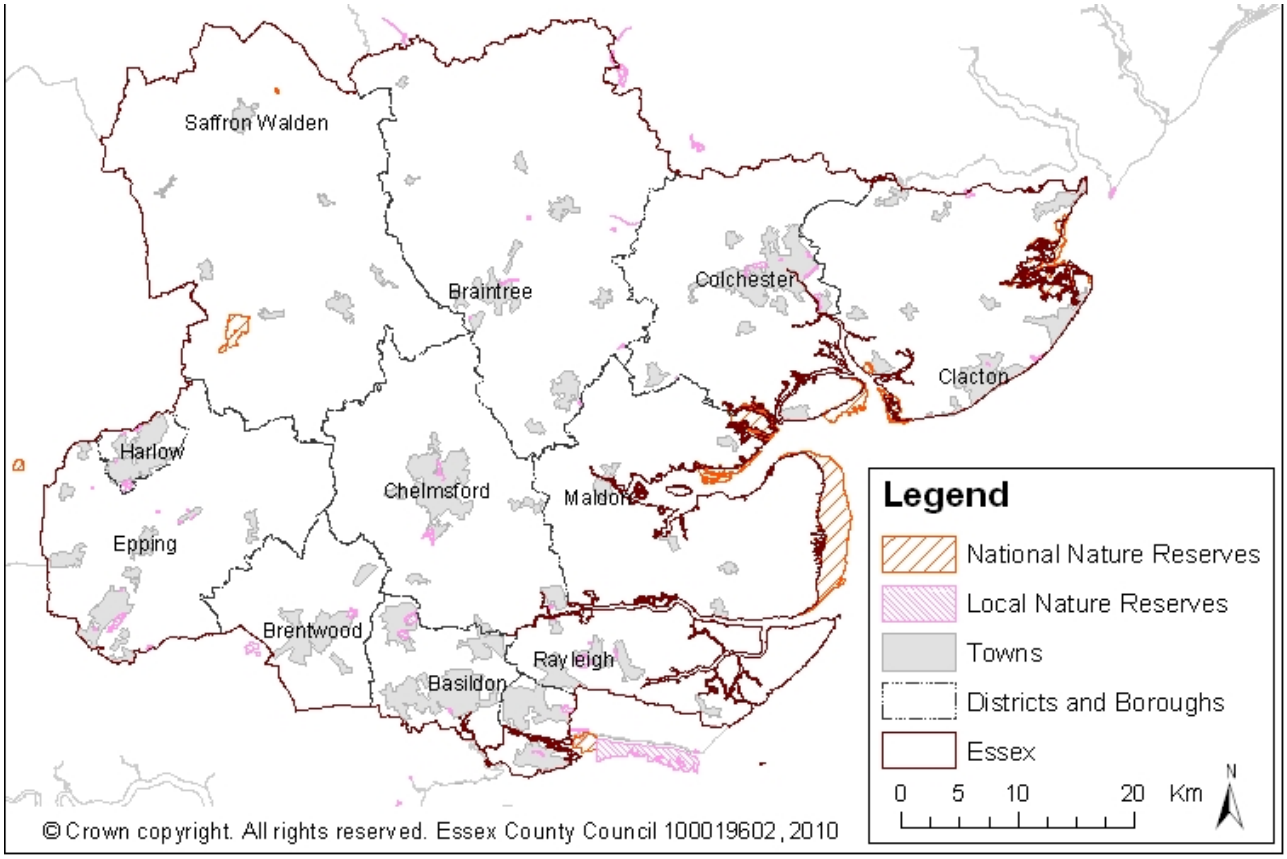
Source: Essex County Council, 2010

2.6.2.4 National Nature Reserves

Natural England is the body empowered to declare National Nature Reserves (NNRs) in England, the Reserves being a selection of the very best parts of England's Sites of Special Scientific Interest. It is this underlying designation which gives NNRs their strong legal protection. The majority also have European nature conservation designations.

There are seven NNRs located in Essex. They are the Blackwater Estuary, Colne Estuary, Dengie, Hales Wood, Hamford Water, Hatfield Forest and Leigh. It is important that these designations are not negatively impacted upon through noise, vibration and pollution.

Figure 12: National Nature Reserves and Local Nature Reserves



Source: Essex County Council, 2010

2.6.2.5 Local Nature Reserves

Local Nature Reserves (LNRs) are designated by local authorities in conjunction with Natural England in recognition of their high interest in the local context for their wildlife or wildlife education value; or because they offer an important area for informal enjoyment of nature by the public. There are currently 49 LNRs in Essex as shown in the figure above along with the designated NNRs.

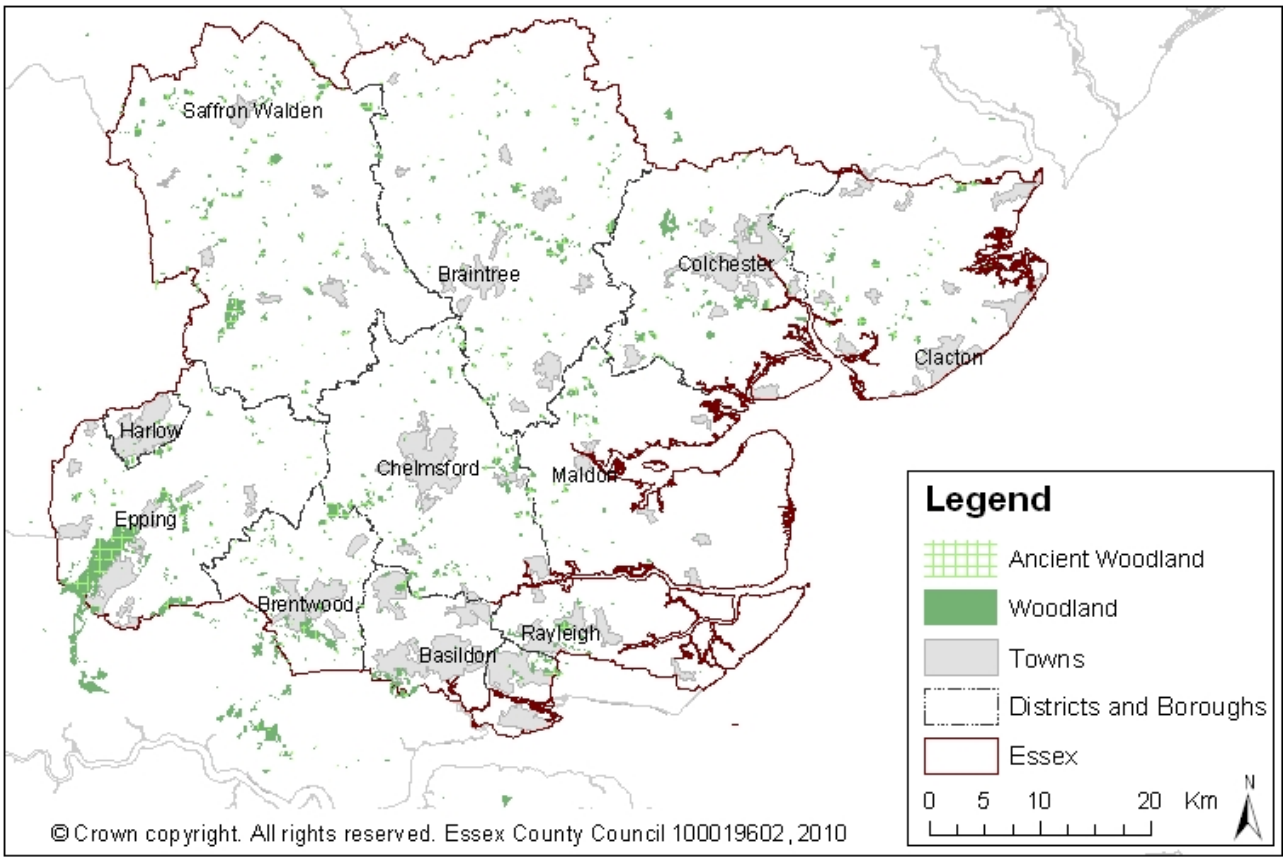
2.6.2.6 Local Wildlife Sites

Previously known as Sites of Importance for Nature Conservation (SINC) they are now known as Local Wildlife Sites (LoWS) and support both locally and nationally threatened wildlife species and habitats. In Essex there are approximately 1,440 LoWS covering around 13,000ha and together with statutorily protected areas they represent the minimum habitat to maintain current levels of wildlife.

2.6.2.7 Woodlands

The amount of woodland has diminished considerably in Essex over time. Three quarters has been lost since the 11th Century. The total wooded area is now 5.7% and this is fragmented and scattered across Essex as shown in the figure below.

Figure 13: Woodland in Essex



Source: Essex County Council, 2010

Ancient woodlands are wooded areas having been in continuous existence since 1600 AD. The amount of ancient woodland should not be reduced through new development, particularly of a large scale. Ancient Woodlands in Essex:

- Cover approximately 12,800ha. or 3.5% of the County;
- Include Epping Forest, clusters in the north-west (e.g. Oxlip woodlands), south-east (e.g. Hockley Woods) and heathland and woodlands on the Danbury ridge.

2.7 Landscapes

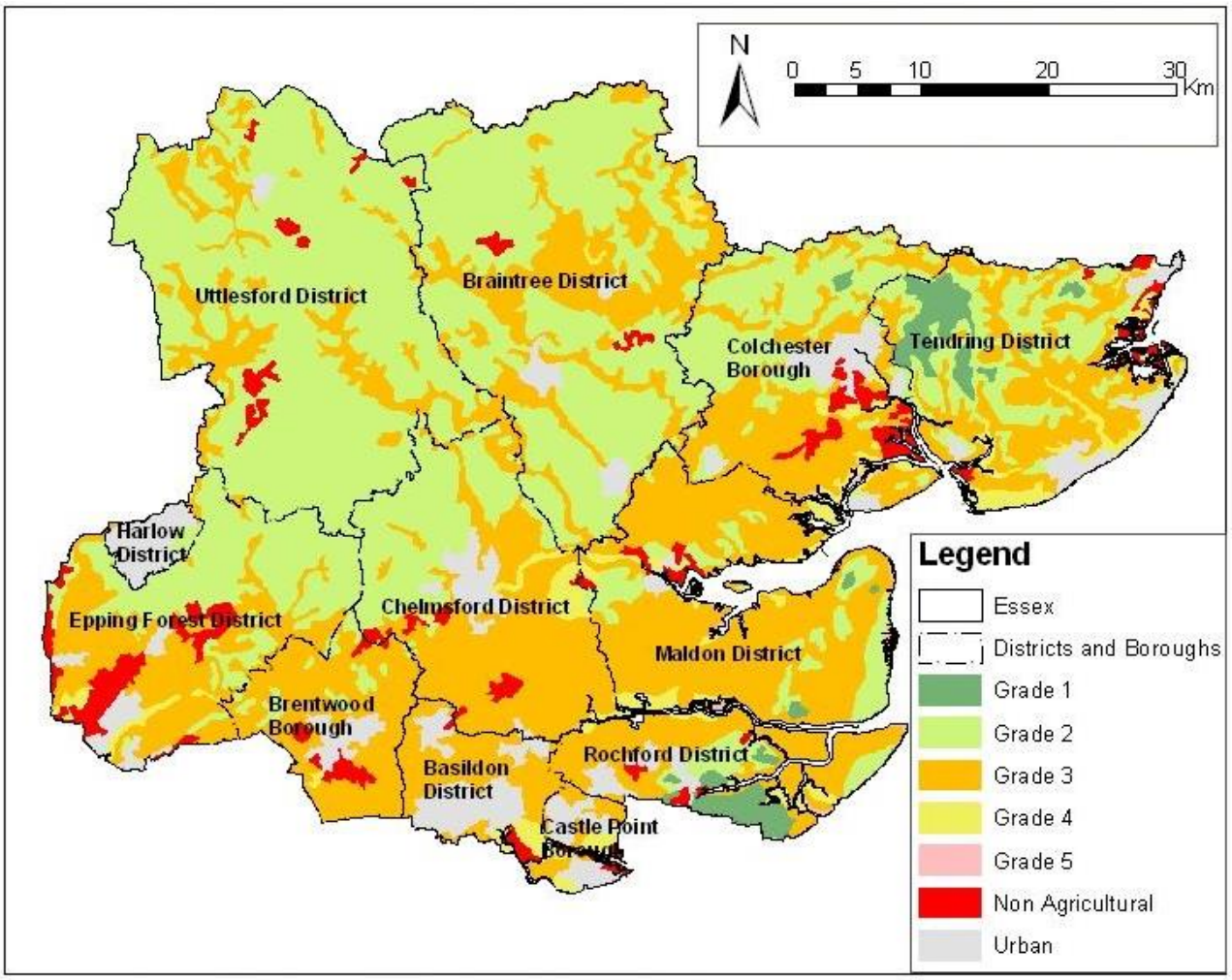
2.7.1 Introduction

Since the end of the last Ice Age, natural processes and successive human use have shaped the Essex landscape into its present form. The result is a combination of physical components such as landform, visible spatial components and non-visible spatial components which can incorporate sound and cultural associations. It is the combination of these aspects that determines an areas distinctive character, which can then be classified into wider character areas, or remain as distinct unique areas. Within the Essex landscape there are many areas of special interest which have been designated and protected from inappropriate development.

2.7.2 Agricultural Land

Soil types within Essex have also helped to shape the landscape, wildlife and economy of the County. Development should ideally not result in a loss of the County's most fertile land through location or any potential pollution. Agricultural Land is classified by quality in a grading system with Grade 1 being the highest quality and Grade 5 the lowest. Grades 1-3a are classified as the 'best and most versatile agricultural land' (BMV). BMV is the land which is most flexible, productive, and efficient in response to inputs and which can best deliver future crops for food and non food uses such as biomass, fibres and pharmaceuticals.

Figure 14: Essex Agricultural Land Classification



Source: Essex County Council, 2008

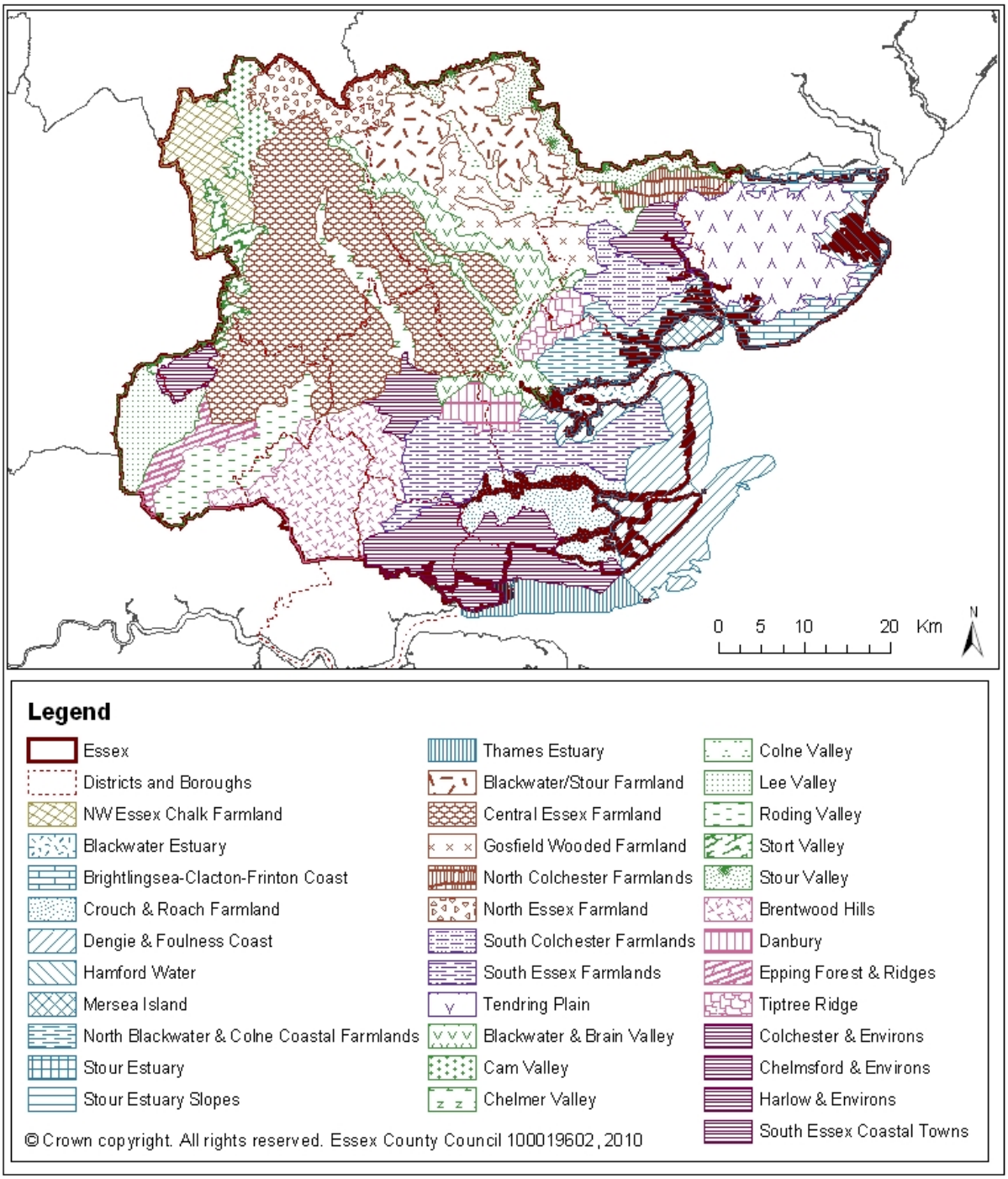
In Essex, 75% of the land area is considered agricultural land and over half of this is of high-grade soils as shown in the figure above.There are significant areas of Grade 1 agricultural land within Tendring and Rochford Districts, and smaller areas within Maldon District and Colchester Borough. Most agricultural land within Essex can be broadly classified as Grade 2 in the north and Grade 3 to the south. This is related to the location of the Essex till, with better quality land located in the north-west of the County. Much of Harlow District is classified as an urban area, and to a lesser degree so too is Basildon District and Castle Point Borough. Lands classified as non-agricultural are located within all districts, except for Harlow.

2.7.3 Landscape Character Areas

The Essex Landscape Character Assessment (Chris Blandford Associates, 2003) is based on the Countryside Agency's guidance, and establishes a 'baseline' of the existing character of the Essex landscape. The assessment involved a broad review of the landscape identifying 35 'Landscape Character Areas' (LCAs) within Essex (the figure below). They are

areas with a recognisable pattern of landscape characteristics, both physical and experiential, that combine to create a distinct sense of place.

Figure 15: Essex Landscape Character Areas



Source: Essex County Council

Further to the Landscape Character Assessment carried out in 2003 and the coastal character assessment in 2005, several Essex districts, namely Braintree, Brentwood,

Chelmsford, Maldon and Uttlesford, underwent a combined Landscape Character Assessment in 2006. This report divides the County's Landscape Character Areas into a further twenty-two smaller local Landscape Character Areas. This information can be used to determine the sensitivity of certain landscapes and areas to development.

2.7.4 Areas of Outstanding Natural Beauty

Areas of Outstanding Natural Beauty (AONBs) are described by Natural England as areas of high scenic quality that have statutory protection in order to conserve and enhance the natural beauty of their landscapes.

There are 34 AONBs solely in England covering approximately 15% of the country. These have been designated for protection under the Countryside and Rights of Way Act 2000.

In Essex there are two AONBs. The Dedham Vale AONB lies on the border of Suffolk and Essex and covers an area of 90 sq. km. It has been designated as such because it is an exceptional example of a lowland river valley. It has an extraordinary range of different scales and special features giving rise to distinctive landscape characters - rolling fields on the valley slopes, lush and sheltered valley-floor meadows and open marshes and intimate tributary valleys of the River Stour.

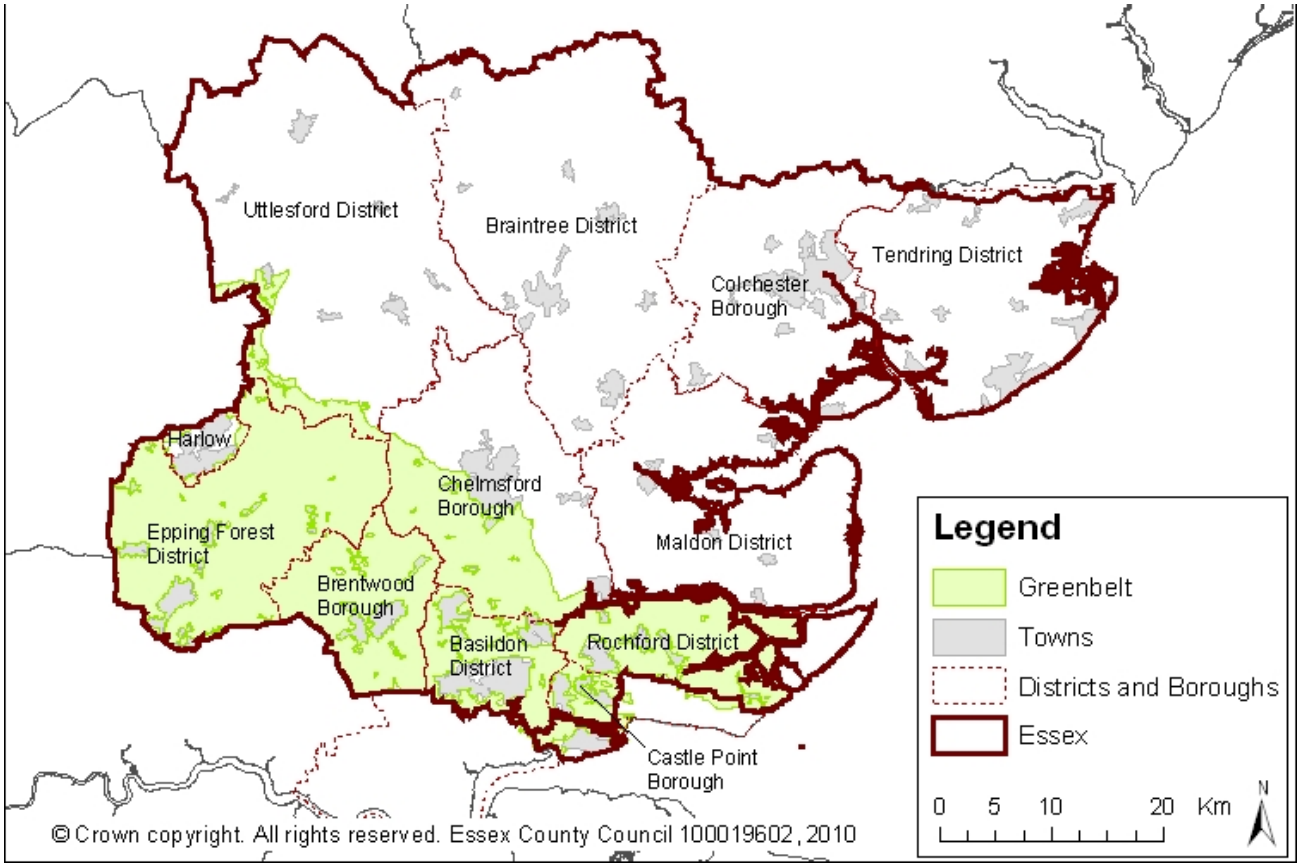
Additionally the recently extended Suffolk & Essex Coast and Heaths AONB can be found in Essex to the immediate south of the Stour Estuary in the District of Tendring. This designation covers 441 square kilometres of tranquil and unspoilt landscape including wildlife-rich estuaries, ancient heaths, windswept shingle beaches and historic towns and villages.

2.7.5 Green Belt

The largest green belt within the UK is the Metropolitan Green Belt around London which includes a large area of land in Essex. It is protected by planning policies within Local Plans which enforce restrictions on certain development within the designated area. There are five purposes of including land in Green Belts as set out in NPPF (2019). They are:

- to check the unrestricted sprawl of large built-up areas;
- to prevent neighbouring towns from merging into one another;
- to assist in safeguarding the countryside from encroachment;
- to preserve the setting and special character of historic towns; and
- to assist in urban regeneration, by encouraging the recycling of derelict and other urban land.

Figure 16: Metropolitan Green Belt coverage in Essex



Source: Essex County Council, 2010

Table 4: Area of Designated Green Belt Land by Local Planning Authority

Local Planning Authority	Are (Hectares)	Local Planning Authority	Area (Hectares)
Basildon	7,000	Harlow	640
Brentwood	13,700	Rochford	12,760
Castle Point	2,750	Uttlesford	3,810
Chelmsford	12,900	Essex	85,240
Epping Forest	31,680		

Source: CLG, March 2011

Of the 85,240 hectares of greenbelt in Essex, the biggest proportions can be found in Epping Forest (37%) and Brentwood (16%). It should be noted however that Green Belt release, leading to its development, is proposed in the majority of the emerging Local Plans of the above LPAs.

2.7.6 Protected Lanes

Protected lanes have significant historic and landscape values. They generally originate from pre-historic track ways, which have been in continual (if lighter) use since. Protected lanes are often narrow, sunken and enclosed by a combination of mixed deciduous hedges and mature trees, ditches and raised verges that can be indications of great age.

The volume weights and speed of traffic is often limited to preserve the special character and due to their age and use they also have great biological value. This would negate their use as access routes for certain vehicles.

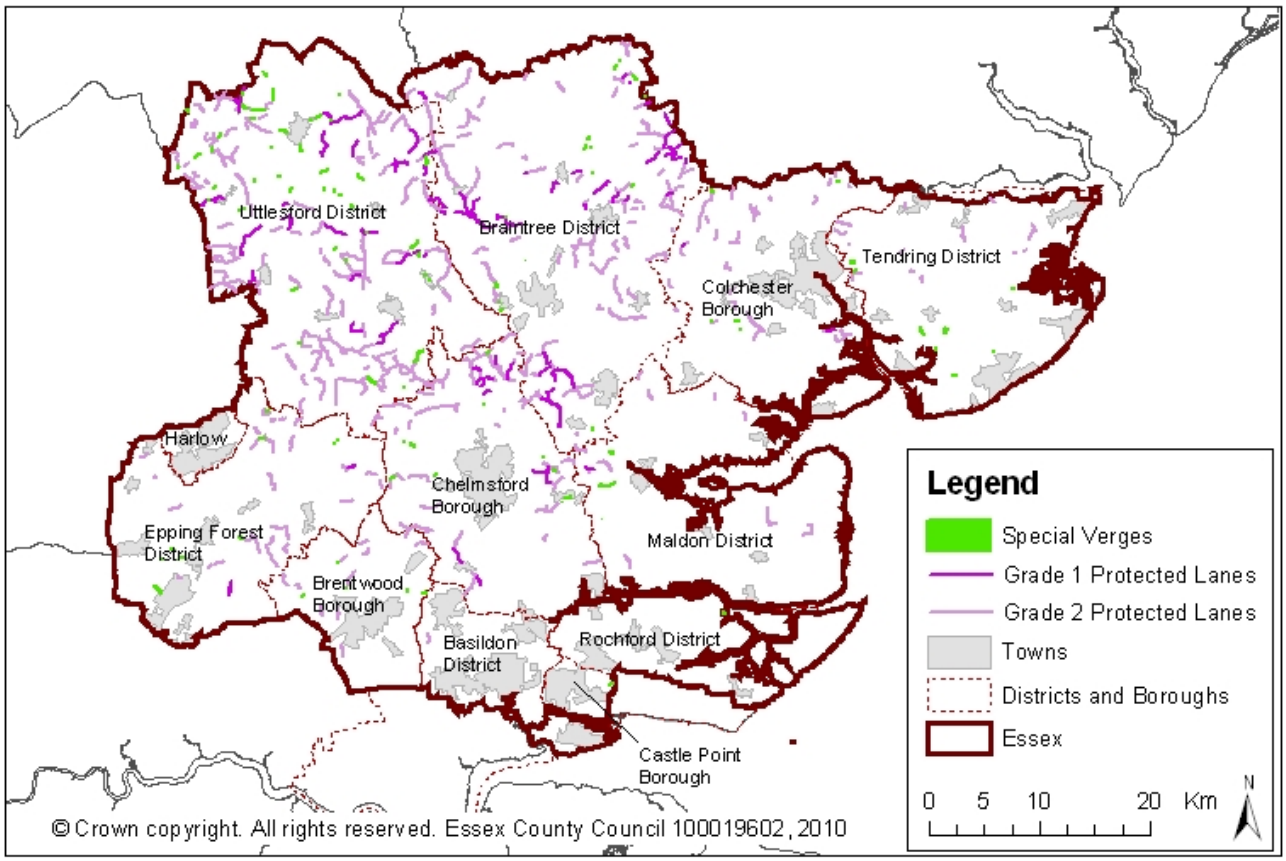
2.7.7 Special Verges

Roadside Verges are important and if sensitively managed they can increase the biodiversity of the verges themselves and from that the surrounding countryside. The reason for this is that verges can act as corridors interlinking fragmented or isolated habitats. In terms of wildlife value, verges can be split into three broad types:

- Landscaped and intensively managed verges: poorest quality.
- Recently created verges left to colonise naturally: vary in ecological value.
- Ancient verges: often of high ecological value.

With this in mind, in the 1970s, Essex County Council Highways Agency, Nature Conservancy Council and Essex Wildlife Trust identified a number of important verges which were subsequently designated as Special Roadside Nature Reserves. They aim to protect the future of rare and uncommon flowers growing on them. As such, access routes for certain vehicles such as HGVs should seek to deviate away from these verges. There are over 100 special verges designated in Essex.

Figure 17: Special Verges and Protected Lanes in Essex



Source: Essex County Council, 2010

2.8 Water

2.8.1 Introduction

Water policy in England aims to protect both public health and the environment by maintaining and improving the quality of water. In addition to the ever-increasing demand from human uses, water contributes to the natural environment, having ecological, aesthetic, scientific, educational and recreational value. The quality of water resources can be severely affected by development, should the quality of groundwater and waterbodies can become compromised by leachates. Considerations will include the proximity of vulnerable surface and groundwater.

In England, the Department for Environment, Food and Rural Affairs (Defra) oversees water policy. The Environment Agency makes sure that these policies are carried out and they have a responsibility to protect and enhance the environment.

2.8.2 Inland Water Resources in Essex

The main rivers in the north of Essex are:

- Stour
- Colne
- Pant/Blackwater and
- Chelmer

The main rivers in the south of Essex are:

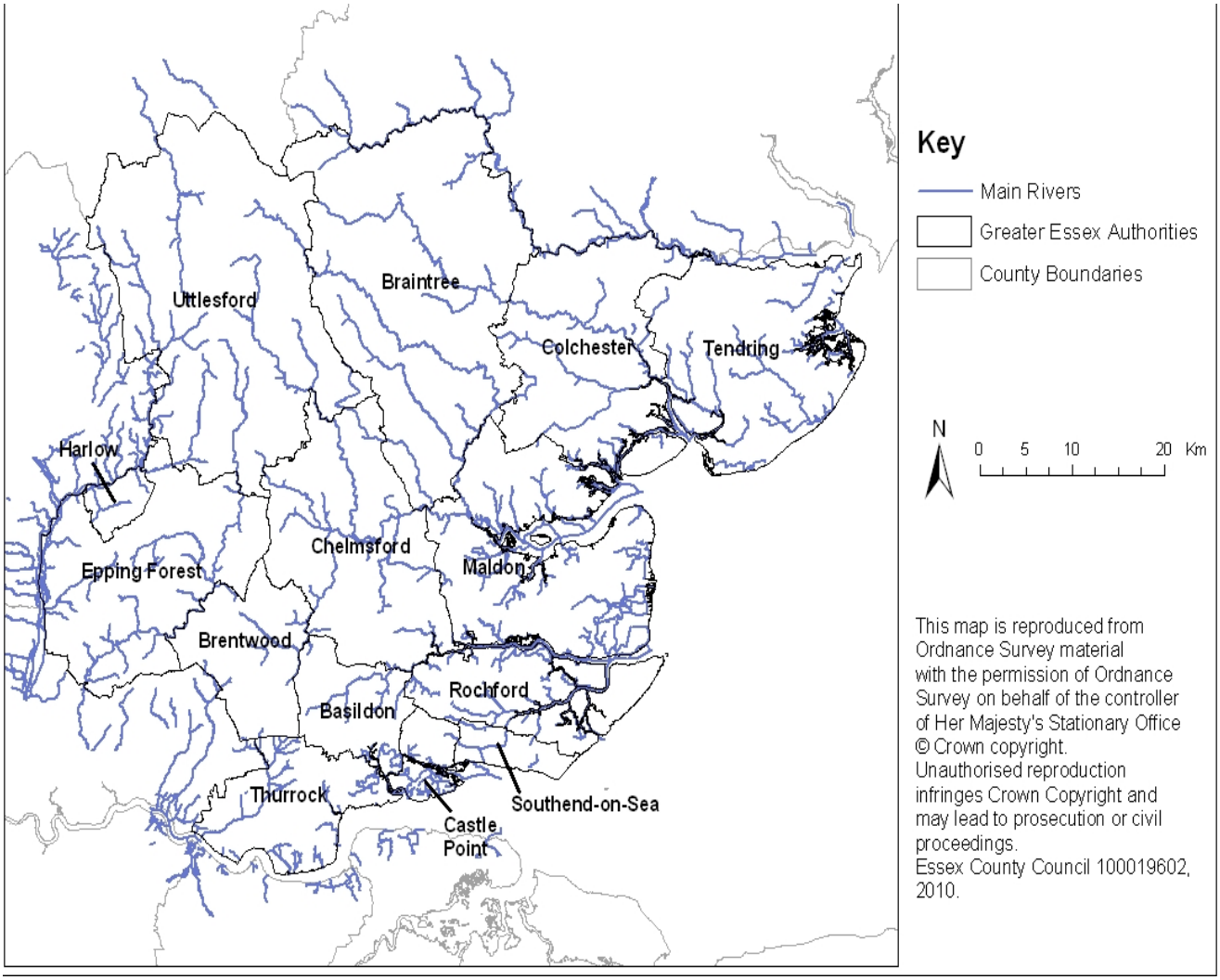
- Mardyke
- Crouch
- Roach
- Asheldham Brook

The main rivers in the west of Essex are:

- Lee
- Roding
- Stort

The figure below shows the location of the main water courses running through Essex.

Figure 18: Rivers in Essex

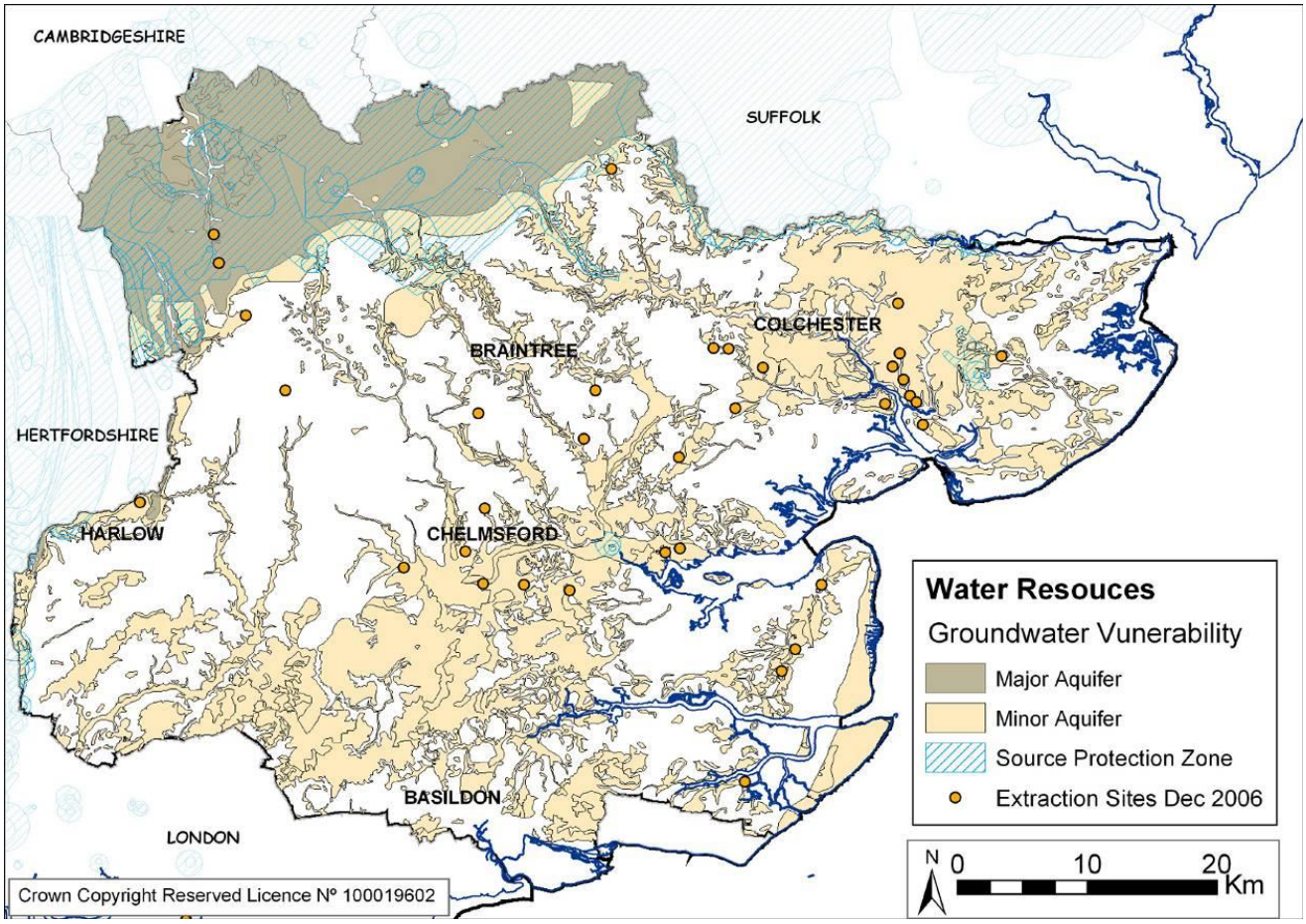


Source: Essex County Council, 2010

Essex is bounded by the River Thames to the South of the County. All development should ensure that there is no decline in water quality where possible; effects on water quality should be mitigated and minimised through effective (surface water) drainage mechanisms.

As well as surface water resources, the north of Essex, as outlined in the figure below, contains Chalk, Crag and Drift aquifers. The Chalk aquifer is the largest and most important type. It is used primarily for public water supply and spray irrigation. The Crag and Drift aquifers are overlain by sands and gravels of varying thickness which are locally important minor aquifers.

Figure 19: Aquifers in Essex



Source: Essex County Council, 2010

The majority of Essex has a very low contamination vulnerability rating. It is only the northern part of the county, including Halstead and Saffron Walden that has a higher vulnerability because of the porosity of the underlying chalk. In addition to natural water bodies there are various artificial water bodies in the county, especially reservoirs. Hanningfield and Abberton are Essex's largest inland water resources.

2.8.3 River Basin Management Plans

2.8.3.1 Water Quality

The European Water Framework Directive requires member states to identify the individual river basins within their national territory and assign them to River Basin Districts (RBDs). Essex falls within two River Basin Districts; the River Basin Management Plan for the Anglian RBD and the River Basin Management Plan for the Thames RBD although it is primarily within the former. These plans highlight the pressures facing the water environment and the actions that will address them.

Table 5: Water Quality – Anglian River Basin District

Status	River, canals and SWTs	Lakes and SSSI ditches	Estuaries	Coastal	Surface waters combined	Ground water
% of water bodies at good or better ecological status /potential now	10%	15%	11%	15%	11%	N/A
% of water bodies predicted to be at good ecological status /potential or better by 2021	13%	17%	11%	15%	13%	N/A
% of water bodies with an objective of good ecological status /potential or better	42%	57%	22%	31%	43%	N/A
% of water bodies at good chemical status now	99%	98%	100%	100%	99%	N/A
% of water bodies predicted to be at good chemical status by 2021	99%	98%	100%	100%	99%	N/A
% of water bodies with an objective of good chemical status	>99%	100%	100%	100%	>99%	N/A
% of water bodies at good or better overall status now	10%	15%	11%	15%	11%	29%

Status	River, canals and SWTs	Lakes and SSSI ditches	Estuaries	Coastal	Surface waters combined	Ground water
% of water bodies predicted to be at good or better overall status by 2021	13%	17%	11%	15%	13%	32%
% of water bodies with an objective of good or better overall status	42%	57%	22%	31%	43%	55%

Source: River Basin management Plan for Anglia river basin district

Note: SWTs – Surface Water Transfers

The overall percentages of rivers, canals and surface water transfers in the Anglia River Basin District are expected to improve in ecological, chemical and biological status by 2021. This is also the case regarding lakes and SSSI ditches and combined surface waters. There is expected to be no percentage improvement or decline in estuaries or coastal waters.

The Anglian River Basin District is subdivided into catchment areas and the Essex Rivers catchment area lies within the counties of Essex and Suffolk as well as a small part of Cambridgeshire. It encompasses the rivers and tributaries of the Stour, Colne, Pant/Blackwater, Chelmer, Crouch and Roach, along with the smaller catchments of Sixpenny, Tenpenny, Holland and Asheldham Brook.

Table 6: Water Quality – Thames River Basin District

	River, canals and SWTs	Lakes and SSSI ditches	Estuaries	Coastal	Surface waters combined	Ground water
% of water bodies at good or better ecological status/potential now	6%	15%	50%	0%	8%	N/A
% of water bodies predicted to be at	8%	18%	50%	0%	10%	N/A

	River, canals and SWTs	Lakes and SSSI ditches	Estuaries	Coastal	Surface waters combined	Ground water
good ecological status /potential or better by 2021						
% of water bodies with an objective of good ecological status /potential or better	56%	68%	60%	0%	58%	N/A
% of water bodies at good chemical status now	99%	100%	100%	100%	99%	N/A
% of water bodies predicted to be at good chemical status by 2021	99%	100%	100%	100%	99%	N/A
% of water bodies with an objective of good chemical status	>99%	100%	100%	100%	>99%	N/A
% of water bodies at good or better overall status now	6%	15%	50%	0%	8%	40%
% of water bodies predicted to be at good or better overall status by 2021	8%	18%	50%	0%	10%	45%
% of water bodies with an objective of good or better	56%	68%	60%	0%	58%	64%

	River, canals and SWTs	Lakes and SSSI ditches	Estuaries	Coastal	Surface waters combined	Ground water
overall status						

Source: River Basin Management Plan for the Thames River Basin District

Note: SWTs – Surface Water Transfers

The overall percentage of rivers, canals and surface water transfers in Thames River Basin District are expected to improve in ecological, chemical and biological status but 2021. There is expected to be improvement in the ecological and biological status of lakes and surface waters combined. There is expected to be no percentage improvement or decline in estuaries for ecological, chemical or biological status by 2021.

2.9 Climate & Energy

2.9.1 Introduction

Planning's role is not only to shape sustainable communities which are resilient to future climates but to reduce emissions and minimise the human impact on the environment. Changes in climate are inevitable and 'PPS: Planning and Climate Change' acknowledges that in the future "we are likely to see more extreme weather events, including hotter and drier summers, flooding and rising sea-levels increasing the risk of coastal erosion" in the UK.

2.9.2 Climate Change Projections

The UK Climate Impact Programme has developed the UK Climate Change Projections 2009 (UKCP09) which models future climate scenarios for the UK.

The key findings from UKCP09 of how our climate might change in the future are:

- All areas of the UK will get warmer, and the warming is greater in summer than in winter. Across the UK, central estimates of the average regional summer (June, July, August) temperature rise in the 2080s are between 3 and 4°C.
- Across the UK, central estimates of regional average summer precipitation change are projected to be between -17% to -23% in the 2080s.
- Greater sea level rise in the south of the UK than the north. The central estimates for sea level rise (taking into account land movement) show that sea level is projected to rise by 18cm in London by 2040 and 36cm by 2080.
- Across the UK, central estimates of regional average winter precipitation change are projected to be in the region of +14% (NE) to +23% (SW), in the 2080s.
- Reaching a peak in global emissions in 2016 and achieving a 4% decrease per year thereafter, a global temperature rise to 1.8°C by 2050 is expected, which would then stabilise at about 2°C by 2100.

Key findings for the East of England for the 2080s (based on medium (current) emissions scenario) are:

- Under medium emissions, the central estimate of increase in winter mean temperature is 3ºC; it is very unlikely to be less than 1.6ºC and is very unlikely to be more than 4.7ºC.
- Under medium emissions, the central estimate of increase in summer mean temperature is 3.6ºC; it is very unlikely to be less than 1.9ºC and is very unlikely to be more than 5.9ºC.
- Under medium emissions, the central estimate of change in winter mean precipitation is 20%; it is very unlikely to be less than 4% and is very unlikely to be more than 44%.

- Under medium emissions, the central estimate of change in summer mean precipitation is –20%; it is very unlikely to be less than –44% and is very unlikely to be more than 6%.

Sea level rise and subsidence will lead to more frequent flooding of coastal areas. Increased temperatures and greater fluctuation in annual precipitation will further increase pressure on water resources. Essex is already one of the driest areas in the UK.

2.9.3 CO2 Emissions

Changes in land use, and various industrial processes are adding heat-trapping gases, particularly carbon dioxide (CO_2), to the atmosphere. There is now roughly 40% more CO_2 in the atmosphere than there was before the industrial revolution. One of the main causes of increased CO_2 in the atmosphere is through the burning of fossil fuels for electricity and transportation.

Table 7: Reduction is CO2 Emissions across Essex

Area	2017 per Capita CO2 Emissions (tonnes)	Reduction since 2012 (%)	Area	2017 per Capita CO2 Emissions (tonnes	Reduction since 2012 (%)
Basildon	4.2	26.32	Epping Forest	7.8	9.30
Braintree	4.7	21.67	Harlow	4.2	33.33
Brentwood	6.2	16.22	Maldon	3.9	29.09
Castle Point	3.2	21.95	Rochford	3.5	25.53
Chelmsford	4.9	23.44	Tendring	4	23.08
Colchester	4.3	25.86	Uttlesford	9	14.29
			Essex Average	5	22.51

Source: DEFRA, 2019

Within Essex, Uttlesford District residents emitted the highest per capita amount of CO2 at 9t

with Castle Point residents emitting the least at 3.2t. The Essex average was recorded at 5t.

There was a 22.51% per capita reduction in CO2 emissions across Essex between 2012 and 2017. All local authorities in the plan area experienced a reduction in CO2 emissions per capita. The greatest CO2 emissions reduction per capita was in Harlow, achieving a 33.33% reduction between 2012 and 2017.

Table 8: CO2 Emissions in Kilotonnes by Sector 2017

Authority	Industrial & Commercial	Domestic	Transport	Total
Basildon	209 (27.1)	249 (32.3)	312 (40.5)	770
Braintree	168 (22.8)	218 (29.6)	350 (47.6)	736
Brentwood	77 (16.0)	132 (27.4)	272 (56.5)	481
Castle Point	44 (15.2)	140 (48.4)	105 (36.3)	289
Chelmsford	198 (22.5)	260 (29.5)	422 (48.0)	880
Colchester	196 (23.6)	259 (31.2)	376 (45.2)	831
Epping Forest	145 (14.1)	220 (21.3)	667 (64.6)	1,032
Harlow	148 (41.0)	110 (30.5)	103 (28.5)	361
Maldon	82 (31.1)	99 (37.5)	83 (31.4)	264
Rochford	60 (19.8)	132 (43.6)	111 (36.6)	303
Tendring	133 (22.3)	221 (37.1)	242 (40.6)	596
Uttlesford	118 (14.5)	144 (17.7)	551 (67.8)	813
Essex	1,575 (21.4)	2,183 (29.7)	3,593 (48.9)	7,351

Source: DBEI, 2019

In Essex the largest proportion of CO2 emissions produced in 2017 was within the transport sector, accounting for 48.9% of total CO2 emissions, followed by the domestic sector which produced 29.7%. Transportation around the County equated to 3,593kt of CO2 in 2017.

2.9.4 Flooding and Flood Risk

2.9.4.1 Introduction

River flooding is a natural process that plays an important role in shaping the natural environment. The effects of heavy and/or prolonged rainfall can be increased in severity as a result of decisions relating to location, design, nature of scheme, and land use. Increasingly flooding is viewed as a potential consequence of future climate change.

Although flooding cannot be completely prevented, its impacts can be avoided and reduced through good planning and land management. Data compiled on this subject is useful to identify whether broad potential future locations for development represent the most appropriate choices. Impacts on water flows may arise from the presence of hard surfaces being located in previously soft surfaced areas. The larger the scheme, the more significant such effects could become, especially if located near water-bodies associated with flooding. Drainage systems may be required to ensure that such effects are minimised.

2.9.4.2 Flood Zones

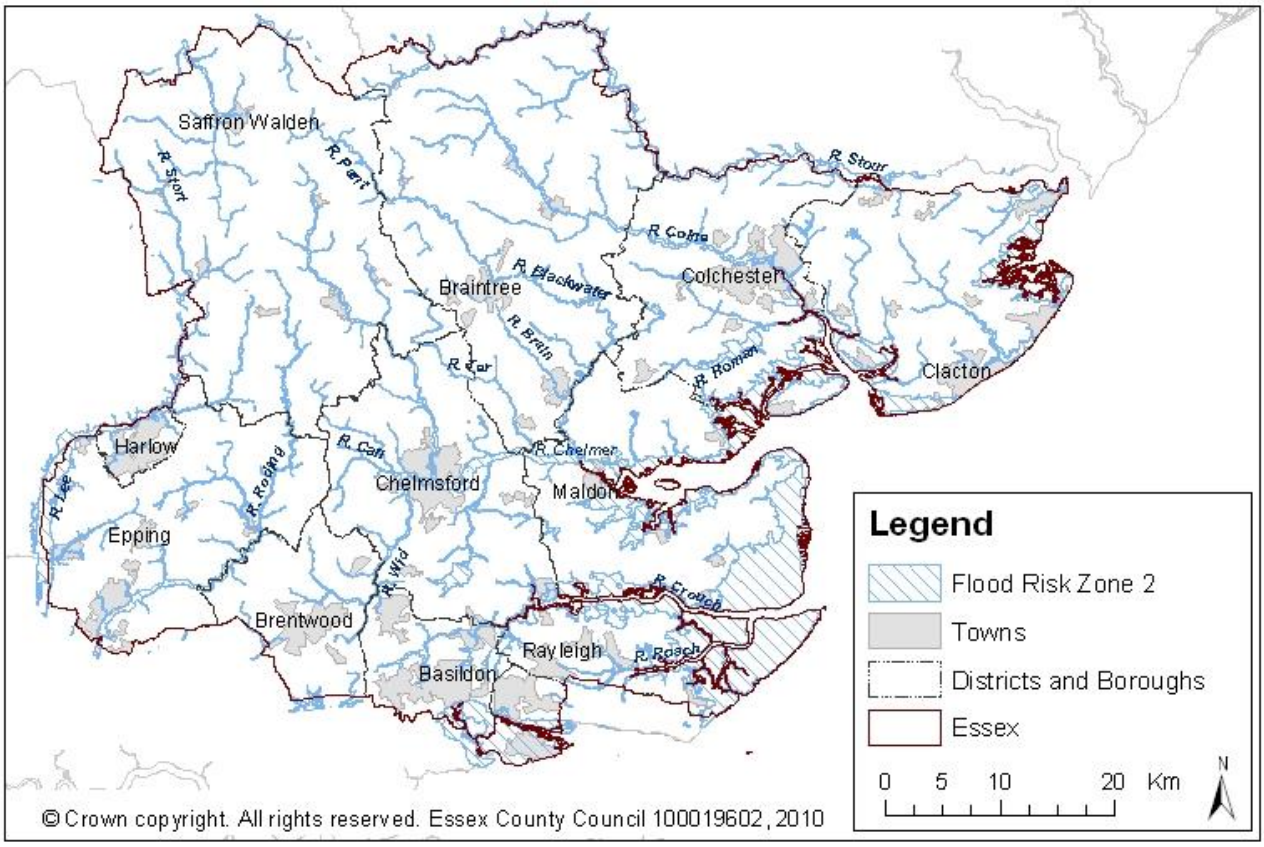
The NPPF requires development to be carried out in areas of as low a risk of flooding as possible. A risk-based sequential test should be applied at all stages of the planning process. The aim is to steer new development to areas with the lowest probability of flooding.

A hierarchy of flood zones for application of the sequential test is defined as:

- Zone 1 - Low Probability: Encompasses land assessed as having a less than 1 in 1000 annual probability of flooding in any year (<0.1%).
- Zone 2 - Medium Probability: Comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% – 0.1%).
- Zone 3a - High Probability: Covers land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) in any year.
- Zone 3b - The Functional Floodplain: This zone consists of land where water has to flow or be stored in times of flood. It is land which would flood with an annual probability of 1 in 20 (5%) or greater in any year.

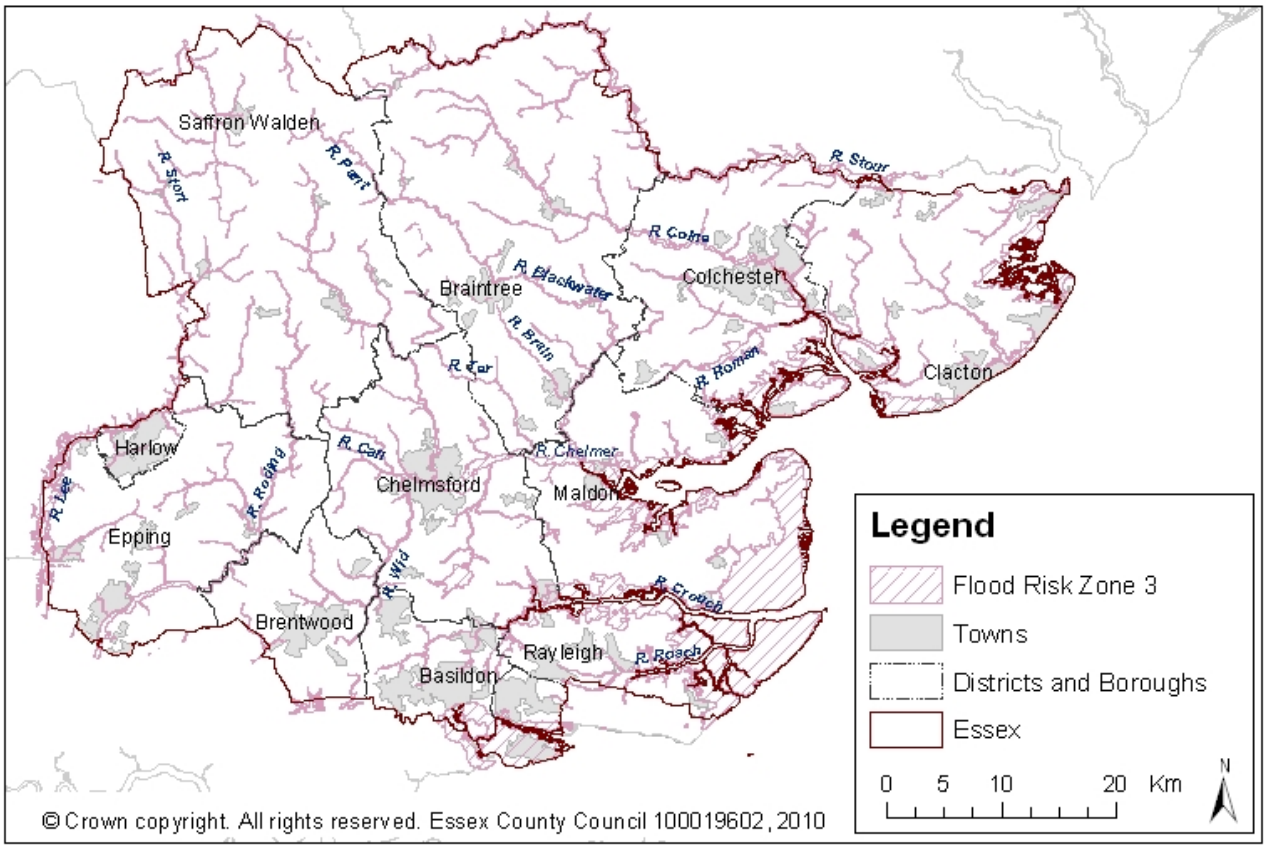
The two figures below show the locations in Essex which are within flood zone 2 and flood zone 3. The Essex coastline is at risk of flooding as well as river floodplains which include the rivers Stour, Colne, Chelmer, Crouch and the Thames estuary. As climate change continues, flood risk is likely to increase.

Figure 20: Flood Risk Zone 2



Source: Essex County Council

Figure 21: Flood Risk Zone 3a

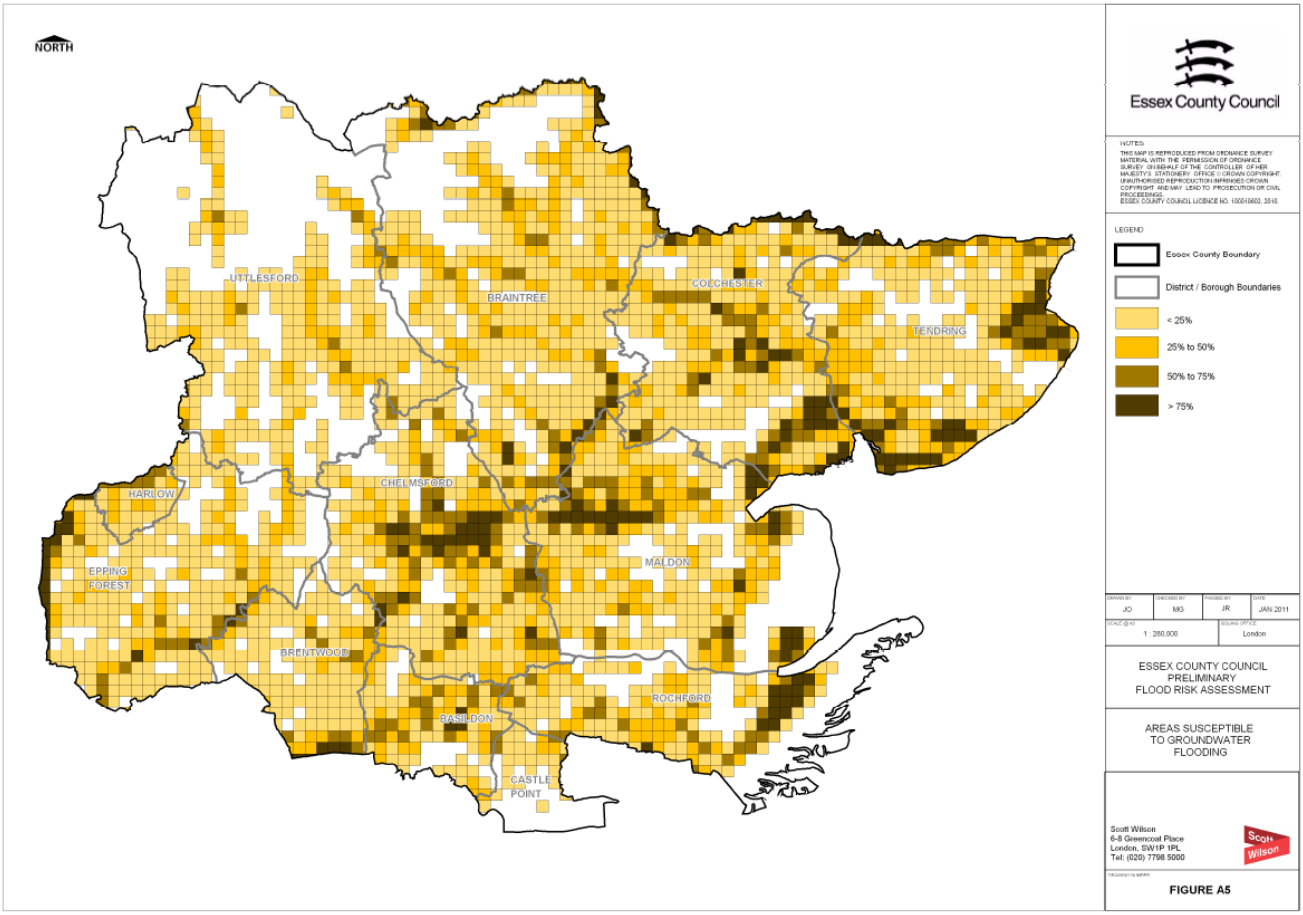


Source: Essex County Council, 2010

2.9.4.3 Groundwater Flood Risk

There is no available information on future groundwater flood risk in Essex however the Environment Agency's dataset for areas susceptible to groundwater flooding is shown in the figure below.

Figure 22: Area Susceptible to Groundwater Flooding



Source: Essex County Council Preliminary Flood Risk Assessment, January 2011

2.10 Air

2.10.1 Introduction

Transport throughout the County is an important issue with regard to associated air quality and vehicle emissions.

2.10.2 Air Quality Management Areas (AQMAs)

Each local authority in the UK has been carrying out reviews and assessments of air quality within their area since December 1997. The aim of reviewing and assessing the information is to ensure that future and current air quality objectives can be achieved by the deadlines set. If a local authority has an area with measurements of air pollution that are unlikely to meet the objectives, an Air Quality Management Area (AQMA) must be declared. The size of this area can vary from a section of one street to a much larger area of the locality. In 2017, 0.6% of Essex's population was recorded living within an AQMA, which was higher than the national average for England at 0.2%.

Air quality in Essex is generally good. The air quality in Essex is influenced by its close proximity to mainland Europe whilst most industrial processes in Essex are concentrated along the Thames Estuary. There are currently 7 AQMAs within Essex.

Table 9: Number of AQMAs within each District/Borough in Essex

Local Authority	Number of AQMAs	Local Authority	Number of AQMAs
Basildon	0	Epping Forest	1
Braintree	0	Harlow	0
Brentwood	3	Maldon	1
Castle Point	0	Rochford	1
Chelmsford	2	Tendring	0
Colchester	3	Uttlesford	1

Table 10: Location of AQMAs within each District/Borough in Essex

Local Authority	AQMA	Pollutant
Brentwood	A12 / Brook Street	NO2
Brentwood	A12 / Warescot Road / Hurstwood Avenue / Ongar Road	NO2
Brentwood	A128 / A1023 (Wilson's Corner)	NO2
Chelmsford	The Army and Navy Roundabout	NO2
Chelmsford	Gay Bowers Lane & Danbury Village Green	NO2
Colchester	Central corridors	NO2
Colchester	East Street and the adjoining lower end of Ipswich Road	NO2
Colchester	Lucy Land North, Stanway	NO2
Epping Forest	Near the B1393 / Theydon Road junction at Epping, Bell Common	NO2
Maldon	Stretch of Market Hill between Anchorage Hill and Bull Lane, Maldon	NO2
Rochford	Rayleigh Weir junction to and encompasses the Rayleigh town centre one-way system	NO2
Uttlesford	Circle of radius 1400m centred on Elm Grove in Saffron Walden Town Centre	NO2

Source: Defra, 2020

All of the AQMAs have been designated due to increased levels of nitrogen dioxide with some also reporting elevated emissions of PM_{10}. This infers that the levels of nitrogen dioxide at these sites exceed the National Air Quality Standard of 200µg.m^{-3} more than 18 times in a single year or that the annual mean target of 40µg/m^{-3} is being exceeded. High

levels of nitrogen dioxide can have adverse effects on human health relating to the respiratory system. PM_{10} emissions at certain sites would have been found to exceed the 40µg/m^{-3} annual target and/or the maximum number of tolerated annual exceedances of the PM_{10} threshold of 50µg/m^{-3}.

2.10.3 Air Quality & Public Health in Essex

Even short-term exposure to high levels of air pollution can cause a wide range of negative health effects – it can trigger asthma, affect lung function, and increases hospital admissions, as well as mortality. In 2017, air pollution levels (as measured by fine particulate matter) for Essex were 9.8%, which was higher than both the regional average (9.7%) and the national average for England (8.9%). In 2018, the fraction of mortality attributable to particulate air pollution for Essex was 5.5%, which was higher than the national average for England at 5.2%. Nitrogen Dioxide appears to be the most common air pollutant in Essex.

Figure 23: Fraction of mortality attributable to particulate air pollution in Essex

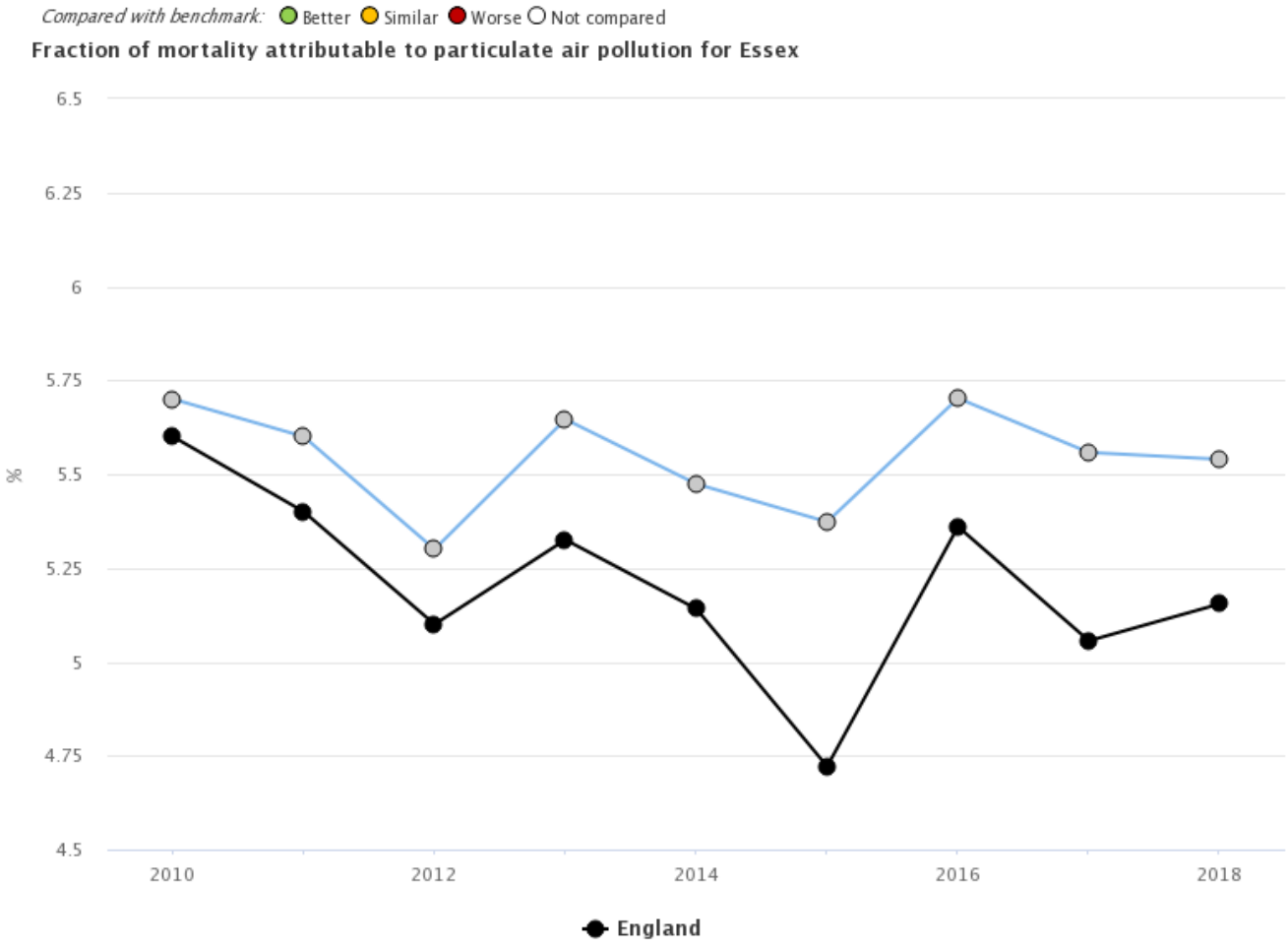
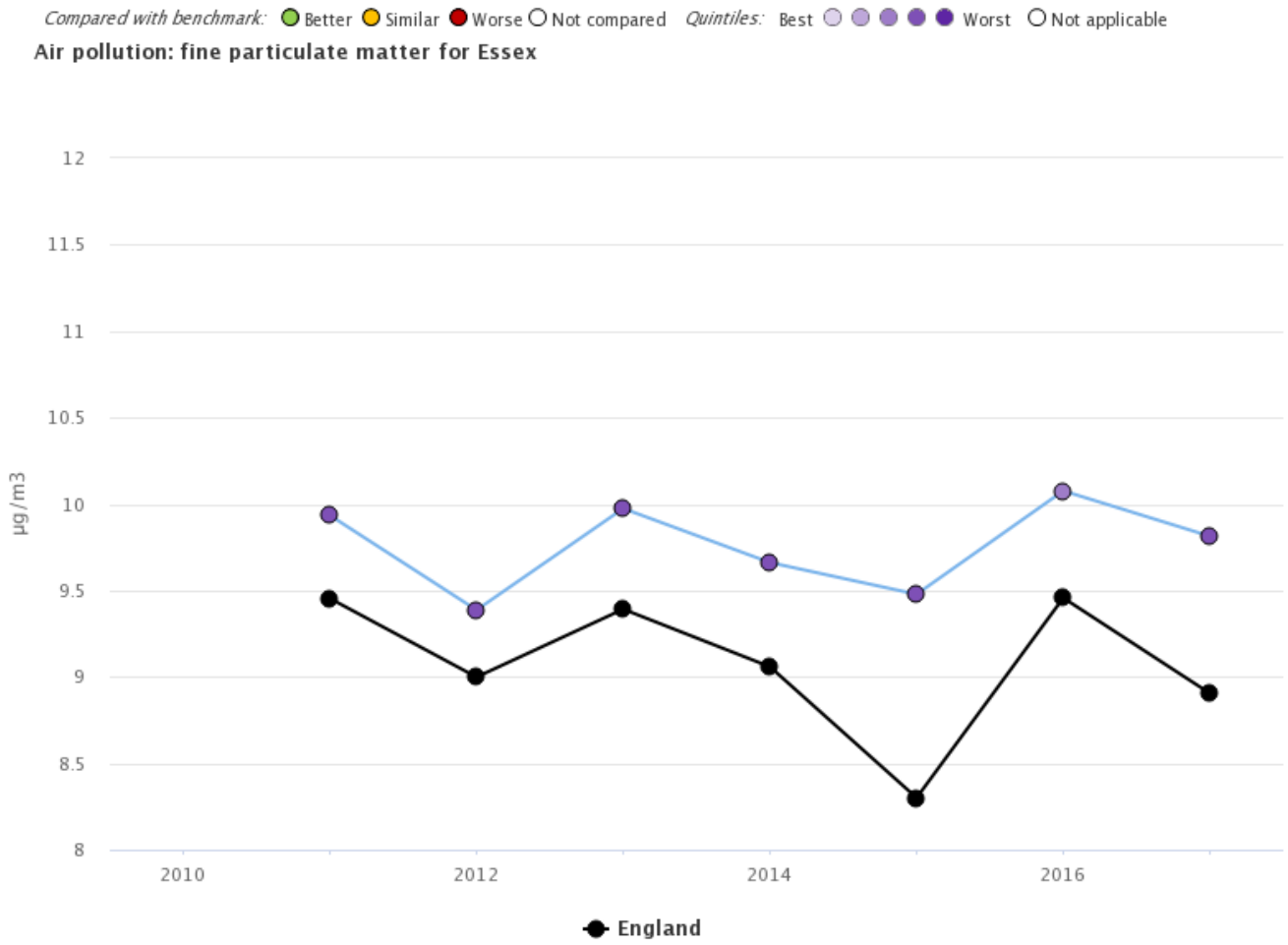


Figure 24: Air Pollution – fine particulate matter for Essex



2.11 Noise

2.11.2 Ambient Noise

Ambient or environmental noise is defined as noise which is either unwanted or harmful. It is created by human activities and includes noise emitted by transport including road, rail and air traffic, as well as from sites of industrial activity. Mapping of ambient noise in England was carried out during 2006-07 in line with the Government's work to implement the EU's Environmental Noise Directive.

Table 11: Summary of Key Terms

Term	Explanation
dB(A)	A unit of sound pressure level, adjusted in accordance with the A waiting scale, a scale which takes into account the increased sensitivity of the human ear at some frequencies
Lden	The day, evening and night level. Lden is a logarithmic composite of the Lday, Levening and Lnight levels but with the 5dB(A) being added to the Levening value and 10dB(A) being added to the Lnight level.
Lnight	The A-weighted average sound level over the 8hour nigh period of 2300-0700 hours.

Source: Descriptions taken from DEFRA, 2008

2.11.3 Exposure to ambient noise generated by transport

Owing to its predominantly rural landscape, Essex is generally less exposed to ambient noise emitted from transport than other regions across England. In 2016, the percentage of Essex's population exposed to road, rail, and air transport noise of 65dB(A) or more, during the daytime was 2.9%, which was lower than the national average for England at 5.5%. In 2016, the percentage of Essex's population exposed to road, rail, and air transport noise of 55dB(A) or more during the night-time was 4.6%, which was also lower than the national average for England at 8.5%.

2.12 Minerals

2.12.1 Introduction

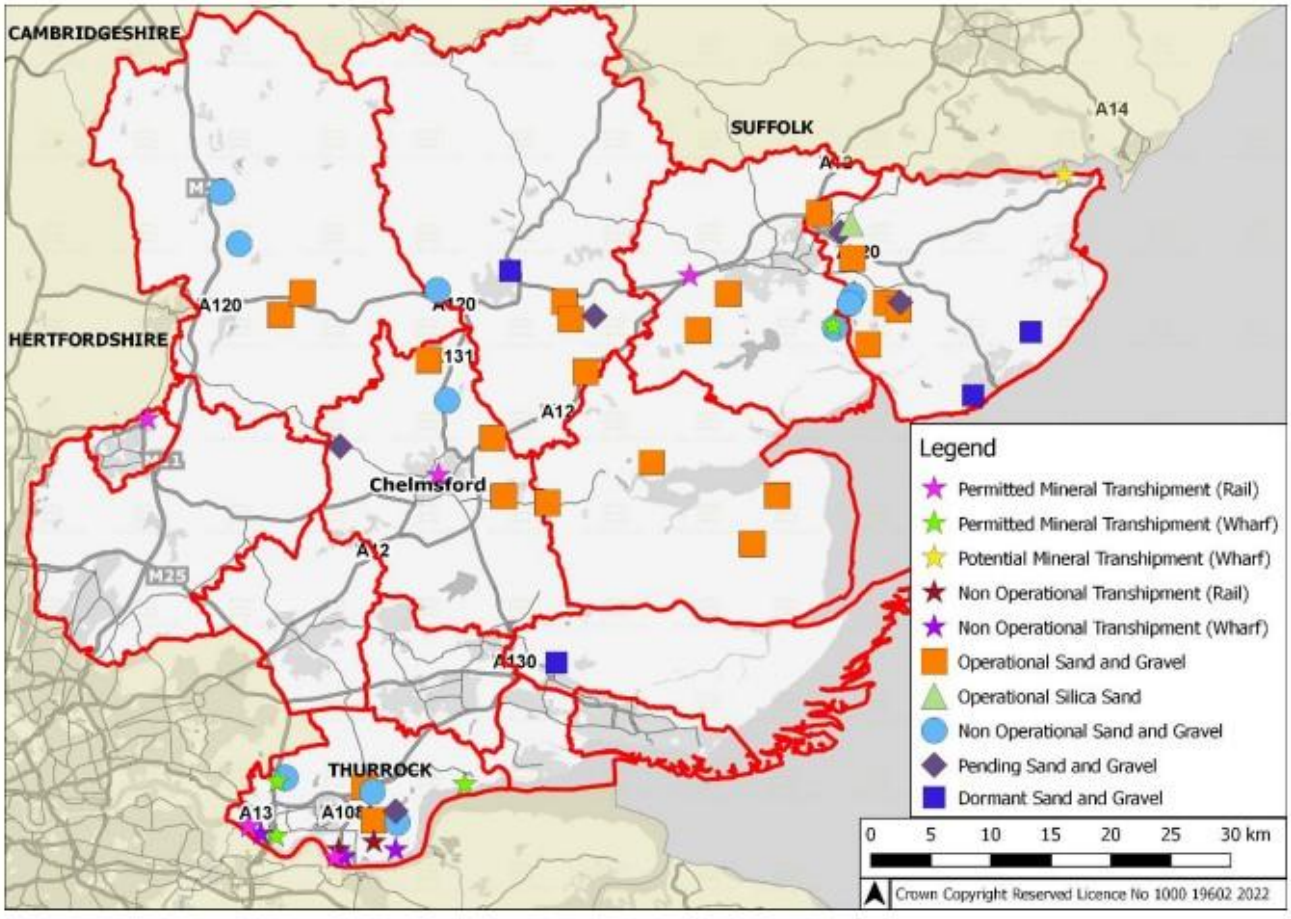
The growth agenda in Essex, combined with the preference for development to take place on previously developed land suggests that indigenous supply of secondary and recycled aggregate is also likely to be significant.

Sand and gravel are by far the most common extracted mineral in the country. Essex is a nationally significant exporter of sand and gravel and is one of the largest producers in the UK. Sand and gravel deposits are largely concentrated in the north of the county and particularly in the districts of Uttlesford, Braintree, Colchester, Tendring and Chelmsford. Sand and gravel deposits are far less abundant in the south of Essex and are less workable. Sand and gravel extracted in Essex is used as a raw material to produce, amongst other things, concrete and asphalt.

Whilst there are many sand and gravel sites throughout Essex, other minerals such as silica sand, brick clay and chalk are extracted at either one or two sites in the county, namely in Colchester, Bulmer and Marks Tey, and Uttlesford respectively.

As of December 2021, there were 22 active sand and gravel quarries across the Greater Essex area, with a further 10 not active (but with permitted reserves) and 5 closed or dormant. The map below identifies all the mineral extraction and transhipment sites within Essex.

Figure 25: Mineral Extraction and Transhipment Sites (31 Dec 2021)



Source: Essex County Council (2022)

2.12.2 Hierarchical Approach

The NPPF requires that a hierarchical approach is employed in considering mineral supply, where the first consideration should be reduction in the quantity of material used and reduction of wastes generated. The second consideration should be to optimise the use of recycled and secondary material, closely associated with CDEW waste management and the third is to secure the remaining required material through primary extraction.

2.12.3 Provision

Responding to the third consideration in the minerals supply hierarchy, extraction will be more prevalent where recyclable aggregate waste arisings are not effectively managed and utilised. Essex is composed of three geological zones; coastal (clays and marshes), mid-Essex (sands, gravels, acidic soil and glacial outwash) and North-Western Essex (chalk). The main materials of economic significance are sands and gravels, of which Essex is one of the largest producers in the country. Brick clay and brick earth is also found as well as chalk (for agriculture or pharmaceutical use), silica (glass, ceramics and water filtration), London

Clay (cement) and crag, although this is not currently extracted in the Plan area.

2.12.4 Movement of Minerals

Minerals are transported in, out and around Greater Essex by three methods – rail, road and water. The road network is the most effective and heavily utilised form of transportation for mineral movement within Greater Essex as relatively short journeys to the local Essex Market are required. Exportation to London is predominantly undertaken by rail. There are also several relevant port and wharf facilities on the coast in Thurrock and navigable sections of inland waterways.

Six active rail and three active wharf transhipment sites operate within the Greater Essex area. These facilities handle the long-distance movement of aggregate. At present there is also some cross-boundary movement of aggregate, however, movement into London is conducted predominantly by rail.

Table 12: Imports of Minerals (2021)

Total tonnage of aggregate imported into Greater Essex	Source of Material	Types of Material
29Mt	Belgium & Norway, East Midlands, Scotland, Southeast England, Southwest England	Limestone, granite & crushed rock

Source: Annual collated mineral survey data.

2.13 Waste

2.13.1 Introduction

Essex currently has existing capacity to manage all types of waste (municipal, commercial, industrial and construction/demolition wastes), including recycling and composting capacity, and inert and non-hazardous landfill void space. However, nearly 50% of household waste in Essex is sent to landfill, with 30% recycled and 20% composted.

A substantial proportion of waste sent to landfill originates from London, and there should be an aim for this to be progressively reduced over time. Southend-on-Sea has a large shortfall in waste management capacity and relies on Essex for much of its waste management needs. There is a requirement to safeguard existing facilities to ensure the capacity gap does not grow and to ensure a larger proportion of waste is managed through recycling, composting and recovery methods in the future.

2.13.2 Existing Waste Facilities

In total since the adoption of the Waste local Plan (2017) there have been 13 applications granted on allocated sites (Policy 3) and a further 2 sites granted on Areas of Search (Policy 4). Most of these applications (Including both of the areas of search) were for time extensions to existing capacity or alterations to sites and did not yield additional waste management capacity to Essex.

Figure 26: Waste Facilities Applications from 2017/18

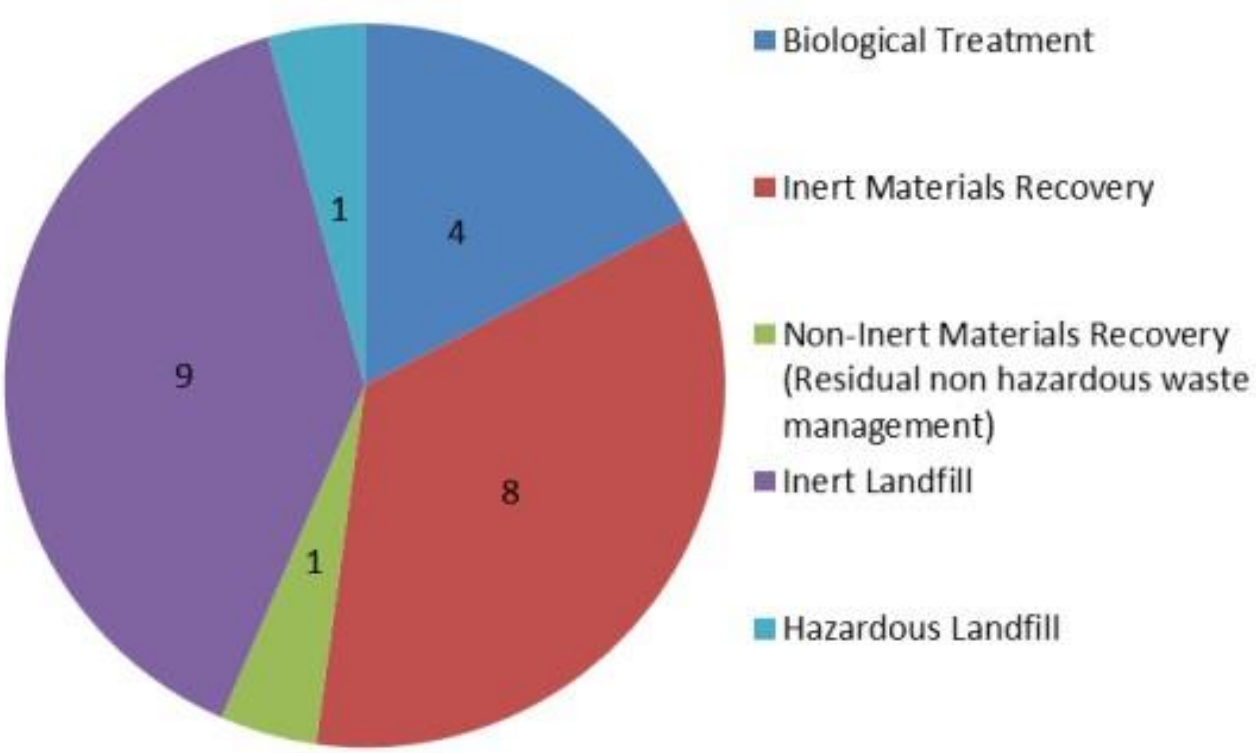
Year	Number of Applications Granted on Allocated Sites	Number of Applications Granted in Areas of Search
2017/18	4	0
2018/19	2	0
2019/20	4	2
2020/21	3	0
TOTAL	13	2

Source: Essex Authority Monitoring Report (2023)

The WLP contains a total of 23 strategic site allocations for a variety of waste management

needs.

Table 13: Strategic Site Allocations by Facility Type



Source: Essex Authority Monitoring Report (2023)

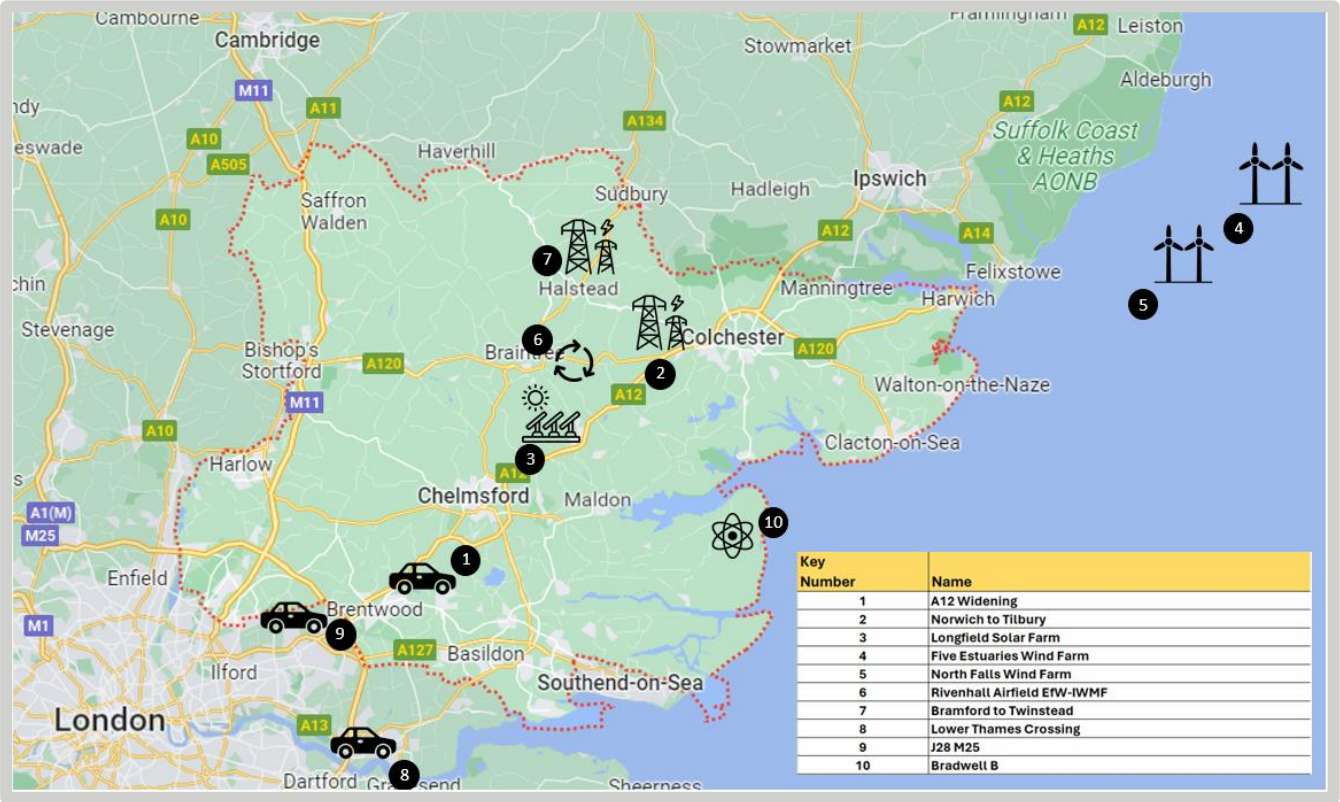
2.14 Nationally Significant Infrastructure Projects (NSIPs)

The emergence of numerous Nationally Significant Infrastructure Projects (NSIPs) and major infrastructure schemes in Essex is significant and increasing. These include multiple schemes to reinforce and improve the electricity transmission network in the region, as well as solar and wind farms.

Many NSIPs are associated with 'The Great Grid Upgrade'; a key element in the plans to achieve net zero carbon emissions by 2025. The need emanates from growth around London and the Southeast together with new energy generation from offshore wind, nuclear power and interconnection with other countries, meaning the high voltage electricity network in East Anglia does not currently have sufficient capacity to accommodate this level of demand and generation. Over the next 10 years, it is expected that 15,000 MW of new generation and 4,500 MW of new interconnection will be needed.

The graphic below shows the extent of NSIPs within Essex.

Figure 27: NSIPs in Essex



Source: Essex County Council 2024

3. Annex B - Contextual Review

3.1 Introduction

The LTP should have regard to existing policies, plans and programmes at national and regional levels and strengthen and support other plans and strategies. It is therefore important to identify and review those policies, plans and programmes which are likely to influence the Plan. The content of these plans and programmes can also assist in the identification of any conflicting content of plans and programmes in accumulation with the Plan. Local supporting documents have also been included within this list as they will significantly shape policies and decisions in the area.

It is recognised that no list of plans or programmes can be definitive and as a result this document describes only the key documents which influence the Plan. The table below outlines the key documents, whilst a comprehensive description of these documents together with their relevance to the Plan is provided within the following sub-sections.

Table 14: Relevant plans, policies, and programmes

International Plans and Programmes
European Landscape Convention (Florence, 2002)
European Union Water Framework Directive 2000
European Union Nitrates Directive 1991
European Union Noise Directive 2002
European Union Floods Directive 2007
European Union Air Quality Directive 2008 (2008/50/EC) and previous directives (96/62/EC; 99/30/EC; 2000/69/EC & 2002/3/EC)
European Union Directive on the Conservation of Wild Birds 2009
European Union Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora 1992
European Community Biodiversity Strategy to 2020
United Nations Kyoto Protocol

World Commission on Environment and Development ‘Our Common Future’ 1987
The World Summit on Sustainable Development Johannesburg Summit 2002
Environmental Assessment of Plans and Programmes Regulations 2004 (the SEA Regulations)
The Conservation of Habitats and Species Regulations, 2010
The Industrial Emissions Directive 2010
European Convention on the Protection of the Archaeological Heritage (Valletta, 1992)
National Plans and Programmes
The Conservation of Habitats and Species Regulations, 2017 (as amended)
Safeguarding our Soils: A Strategy for England (Defra, 2009)
National Planning Policy for Waste (NPPW, 2014)
National and Regional Guidelines for Aggregates Provision in England 2005 – 2020 (2009)
The Countryside and Rights of Way (CRoW) Act, 2000
Model Procedures for the Management of Land Contamination – Contaminated Land Report 11 (September 2004)
Water Resources Strategy for England and Wales, 2009
Flood and Water Management Act, 2010
Underground, Under Threat – Groundwater protection: policy and practice (GP3)
Planning (Listed Buildings and Conservation Areas) Act, 1990
Ancient Monuments & Archaeological Areas Act 1979
The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, 2007

(National) Planning Practice Guidance (updated)
National Planning Policy Framework
County / Regional Plans and Programmes
Essex Minerals Local Plan (including Inspector's Report) (2014)
Essex and Southend-on-Sea Waste Local Plan (2017)
Local Level Plans and Programmes
Basildon Borough Council Revised Publication Local Plan 2014-2034 (withdrawn)
Braintree District Local Plan 2033 (Section 1 and 2) (2022)
Brentwood Local Plan 2016-2033 (2022)
Castle Point Local Plan (emerging)
Chelmsford Local Plan 2013-2036 (2020) and Issues and Options Consultation Document (plan review) (2022)
Colchester Local Plan 2017-2033 (Section 1 and 2) (2021)
Epping Forest District Local Plan 2011 to 2033 (2023)
Harlow Local Development Plan (2020)
Maldon District Council Local Development Plan (2014-2029) (2017) and Local Development Plan Review 2021+
Rochford District Council Local Plan (2025-2040) (emerging)
Tendring District Council Local Plan 2013-2033 and Beyond (Section 1 and 2) (2022)
Uttlesford Local Plan 2021 to 2041 Regulation 18 (2023)
Southend-on-Sea New Local Plan Refining the Plan Options (2021)
Thurrock Local Plan Initial Proposals (2023) (emerging)

3.2 International Plans & Programmes

Table 19: Contextual Review of International Plans and Programmes

International Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
European Landscape Convention 2002	The aims of this Convention are to promote landscape protection, management and planning, and to organise European co-operation on landscape issues.	In order to co-operate on matters concerning landscape conservation and protection, the Plan may will need to adhere to this policy to inform practices and avoid substantial harm to protected landscapes.
European Union Water Framework Directive 2000	The framework amalgamates multiple directives into one to provide the operational tool for water treatment, setting the objectives for water protection for the future. Directives included in the framework are: - the Urban Waste Water Treatment Directive, providing for secondary (biological) waste water treatment, and even more stringent treatment where necessary - the Nitrates Directive, addressing water pollution by nitrates from agriculture - a new Drinking Water Directive, reviewing the quality standards and, where necessary, tightening them (adopted November 1998) - a Directive for Integrated Pollution and Prevention Control (IPPC), adopted in 1996, addressing pollution from large industrial	The Plan may need to consider waste water provisions and considerations for the EU water framework to align with the approach defined in the directive. Complying with all aspects and directives ensures that the Plan will not have a detrimental effect on water courses in the Plan area.

International Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
	installations.	
European Union Nitrates Directive 1991	The Nitrates Directive (1991) aims to protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices.	The Plan may need to include Nitrate retention provisions to align with the approach defined in the directive.
European Union Noise Directive 2002	The aim of this Directive shall be to define a common approach intended to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. To that end the following actions shall be implemented progressively: - the determination of exposure to environmental noise, through noise mapping, by methods of assessment common to the Member States; - ensuring that information on environmental noise and its effects is made available to the public; - adoption of action plans by the Member States, based upon noise-mapping results, with a view to preventing and reducing environmental noise where necessary and particularly where exposure levels can induce harmful effects on human health and to preserving environmental noise quality where it is good. This Directive shall also aim at providing a basis for developing Community measures to reduce noise emitted by the major sources, in particular road and rail vehicles and infrastructure, aircraft, outdoor and	The Plan may need to consider this strategy to noise pollution when formulating policy for the Plan area.

International Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
	industrial equipment and mobile machinery.	
European Union Floods Directive 2007	The purpose of this Directive is to establish a framework for the assessment and management of flood risks, aiming at the reduction of the adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods in the Community.	Flood risk policy should be informed by the approach within the EU Floods Directive in order to align with European practices for flood prevention and management.
European Union Air Quality Directive 2008 (2008/50/EC) and previous directives (96/62/EC; 99/30/EC; 2000/69/EC & 2002/3/EC)	Council Directive 96/62/EC on ambient air quality assessment and management. Council Directive 1999/30/EC relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air. Directive 2000/69/EC of the European Parliament and of the Council relating to limit values for benzene and carbon monoxide in ambient air. Directive 2002/3/EC of the European Parliament and of the Council relating to ozone in ambient air. This new Directive includes the following key elements: - that most of existing legislation be merged into a single directive (except for the fourth daughter directive) with no change to existing air quality objectives* - New air quality objectives for PM2.5 (fine particles) including the limit value and exposure related objectives – exposure concentration obligation and exposure reduction	Air quality management principles relating to the range of pollutant gases outlines within the EU Air Quality Directive are a required consideration for the Plan to counteract emissions within the Plan area. The Plan may need to adopt mitigation approaches to minimise the impact of operations, increased energy consumption and road usage in the locality.

International Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
	target - the possibility to discount natural sources of pollution when assessing compliance against limit values - possibility for time extensions of three years (PM10) or up to five years (NO2, benzene) for complying with limit values, based on conditions and the assessment by the European Commission. * Framework Directive 96/62/EC, 1-3 daughter Directives 1999/30/EC, 2000/69/EC, 2002/3/EC, and Decision on Exchange of Information 97/101/EC.	
European Union Directive on the Conservation of Wild Birds 2009	This Directive relates to the conservation of all species of naturally occurring birds in the wild state in the European territory of the Member States to which the Treaty applies. It covers the protection, management and control of these species and lays down rules for their exploitation. It shall apply to birds, their eggs, nests and habitats.	Conservation of bird species must be incorporated in ecological considerations at the Plan level. The Plan, in accordance with this EU directive, should evaluate the impact on bird habitats through a Habitats Regulations Assessment.
European Union Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora 1992	The aim of this Directive shall be to contribute towards ensuring bio-diversity through the conservation of natural habitats and of wild fauna and flora in the European territory of the Member States to which the Treaty applies.	Conservation of habitats must be incorporated in ecological considerations at the Plan level. The Plan, in accordance with this EU directive, should evaluate the impact on bird habitats through a Habitats Regulations

International Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
		Assessment.
European Union Biodiversity Strategy to 2020	This strategy aims to conserve biodiversity within Europe in an attempt to achieve the following target and vision: 2020 headline target Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss. 2050 vision By 2050, European Union biodiversity and the ecosystem services it provides — its natural capital — are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided.	The Plan should consider the impact of operations and the Plan as a whole on the environment and biodiversity.
United Nations Kyoto Protocol	This protocol aims to Implement and/or further elaborate policies and measures for member states in accordance with its national circumstances, such as: - Enhancement of energy efficiency in relevant sectors of the national economy; - Protection and enhancement of sinks and reservoirs of greenhouse gases not controlled by the Montreal Protocol, taking into account its commitments under relevant international environmental agreements; promotion of	The Plan should attempt to ensure a low carbon and low emissions ethos. Policy that accommodates new technologies, techniques or materials should be considered in the Plan where appropriate.

International Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
	sustainable forest management practices, afforestation and reforestation; - Promotion of sustainable forms of agriculture in light of climate change considerations; - Research on, and promotion, development and increased use of, new and renewable forms of energy, of carbon dioxide sequestration technologies and of advanced and innovative environmentally sound technologies; - Progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all greenhouse gas emitting sectors that run counter to the objective of the Convention and application of market instruments; - Encouragement of appropriate reforms in relevant sectors aimed at promoting policies and measures which limit or reduce emissions of greenhouse gases not controlled by the Montreal Protocol; - Measures to limit and/or reduce emissions of greenhouse gases not controlled by the Montreal Protocol in the transport sector; - Limitation and/or reduction of methane emissions through recovery and use in waste management, as well as in the production, transport and distribution of energy	

International Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
World Commission on Environment and Development 'Our Common Future' 1987	This report aims are: - to propose long-term environmental strategies for achieving sustainable development by the year 2000 and beyond; to recommend ways concern for the environment may be translated into greater co-operation among developing countries and between countries at different stages of economic and social development and lead to the achievement of common and mutually supportive objectives that take account of the interrelationships between people, resources, environment, and development; - to consider ways and means by which the international community can deal more effectively with environment concerns; and - to help define shared perceptions of long-term environmental issues and the appropriate efforts needed to deal successfully with the problems of protecting and enhancing the environment, a long-term agenda for action during the coming decades, and aspirational goals for the world community.	The Plan should seek to minimise environmental impacts through policy to promote more efficient and carbon neutral techniques.
The World Summit on Sustainable Development Johannesburg Summit 2002	The Summit sought to address social, environmental and economic with particular focus on the issues facing some of the most deprived people across the world. It aimed to: - halve the proportion of the world's population that lives on less than $1	Issues surrounding climate change and renewable energy have significant implications for the Plan area. The Plan should strive to ensure low carbon outcomes and reduce environmental

International Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
	a day; - halve the number of people living without safe drinking water or basic sanitation; and - reduce mortality rates for infants and children under five by two thirds, and maternal mortality by three quarters; Other provisions address a comprehensive range of environmental and development issues, such as climate change, energy, agriculture, trade, African development, and small island States. The Implementation Plan calls for a substantial increase in use of renewable sources of energy "with a sense of urgency". Although it sets no specific targets; implementation of a new global system for classification and labelling of chemicals was discussed in an attempt to restore depleted fish stocks.	degradation through responsible practices.
Environmental Assessment of Plans and Programmes Regulations (SEA Regulations)	These regulations transpose the requirements of the SEA Directive (2001/42/EC) into national law. The SEA Directive sets out the requirement for an environmental assessment to be undertaken when preparing certain plans and programmes and also details which types of plans and programmes are likely to be subject to SEA. The regulations also set out procedures for preparing the environmental report and consultation.	By assessing impacts of Policy within the plan area and beyond, and investigating alternative approaches, development can meet the needs of the Plan area while also positively impacting on the economy, society and environment where possible.
The Conservation of Habitats and	These regulations transpose the Habitats Directive into national law, and updates and consolidates all the amendments to	The Plan must ensure the protection of sites of European

International Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
Species Regulations, 2010	the Regulations since they were first made in 1994. They set out protection and registry of European sites, including SACs and SPAs classified under the Birds Directive. They also make special provisions for the protection of European marine sites and the preservation of protected species.	Significance in relation to their flora and fauna and enter into the agreement that compensatory measures will be required where damage may occur through development.
The Industrial Emissions Directive 2010	The EU's Industrial Emissions Directive (IED) takes an integrated approach to controlling pollution to air, water and land, and sets challenging industry standards for the most polluting industries. The IED aims to prevent and reduce harmful industrial emissions, while promoting the use of techniques that reduce pollutant emissions and that are energy and resource efficient. Larger industrial facilities undertaking specific types of activity are required to use BAT to reduce emissions to air, water and land. BAT means the available techniques which are the best for preventing or minimising emissions and impacts on the environment. 'Techniques' include both the technology used and the way the installation is designed, built, maintained, operated and decommissioned. BAT reference documents (BREFs) include BAT Conclusions that contain emission limits associated with BAT, which must not be exceeded unless agreed by the relevant competent authority.	Transport related development may give rise to industrial emissions. The UK is committed to maintaining environmental standards and continues to apply the existing successful model of integrated pollution control. The EU Withdrawal Act 2018 maintains established environmental principles and ensures that existing EU environmental law will continue to have effect in UK law, including the IED and BAT Conclusion Implementing Decision made under it.
European Convention on the Protection of the	Aims to protect archaeological heritage as a source of European interest and also for historical or scientific study.	The Plan should take into account historically important landscape features and protect

International Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
Archaeological Heritage (Valletta, 1992)		these from any negative impacts of new transport infrastructure.

3.3 National Plans & Programmes

Table 20: Contextual Review of National Plans and Programmes

National Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
The Conservation of Habitats and Species Regulations (2017 (as emended, 2019)	These regulations transpose the Habitats Directive into national law, and updates and consolidates all the amendments to the Regulations since they were first made in 1994. They set out protection and registry of European sites, including SACs and SPAs classified under the Birds Directive. They also make special provisions for the protection of European marine sites and the protection of protected species.	The Plan must ensure the protection of sites of European Significance in relation to their flora and fauna and enter into the agreement that compensatory measures will be required where damage may occur through any transport related development.
Safeguarding Our Soils: A Strategy for England (2009)	By 2030, the strategy aims to have all of England's soils to be managed sustainably and degradation threats tackled successfully. This will improve the quality of England's soils and safeguard their ability to provide essential services for future generations: - agricultural soils will be better managed and threats to them will be addressed; - soils will play a greater role in the fight against climate change and in	Soil quality has a key role in water quality, climate change issues and the historic legacy and health of the environment. The Plan should attempt to retain and protect soil quality.

National Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
	helping us to manage its impacts; - soils in urban areas will be valued during development, and construction practices will ensure vital soil functions can be maintained; - pollution of our soils is prevented, and our historic legacy of contaminated land is being dealt with.	
Countryside and Rights of Way Act 2000	Further information on Rights of Way in relation to nature conservation with wildlife protection, SSSIs and biological diversity amongst other elements of the environment, including regulations to restrict the impacts of vehicles on the environment.	The Plan should seek the protection of these designations and non-designated elements of the environment through policy.
Model Procedures for the Management of Land Contamination – Contaminated Land Report 11	The Model Procedures for the Management of Land Contamination provides the technical framework for structured decision making about land contamination. They encourage the formalisation of outputs from the process in the form of written records that contain details of specific project objectives, decisions and assumptions, as well as recommendations and other specific outputs. The Model Procedures have been developed to provide the technical framework for applying a risk management process when dealing with land affected by contamination. The process involves identifying, making decisions on, and taking appropriate action to deal with land contamination in a way that is consistent with government policies and legislation within the UK.	Contaminated land can affect policy where it may present a risk to a range of receptors including humans, ecosystems, water quality, and property. The Plan may need to incorporate best practice principles provided by the Model Procedures to prevent contamination.

National Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
	The technical approach presented in the Model Procedures is designed to be applicable to a range of non-regulatory and regulatory contexts that includes: - Development or redevelopment of land under the planning regime - Regulatory intervention under Part IIA of the Environment Protection Act 1990 or Part III of the Waste & Contaminated Land (Northern Ireland) Order 1997 - Voluntary investigation and remediation - Managing potential liabilities of those responsible for individual sites or a portfolio of sites	
Water Resources Strategy for England and Wales, 2009	Establishes how water resources should be managed to 2050 and beyond to ensure that there will be enough water for people and the environment.	Plan policies should support the Water Resources Strategy. It is important to ensure that the requirements of the Strategy are reflected in the ISA framework.
Flood and Water Management Act, 2010	The Act, which applies to England & Wales, aims to create a simpler and more effective means of managing the risk of flood and coastal erosion. The Act also aims to help improve the sustainability of our water resources and protect against potential droughts. The Act has a significant component which addresses groundwater flooding.	There is a need to give due consideration to the aims of this Act in devising the ISA framework.
Underground, Under Threat - Groundwater	This document sets out the Environment Agency's (EA) aims and objectives for groundwater, their technical approach to its	Land use planning can have negative impacts on groundwaters.

National Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
protection: policy and practice (GP3)	management and protection, the tools they use to do their work and the main policies and approach to the application of legislation. The main aims are: - To encourage co-operation between the EA and other bodies with statutory responsibilities for the protection of groundwater; - To promote policies, so that land-users and potential developers may anticipate how the EA are likely to respond to a proposal or activity; - To influence the decisions of other organisations on issues the EA are concerned about but which they do not regulate; - To ensure that groundwater protection and management are consistent with EA's Vision for the environment and a sustainable future; and - To provide vital information and background on groundwater protection in England and Wales.	Groundwaters may have to be a consideration in Plan policy.
Planning (Listed Buildings and Conservation Areas) Act, 1990	The Planning (Listed Buildings and Conservation Areas) Act is a UK Act of Parliament introduced in 1990 that changed laws relating to the granting of planning permission for building works, with a particular focus on listed buildings and conservation areas. It created special controls for the demolition, alteration or extension of buildings, objects or structures of particular architectural or historic interest, as well as conservation areas. Buildings may be listed for a number of reasons:	Provides guidance on the preparation of Plan requirements and accompanying ISA.

National Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
	- Architectural interest (such as design, decoration or craftsmanship). - Historic interest (for example, if the building is representative of a particular type). - Historic association (association with nationally important people or events). - Group value (part of a larger ensemble).	
Ancient Monuments & Archaeological Areas Act 1979	The Ancient Monuments and Archaeological Areas Act 1979 or AMAAA is a law passed by the UK government, legislating to protect the archaeological heritage of England & Wales and Scotland. Section 61(12) defines sites that warrant protection due to their being of national importance as 'ancient monuments'. These can be either scheduled monuments or "any other monument which in the opinion of the Secretary of State is of public interest by reason of the historic, architectural, traditional, artistic or archaeological interest attaching to it".	Provides guidance on the preparation of Plan requirements and accompanying ISA.
The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)	This Air Quality Strategy sets out air quality objectives and policy options to further improve air quality in the UK from today into the long term. As well as direct benefits to public health, these options are intended to provide important benefits to quality of life and help to protect our environment.	Air quality requires protection from the strain of further development and vehicles producing pollutants. Considerations for air quality should be present within the Plan, with reduction and mitigation measures present where

National Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
		necessary.
(National) Planning Practice Guidance	This web-based resource provides guidance to support the National Planning Policy Framework and its application in practice. It is also easy to link easily between the National Planning Policy Framework and relevant planning practice guidance, as well as between different categories of guidance.	Provides guidance on the preparation of Plan requirements and accompanying ISA.
National Planning Policy Framework (2024)	This framework sets out the Government's planning policies for England and how these are expected to be applied. It replaces all Planning Policy Statements and Planning Policy Guidance. The framework seeks to contribute to the achievement of sustainable development by pursuing economic, environmental and social gains jointly and simultaneously through the planning system. It defines planning as having: - an economic role – contributing to building a strong, responsive and competitive economy; - a social role – supporting strong, vibrant and healthy communities; and - an environmental role – contributing to protecting and enhancing our natural, built and historic environment. The framework sets out 12 core land-use planning principles that Neighbourhood Planning authorities should follow and provides guidance on preparing Local and Neighbourhood Plans and on determining planning applications.	The Plan must be in conformity with this national planning document in order to ensure development is approached sustainably. Therefore, the Plan should be consistent with the principles and policies set out in this Framework.

National Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
	The framework also describes the role of planning in delivering sustainable development under 14 themes. These are: - Building a strong, competitive economy - Ensuring the vitality of town centres - Supporting a prosperous rural economy - Promoting sustainable transport - Supporting high quality communications infrastructure - Delivering a wide choice of high-quality homes - Requiring good design - Promoting healthy communities - Protecting Green Belt land - Meeting the challenge of climate change, flooding and coastal change - Conserving and enhancing the natural environment - Conserving and enhancing the historic environment - Facilitating the sustainable use of minerals A key part of the NPPF is the presumption in favour of sustainable development which is relevant to both plan making and decision making.	

3.4 County / Regional Plans & Programmes

Table 21: Contextual Review of County / Regional Plans and Programmes

County / Regional Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to the Plan / SA
Essex Minerals Local Plan (including Inspector's Report) (2014) and emerging	Adopted in July 2014, the Plan provides planning policies for minerals development in Essex until 2029 and identifies future sites for mineral development. The Plan includes ways to reduce reliance on primary mineral resources in Essex. This includes the use of recycled aggregates. The Essex Minerals Local Plan includes: - the Minerals Core Strategy, which sets out the long-term direction for minerals development and a plan to deliver this; - development management policies for minerals planning; - strategic site allocations and safeguarding for mineral extraction; and - a Policies Map, showing site locations	The Plan and ISA should be aware of the commitments and proposals within this Plan, particularly in regard to any possible cumulative or in-combination effects.
Essex and Southend-on-Sea Waste Local Plan (2017)	The Essex and Southend-on-Sea Waste Local Plan 2017 privies the planning policy framework for the determination of waste related planning decisions. Essex County Council adopted the plan on 11 July 2017 and Southend-on-Sea Borough Council on 19 October 2017. The plan sets out how Essex and Southend-on-Sea aim to manage waste for the duration of the plan period. It also seeks to deal with waste more sustainably,	The Plan and ISA should be aware of the commitments and proposals within this Plan, particularly in regard to any possible cumulative or in-combination effects.

County / Regional Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to the Plan / SA
	encouraging recycling and reducing reliance on landfill. The Essex and Southend-on-Sea Waste Local Plan includes: - the Waste Core Strategy, which sets out the long-term direction for waste development and a plan for delivery; - development management policies for waste planning; - strategic site allocations and safeguarding of waste infrastructure; and - a Policies Map, showing new site allocations.	
South Essex Green and Blue Infrastructure Plan	In order to meet future growth requirements, the LPAs of South Essex are working towards a Joint Strategic Plan. The Green and Blue Infrastructure Study will address ecological, economic, and social themes, in regard to healthier communities, sustainable travel, and high-quality open spaces, while also protecting habitats and natural processes.	LTP4 schemes and planned activities have the potential to harm or contribute to this infrastructure plan and seek improvements to Green and Blue Infrastructure in Essex.
Essex Green Infrastructure Strategy	The Green Infrastructure Strategy describes the need for green infrastructure in the county and sets a vision and objectives for its delivery. A carefully planned Green Infrastructure network is crucial for the environment, our health and well-being and will help support a thriving, sustainable economy. Green Infrastructure provides recreation with opportunities to encourage people to be physically active and connects people to nature. It provides and creates green corridors for our wildlife thereby making our biodiversity more	LTP4 schemes and planned activities have the potential to harm or contribute to this infrastructure plan and seek improvements to Green and Blue Infrastructure in Essex.

County / Regional Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to the Plan / SA
	robust, particularly in the face of the challenges presented by Climate Change. It can alleviate flooding and improve air quality.	
The South East Inshore Marine Plan (2021)	Marine aggregate extraction corresponds to half of all aggregates used in construction in London being from marine sources. Therefore, protecting landing facilities, and identifying the difference in safeguarding is a key objective of this emerging plan, which seeks to expand terrestrial legislation to the marine and encourages the continuation and development at these vital landing facilities.	LTP4 policy should be in conformity to those objectives of the Draft Inshore Marine Plan.

3.5 District-level Plans & Programmes

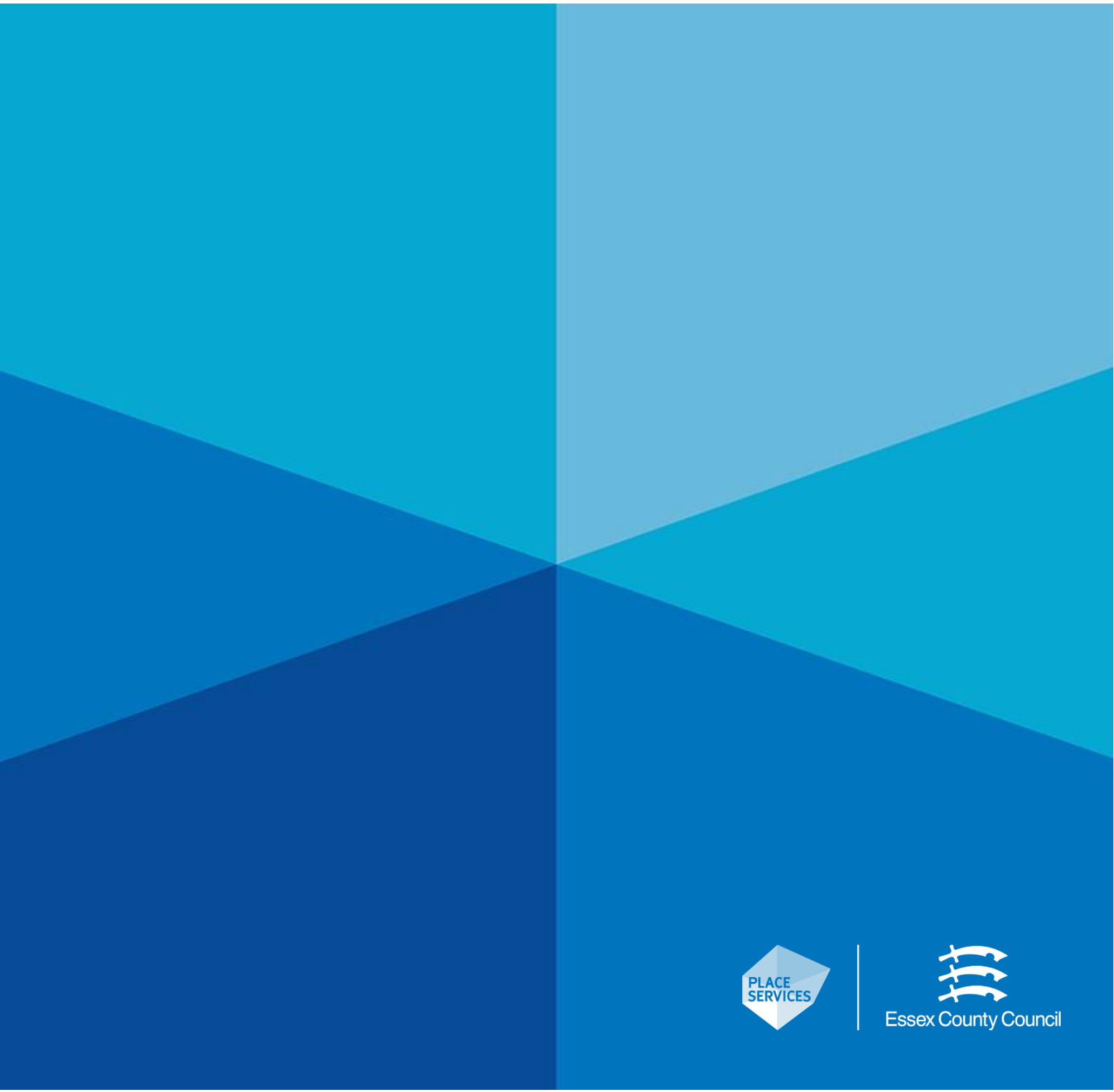
Table 22: Contextual Review of District Level Plans and Programmes

District Level Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
Basildon Borough Council Revised Publication Local Plan 2014-2034 (withdrawn)	The withdrawn Plan set housing need at 20,160 dwellings (16,792 dwellings outstanding as of April 2021) by 2034.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.
Braintree District Local Plan 2033 (Section 1 and 2)	The adopted Plan sets housing need at 14,320 dwellings (10,159 dwellings	Understanding the implications of growth over Local Plan period

District Level Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
(2022)	outstanding as of April 2021) by 2033.	(between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.
Brentwood Local Plan 2016-2033 (2022)	The adopted Plan sets housing need at 7,752 dwellings (6,775 dwellings outstanding as of April 2021) by 2033.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.
Castle Point Local Plan (emerging)	The previous withdrawn Plan set housing need at 5,325 dwellings (4,888 dwellings outstanding as of April 2021) by 2033.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.
Chelmsford Local Plan 2013-2036 (2020) and Issues and Options Consultation Document (plan review) (2022)	The Plan sets housing need at 21,843 dwellings (14,828 dwellings outstanding as of April 2021) by 2036.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.
Colchester Local Plan 2017-2033 (Section 1 and 2) (2021)	The Plan sets housing need at 18,400 dwellings (10,593 dwellings outstanding as of April 2021) by 2033.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.

District Level Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
Epping Forest District Local Plan 2011 to 2033 (2023)	The adopted Plan sets housing need at 11,400 dwellings (8,705 dwellings outstanding as of April 2021) by 2033.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.
Harlow Local Development Plan (2020)	The adopted Plan sets housing need at 9,200 dwellings (5,547 dwellings outstanding as of April 2021) by 2033.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.
Maldon District Council Local Development Plan (2014-2029) (2017) and Local Development Plan Review 2021+	The adopted Plan sets housing need at 4,650 dwellings (2,748 dwellings outstanding as of April 2021) by 2029.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.
Rochford District Council Local Plan (2025-2040) (emerging)	The emerging Plan sets housing need at 7,200 dwellings (6,851 dwellings outstanding as of April 2021) by 2040.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.
Tendring District Council Local Plan 2013-2033 and Beyond	The Plan sets housing need at 11,000 dwellings (6,716 dwellings outstanding as of April 2021) by 2033.	Understanding the implications of growth over Local Plan period (between 15-20 years

District Level Plans & Programmes	Purpose / Main Aims & Objectives	Relevance to Plan / SA
(Section 1 and 2) (2022)		as stipulated in individual LPA Plans) is important to factor into the LTP4.
Uttlesford Local Plan 2021 to 2041 Regulation 18 (2023)	The emerging Plan sets housing need at 14,020 dwellings (13,658 dwellings outstanding as of April 2021) by 2040.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.
Southend-on-Sea New Local Plan Refining the Plan Options (2021)	The emerging Plan sets housing need at 23,600 dwellings (22,451 dwellings outstanding as of April 2021) by 2040.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.
Thurrock Local Plan Initial Proposals (2023) (emerging)	The emerging Plan sets housing need at 25,234 dwellings (23,774 dwellings outstanding as of April 2021) by 2040.	Understanding the implications of growth over Local Plan period (between 15-20 years as stipulated in individual LPA Plans) is important to factor into the LTP4.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