Vol. 2: SOUTH ESSEX STRATEGIC GREEN AND BLUE INFRASTRUCTURE STUDY APPENDIX

RESILIENT BY NATURE

The South Essex Strategic Green and Blue Infrastructure Study has been prepared on behalf of the Association of South Essex Local Authorities (ASELA), consisting of the following:

Basildon Borough Council

Brentwood Borough Council

Castle Point Borough Council

Essex County Council

Rochford District Council

Rochford District Council

Southend on Sea Borough Council

Thurrock Borough Council

Rev 01 - 21.07.2020

Prepared by:

ALEXANDRA STEED

URBAN

In collaboration with :

Green Infrastructure consultancy

jam

PRIOR + PTNRS

Funding Opportunities

Summary of Baseline by Theme

Stakeholders Workshop

Local Open Spaces

Case Studies

References and Sources

Table of Contents

1 Funding Opportunities 6

1.1 Local and Regional Funding Schemes....6

1.2 National Funding Schemes....9

2 Summary of Baseline by Theme 12

2.1 Climate Change....12

2.2 Water Management....14

2.3 Landscape Identity....18

2.4 Natural Resources....24

2.5 Connectivity....26

2.6 Conservation....28

2.7 Health and Wellbeing....32

2.8 Growth and Development....40

2.9 Sustainability....42

3 Stakeholders Workshop 44

4 Local Open Spaces 46

4.1 Local Open Space Typologies....46

4.2 Local Open Space Capacity Assessment....48

4.3 Local Open Space Gap Analysis....72

4.4 Basildon GBI....74

4.5 Brentwood GBI....80

4.6 Castle Point GBI....86

4.7 Rochford GBI....92

4.8 Southend-on-Sea GBI....98

4.9 Thurrock GBI....104

5 Case Studies..... 110

6 References and Sources 120

1 Funding Opportunities

1.1 Local and Regional Funding Schemes

In order to deliver the South Essex GBI strategy, and the growth, regeneration and enhancement of the natural environment, there are various funding streams and initiatives available.

Local Funding Schemes

At the local level, the funding of GBI and associated growth and development is likely to be from developer contributions and Government Infrastructure Funds.

Developer contributions are a collective term mainly used to refer to the Community Infrastructure Levy (CIL) and Planning Obligations (commonly referred to as 'Section 106' or 'S106' obligations after Section 106 of the Planning Act). These are planning tools that can be used to secure financial and non-financial contributions (including affordable housing), or other works, to provide infrastructure to support development and mitigate the impact of development. Developer contributions should be used appropriately and effectively and to achieve this they should be considered throughout the planning cycle.

Local authorities have a fundamental role in leading the coordination and delivery of infrastructure that will support their areas. Effective infrastructure planning, prioritisation and governance of spend are critical to supporting the delivery of sustainable development and growth.

Government Infrastructure Funds include funds such as the Housing Infrastructure Fund (HIF) and Department for Transport Grants. The HIF is a government capital grant programme, which is awarded to local authorities on a highly competitive basis.

Further information can be found in the guidance document prepared by the Local Government Association, 'Attracting Investment for Local Infrastructure' (2019), which sets out further detail for Councils.

Regional Funding Schemes

Thames Estuary Growth Fund: Government Commitments [TEGC 2050 Report, March 2019]

The Government has committed to continuing to progress at pace with transport infrastructure investment in the Estuary, including investing:

- Around £200 million of the **Local Growth Fund**;
- £125 million on improvements to the **strategic road network** at Bean and Ebbsfleet; and
- A multi-billion-pound investment in the **Lower Thames Crossing** and the Elizabeth Line.

In addition, the Government will launch an officer-led, cross-government group to realise the wider benefits of the Lower Thames Crossing. This will involve supporting local partners in enhancing transport links from Abbey Wood to Ebbsfleet in Kent.

The Thames Estuary is well served by the **London Economic Action Partnership** and the **South East Local Enterprise Partnership**, the two biggest Local Enterprise Partnerships in the country. It has, for example, received over 40% of the South East Local Enterprise Partnerships' Local Growth Funding. Both the South East Local Enterprise Partnership and the London Economic Action Partnership work closely together given their shared borders. This collaboration is likely to continue as each develop their respective, and closely related **Local Industrial Strategies.**

In order to make the most of the natural assets, which must be preserved and enhanced alongside proposed new developments, the Government endorses a **'natural capital approach'.** This includes opportunities for improving **flood defence** and air quality, as well as increasing opportunities for local people to access natural greenspace.

The **Environment Agency** want to work with all partners with a planning remit to implement an integrated approach to flood defence throughout the Estuary, maximising economic, social, environmental and cultural benefits. This will ensure that all future riverside development is planned strategically, ensuring it can not only improve defences, but also deliver multiple benefits for its communities.

The Government recommend a holistic approach to investment in **placemaking** (skills, education, housing, environmental improvements, flood risk management and community projects) will be the biggest driver for further growth in the Estuary.

The table on the facing page, describes the **Thames Estuary Growth Fund – Government Commitments.**

TAB.1 Thames Estuary Growth Fund - Government Commitments

TOPIC	KEY GOVERNMENT COMMITMENTS
Governance and Delivery	• Government to provide £1million of funding to support the establishment and operation of a Thames Estuary Growth Board • Government to appoint an independent Estuary Envoy to chair the Thames Estuary Growth Board. • Government to designate a new Cabinet-level ministerial champion for the Thames Estuary.
Sector Growth and Skills	• Government to award £4.3 million from the Cultural Development Fund to support the Thames Estuary production Corridor. • Government to work with the South East Local Enterprise Partnership to establish a Local Digital Skills Partnership. • Government to award over £1 million to the London Economic Action Partnership over 2018/19 and 2019/20, and £1.3 million to the South East Local Enterprise Partnership over 2018/19 and 2019/20, for the provision of their Growth Hubs. • Government to support the South East Local Enterprise Partnership and the London Economic Action Partnership to produce Local Industrial Strategies. • Government to continue to work with local partners to promote inward investment in the Estuary. • Government to launch a strategic communications campaign promoting the Thames Estuary as an outstanding place to live, work and do business. • Government to support creation of masterplans and feasibility studies of key sites of the Thames Estuary creative production corridor. • Government to provide funding for regional labour market analysis, covering the whole of the Estuary. • Government to work with the South East Local Enterprise Partnership and the Greater London Authority to establish Skills Advisory Panels. • Government has made an additional 1,500 medical students places available through the nation's largest ever medical training expansion, enabling Canterbury Christ Church University and the University of Kent to open a new Kent and Medway Medical School. • Government to create the UK Shared Prosperity Fund following our departure from the European Union and European Union Structural Funds.
Placemaking and the Environment	• Government to award £37 million to the South East Local Enterprise Partnership as part of its £1.6 billion Stronger Towns Fund. • Government has awarded £590.8 million to the South East Local Enterprise Partnership through Growth Deal funding since 2014. • Government has awarded £48.7 million and around £110 million across the South East Local Enterprise Partnership and the London Economic Action Partnership areas respectively, through its Growing Places Fund. • Government is delivering its Thames Estuary 2100 Plan, which sets out a comprehensive plan to address the future risks of tidal flooding. • Government to support a study to develop options and consult the local area on a Great Thames Park. • Government to support a 'Year of the Thames' – bringing to life the role the Thames Estuary has always played, and will continue to play, as a gateway to the rest of the world.
Housing and Transport	• Homes England has identified the Thames Estuary as a major growth area and stands by to offer tailored support to develop ambitious plans to increase the supply of new homes. • Government is committed to exploring the potential for at least two locally-led development corporations in the Thames Estuary. • Government is committed to striking housing deals with groups of local authorities in the Thames Estuary in order to support ambitious and innovative plans for additional homes in high demand areas. • Government has increased the Housing Infrastructure Fund by £500 million to £5.5 billion. £291 million is already being invested in the Thames Estuary at the London Docklands to unlock up to 18,000 new homes. • Government has made nearly £300 million available to Ebbsfleet Development Corporation to drive forward the delivery of the garden city and to deliver key infrastructure by 2021. • Government is backing the multi-billion-pound Lower Thames Crossing, Britain's biggest road tunnel, which is set to nearly double road capacity across the Thames and free up the Dartford Crossing. • Government is establishing a cross-government group to realise the wider benefits including housing, employment opportunities and economic development of the Lower Thames Crossing. • Government has committed £200million of Local Growth Fund to 2020/21 (via Local Enterprise Partnerships) to facilitate growth, including improvements to the A13 and A127 in Essex, and town centre regeneration schemes in Kent. • Government has committed £125 million to improve the A2 junctions at Bean and Ebbsfleet and £10 million to the existing Dartford Crossing. • Government is announcing £4.85 million to support local partners in developing the business case for enhancing transport links between Abbey Wood and Ebbsfleet.

South Essex Local Enterprise Partnership

The Creative Estuary Commission:

Creative Estuary is a partnership of public sector and cultural organisations working together with the ambition to transform 60 miles of the Thames Estuary across Essex and Kent into one of the most exciting cultural hubs in the world.

The £7m programme (over three years) will drive forward the creative and economic evolution of Essex and Kent and unlock its potential as an international production hub and a collaborative, inspirational space for a new generation of creative talent. In doing so, the Commission will establish the region as a sustainable location for creative industries to develop, offering new space, new infrastructure and new investment opportunities to support culture-led growth. It will support more than 400 new jobs, and deliver new skills, qualifications and apprenticeships for 300 people.

The Creative Estuary vision is supported by a consortium of public sector and cultural organisations, working together to support the Thames Estuary Production Corridor including:

- The South East Local Enterprise Partnership (SELEP)
- Kent and Essex County Councils
- The Greater London Authority
- 11 local authority areas represented by Thames Gateway Kent Partnership and Opportunity of South Essex
- South East Creative Economy Network (SECEN)
- The University of Kent
- The University of Essex
- Locate in Kent and cultural organisations in Metal, and Cement Fields.

Creative Estuary Commissions will support projects at a range of scales; from small scale grassroots commissions for emerging cultural activists, to large scale commissions with a range of partners.

The Local Growth Fund (LDG):

Formal democratic decision-making is made through the SELEP Accountability Board which approves all major funding decisions and monitors and manages SELEP's capital programme for greatest impact. There are three key stages to the award of local growth funds:

1. the prioritisation of projects to be included in a SELEP Growth Deal bid;

2. the growth deal allocation by central government;

3. the funding by SELEP Accountability Board.

In response to the Growth Deal funding opportunity, Local Enterprise Partnerships (LEPs) were required to submit Growth Deal bids to Central Government in a bid document that contained a prioritised list of projects from across the four Federated Areas of SELEP. To date, SELEP has been awarded three Growth Deals securing a total of £590m Local Growth Fund investment.

Thames Estuary 2100 Plan

The Thames Estuary 2100 Plan (the plan) is a long-term strategy for managing tidal flood risk in the Thames Estuary. It sets out how the Environment Agency and its partners can work together to manage tidal flood risk until the end of the century and beyond. The plan aims to protect 1.3 million people and £275 billion worth of property and infrastructure from this increasing risk. The Thames Estuary 2100 Plan has 3 phases, each with different actions.

South Essex JSP

One of the aims of the Association of South Essex Local Authorities (ASELA) (which includes Basildon Borough Council, Brentwood Borough Council, Castle Point Borough Council, Essex County Council, Rochford District Council, Southend on Sea Borough Council, and Thurrock Borough Council) is to influence and secure funding for necessary strategic infrastructure.

1.2 National Funding Schemes

Budget 2020

In the budget statement the following initiatives were announced:

- Funding for the Shared Rural Network agreement to radically improve mobile coverage in rural areas and a record £5 billion investment in gigabit broadband rollout in the hardest-to-reach areas of the UK.
- Record funding of £5.2 billion for flood defences between 2012 and 2017, offering better protection from flooding for 336,000 homes and non-residential properties. Additional funding of £200 million will help communities at most risk of flooding recover faster in cases where they are affected by flood damage.
- A £10.9 billion increase in housing investment to support the commitment to build at least 1 million new homes by the end of the Parliament, and an average of 300,000 homes a year by the mid 2020s.
- An investment of £1.5 billion over five years in capital spending to refurbish further education colleges.
- A new £2.5 billion National Skills Fund to improve adult skills as well as a capital investment for up to eight new technology, engineering and maths schools.
- A Carbon Capture and Storage (CCS) Infrastructure Fund to establish CCS in at least two UK sites, one by the mid-2020s, a second by 2030.
- The largest ever investment in England's motorways and major A roads. The Second Road Investment Strategy (RIS2) will spend over £27 billion between 2020 and 2025. This will take forward schemes such as dualling the A66 Trans-Pennine and upgrading the A45 Newark bypass to address congestion and building the Lower Thames Crossing to increase road capacity across the Thames east of London by 90%.

National Infrastructure Strategy

The UK has been preparing for an infrastructure overhaul as part of the National Infrastructures Strategy (NIS) which was delayed before the Covid-19 outbreak. The 30-year strategy outlines how £100bn will be spent over this parliament to level up regions and outline spending projections for transport and digital infrastructure. Electric vehicles (EVs) and renewable infrastructure are set to be key aspects of the NIS.

Business Sponsorship and Carbon Off-Setting

Carbon offset schemes allow individuals and companies to invest in environmental projects around the world, in order to balance out their own carbon footprints. The projects are usually based in developing countries and most commonly are designed to reduce future emissions. Schemes might involve rolling out clean energy technologies or purchasing carbon credits from an emissions trading scheme. Other schemes work by soaking up CO2 directly from the air through the planting of trees.

TAB.2 Carbon Offset Scheme

CARBON OFFSET SCHEME	DESCRIPTION
The Peatland Code	• The Peatland Code is a voluntary certification standard for UK peatland projects wishing to market the climate benefits of peatland restoration. • Peat acts as a carbon store, it is a great habitat for wildlife, it has a role in water management and preserves things well for archaeology. • The Peatland Code works for everyone involved: · Carbon buyers have reassurance that they have facilitated a responsible scheme, which will result in additional climate benefits. · Projects have recognised procedures and standards to work to and can use their validated/verified status as a means to market the carbon benefits to potential buyers. · Society will benefit from enhanced climate mitigation and the restoration of the natural landscape.
Cool Earth Overseas Scheme	• Cool Earth is a UK-based international NGO that protects endangered rainforest in order to combat global warming, protect ecosystems and to provide employment for local people. • Cool Earth's ethos is that the most effective custodians of rainforests are the people who have lived there for generations as they have the most to lose from its destruction. Their approach is to work with indigenous and rainforest-based communities to secure threatened rainforest that, within 18 months or less, would otherwise be sold to loggers or ranchers. • The charity provides local people with the support they need to get income from the forest without cutting it down so that the forest is worth more intact.
Gold Standard Offsets	• The Gold Standard is a globally recognised and trusted regulatory framework for the deployment of public and private capital into climate, environment and development projects. • Unlike traditional NGOs, the Gold Standard takes a market based 'payment for outcomes' approach, ensuring that projects achieve genuine outcomes that deliver with as much impact as possible. • Every project certified by the Gold Standard must monitor, report and verify carbon savings and sustainable development benefits for local communities.
The Woodland Carbon Code	• The Woodland Carbon Code is the UK's government backed standard for woodland carbon projects and provides the mechanism for landowners to attract carbon funding to support woodland creation projects on their land. • As buyers of this carbon want to be assured of the amount of carbon sequestration that has been, or will be, achieved, the Woodland Carbon Code provides the standard and checks for measuring it robustly.

Forestry Commission Woodland Support

Woodland Creation Grant:

- Capital grant for farmers and land managers to create woodland.
- Application open year-round.
- Woodland creation provides funding to supply, plant, weed and protect young trees.
- Find out more about the woodland creation grant here.

Woodland Management Plan Grant:

- Capital grant for farmers and land managers to produce a woodland management plan.
- Application open year-round.
- The grant is for financial support to produce a woodland management plan that meets UK Forestry Standard requirements, using capital item PA3.
- Find out more about the woodland management plan grant here.

Woodland Tree Health Grant:

- Capital grant for farmers and land managers to restock or improve woodland after tree health problems.
- Application open year-round.
- The grant is a one-off payment towards the cost of:
  - · Restocking woodland after tree health problems
  - · Felling diseased trees or rhododendron control

Natural England Rural Grants and Payments

Countryside Productivity Scheme:

- The RDPE Countryside Productivity Scheme provides funding for projects in England which improve productivity in the farming and forestry sectors and help create jobs and growth in the rural economy.
- It is administered by the Rural Payments Agency (RPA).
- Under the RDPE Countryside Productivity Scheme, there are grants for:

1. Small grants
2. Water resource management and reservoirs
3. Improving forestry productivity
4. Adding value to Agri-food
5. Improving farm productivity.

- The grants are funded by the European Agricultural Fund for Rural Development (EAFRD).
- Find out more about the countryside productivity scheme here.

Rural Development Programme for England: LEADER Funding

- LEADER funding is available to local businesses, communities, farmers, foresters and land managers.
- All projects funded by this scheme must support one or more of the 6 LEADER priorities:

1. Support micro and small businesses and farm diversification
2. Boost rural tourism
3. Increase farm productivity
4. Increase forestry productivity
5. Provide rural services
6. Provide cultural and heritage activities

Find out more about the LEADER funding here.

DEFRA

The Rural Development Programme for England (RDPE) provides money for projects to improve agriculture, the environment and rural life.

Funding goes to schemes to:

- improve the environment
- increase the productivity of farming and forestry
- grow the rural economy

Who can apply for funding:

- a farmer, grower or forester
- managing land or woodland
- a business owner in a rural area
- a food business
- living in a rural community

National Lottery/Heritage Lottery Fund)

The Heritage Lottery Fund funds a broad range of projects that connect people and communities to the national, regional and local heritage of the UK. Heritage can be anything from the past is valued and can be passed on to future generations. The heritage project could include:

- nature
- designed landscapes
- landscapes and the countryside
- oral history
- cultural traditions
- community archaeology
- historic buildings, monuments and the historic environment
- museums, libraries and archives
- acquiring new objects
- commemorations and celebrations
- industrial, maritime and transport
- The money can be spent on:
    - · activities to engage the wider community
    - · repairs and conservation
    - · digital outputs
    - · new staff posts
    - · paid training placements
    - · professional fees
- The grants range from £3,000 to £5 million and over.

Landfill Taxes

The Environment Bill [2019] states that recyclable relevant waste must be separated from waste that is destined for incineration or landfill with the intention of it being recycled or composted. However, authorisation must be obtained from the Environment Agency if proposals include the restoration of landfill using waste. Environmental permits for landfill sites normally include a condition that requires waste recovery evidence to be sent to the Environment Agency as a 'restoration plan'.

Landfill Communities Fund:

The Government introduced landfill tax in 1996. The Landfill Communities Fund (LCF) is an innovative tax credit scheme enabling operators of landfill sites in England to Opportunities contribute money to organisations enrolled with ENTRUST as Environmental Bodies (EBs). EBs are able to use this money to deliver projects in England. The Regulations impose various eligibility criteria for projects to receive funding, namely projects must be within 10 miles of an Environment Agency registered landfill site in England and must match one of a number of objects (or areas of work) which are defined within the Regulations. These are as follows:

Object A: the reclamation, remediation or restoration of land which cannot currently be used;

Object B: the prevention of potential for pollution or the remediation of the effects of the pollution;

Object D: the provision, maintenance or improvement of a public park or another public amenity;

Object DA: the conservation or promotion of biodiversity; and

Object E: the restoration of a place of religious worship or of historic or architectural interest.

Homes England

£4.1 billion has been allocated from the Housing Infrastructure Fund to local authorities for infrastructure to unlock housing. It will help to unlock up to 340,000 new homes by helping to fund much needed infrastructure in areas of greatest housing need.

It will help to ensure that more homes enables better local infrastructure and community facilities. The grant funding, allocated to local authorities on a competitive basis, is being provided in the period 2023-24, to fund physical infrastructure such as roads, community facilities and utilities.

The government's commitment to level up disadvantaged areas of the UK was welcomed in March 2020 with the Chancellor considering including spending on social infrastructure such as health, education or care as a form of infrastructure investment. Social infrastructure includes things like NHS salaries, training, personal assistants for those with disabilities and childcare workers.

2 Summary of Baseline by Theme

2.1 Climate Change

"The twin crises of climate breakdown and biodiversity loss are the most serious issues of our time. Buildings and construction play a major part, accounting for nearly 40% of energy-related carbon dioxide (CO2) emissions whilst also having a significant impact on our natural habitats."

UK Landscape Architects Declare Climate and Biodiversity Emergency, 2020.

We are in a time of international environment and climate crisis: climate heating and mass biodiversity loss are the most challenging issues of our time.

On 1 May 2019, the House of Commons supported a non-binding motion in favour of an environment and climate emergency declaration, announcing Britain to be the first country in the world to have declared a climate emergency.

According to the International Climate Emergency Forum (ICEF) there are a number of jurisdictions that have recognised a climate emergency and passed a binding motion. This includes Southend-on-sea Borough Council who signed the declaration on 18th July 2019.

Current projections show that sea level rise in the Thames is likely to be between 20cm and 90 cm by 2100, although due to uncertainty over polar ice melt, this could increase to 2m. North Sea storm surges are also a significant threat, while peak freshwater flows could also increase by as much as 40% by 2080. At these levels, homes, businesses, and major regional transportation infrastructure, including the A13 trunk road, and the London, Tilbury and Southend railway lines, will be severely at risk. The Port of London, and major areas of regeneration, especially within the London Gateway, will also be threatened. Moreover, scores of important ecological sites in the Thames Estuary, many protected by national and international designations, could be lost.

Land levels are slowly sinking which is affecting our deteriorated flood defences built 30 years ago. Changes in the morphology of the Estuary can also affect flood levels and the ability of the Estuary to withstand it.

Increasing temperature leads to urban heat island and air quality effects which affect human health by contributing to general discomfort, respiratory difficulties, heat cramps and exhaustion, non-fatal heat stroke, and heat-related mortality.

Biodiversity is also changing as a consequence of higher temperatures and humidity levels. As some species increase in number and range, whilst others decline, food provision, the spread of diseases and our enjoyment of a healthy and aesthetically pleasing environment, all stand to be affected.

Indeed, the climate impacts upon environmental, cultural, social and economic factors are re-shaping our landscapes. Fortunately, there are a number of regional initiatives that are putting plans, measures/ actions and projects in place to adapt to climate change challenges and mitigate their impact across the different climate change scenarios.

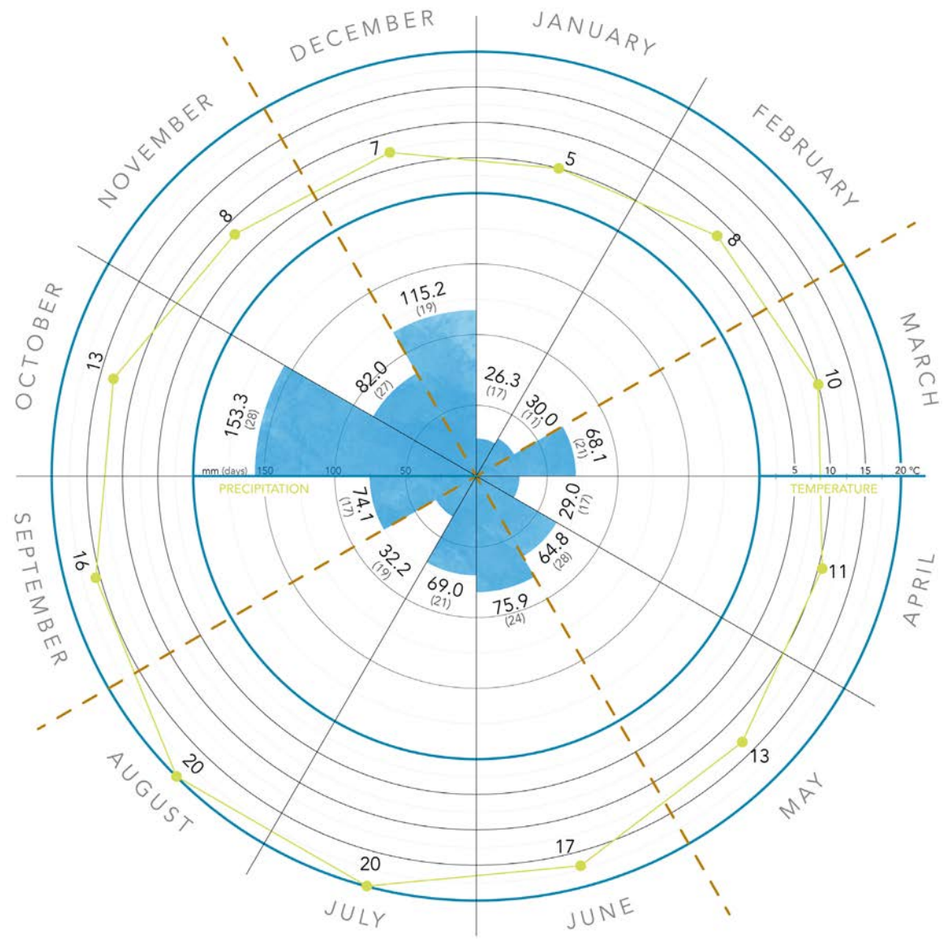


FIG.1 South Essex Mean Temperature and Precipitation 2019

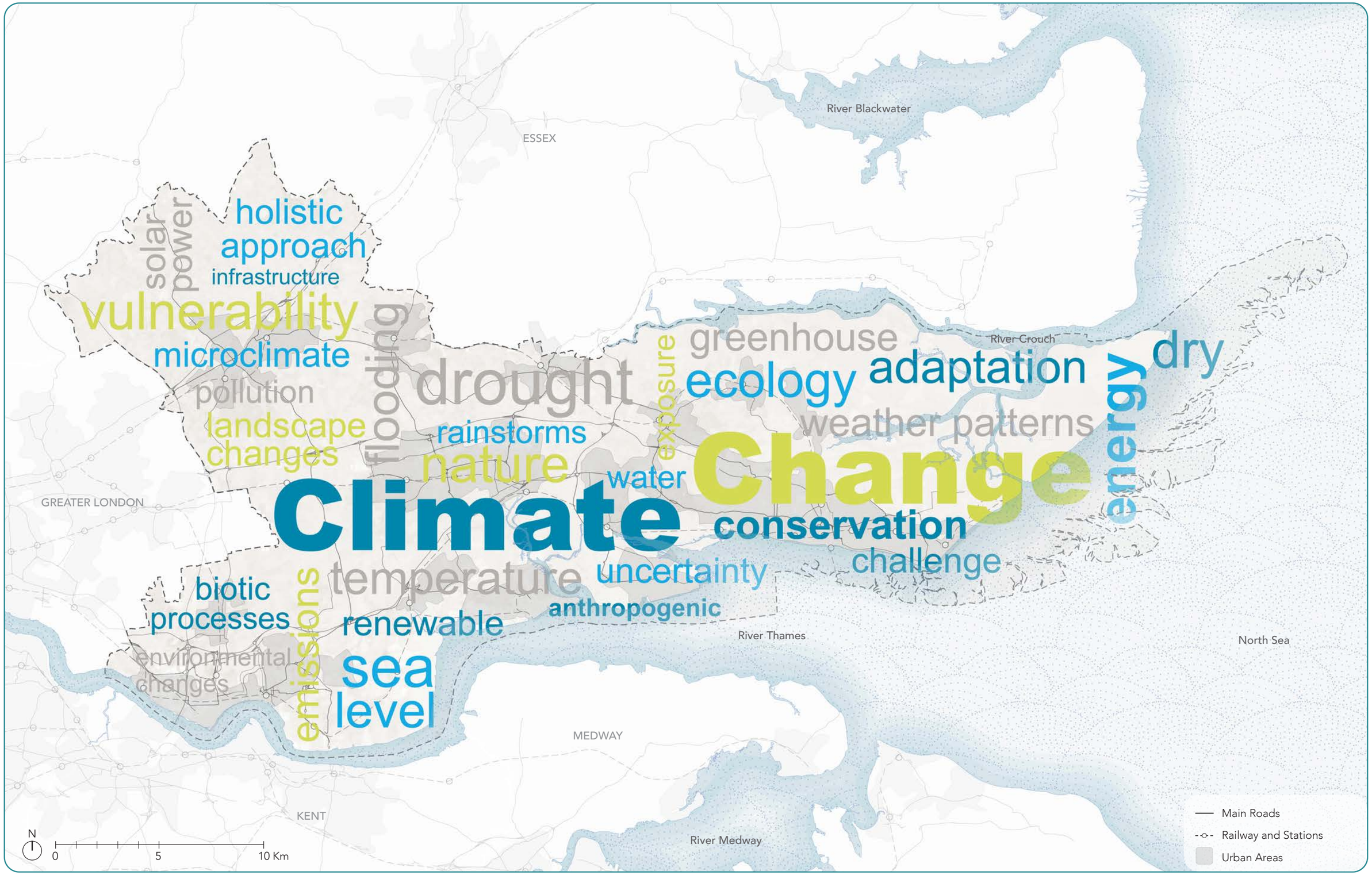


FIG.2 Possible Climate Change Effects in South Essex

2.2 Water Management

Waterbodies

Rivers and waterbodies play an integral role in the health of South Essex. They provide much of the water on which we all depend, but also support wildlife, ecosystems and recreation, and form a central part of its heritage. They are both physically and ecologically diverse with interactions between topography, geology and rainfall dictating the quality of our environment and providing a unique landscape.

The main watercourse network is comprised of the Thames Tideway, covering the entire south-east of the region, alongside rivers Crouch and Roach to the north, river Roding bordering the north-west, and river Mardyke flowing from the north of Thurrock to join river Thames in the west.

The main rivers and adjacent valleys are used as corridors for both people and wildlife, and their floodplains provide flood storage capacity.

The current ecological status of most of its rivers and other waterbodies is deemed to be failing the environmental targets set by the Environment Agency under the Thames River Basin Management Plan and the Anglian River Basin Management Plan.

The Thames suffers from water management challenges, including:

- physical modifications
- pollution from wastewater
- pollution from towns, cities and transport,
- changes to natural flow and level of water
- negative effects of invasive non-native species
- pollution from rural areas

Because many of these issues arise from current activities that provide a range of benefits, and result from complex processes, it may not be possible to fully resolve them. The Environment Agency is constantly monitoring water quality and making improvements, along with numerous other involved parties, bodies, and organisations.

The rivers Crouch and Wid are classified as ‘less than good’ ecological status, whilst the River Wid is classified as ‘poor to moderate’ status according to Brentwood Water Cycle Study, 2015. The river Mardyke’s ecological and chemical status are classed as ‘moderate’ and ‘good’ respectively.

South Essex has a rich secondary network of ordinary watercourses which are smaller elements and may not hold water all the time such as smaller rivers, streams, ditches, drains, culverts, dikes, sluices, sewers, and passages through which water flows.

These ordinary watercourses are important features of our landscape and fulfil many roles in our natural environment. They support habitats for a wide variety of wildlife, provide drainage for developed and agricultural land, and are vital water resources besides having important recreational value.

Much of the wildlife in our marshes is vulnerable to habitat loss, disturbance, invasive species and climate change.

The Greater Thames Marshes is a project identified under the Nature Improvement Areas (NIA) Programme. This project site is home to numerous nature reserves and sites of special scientific interest, and is one of the most nationally and internationally important estuaries for wintering waterfowl.

FIG.3 Tewkes Creek

FIG.4 Thames Marshes

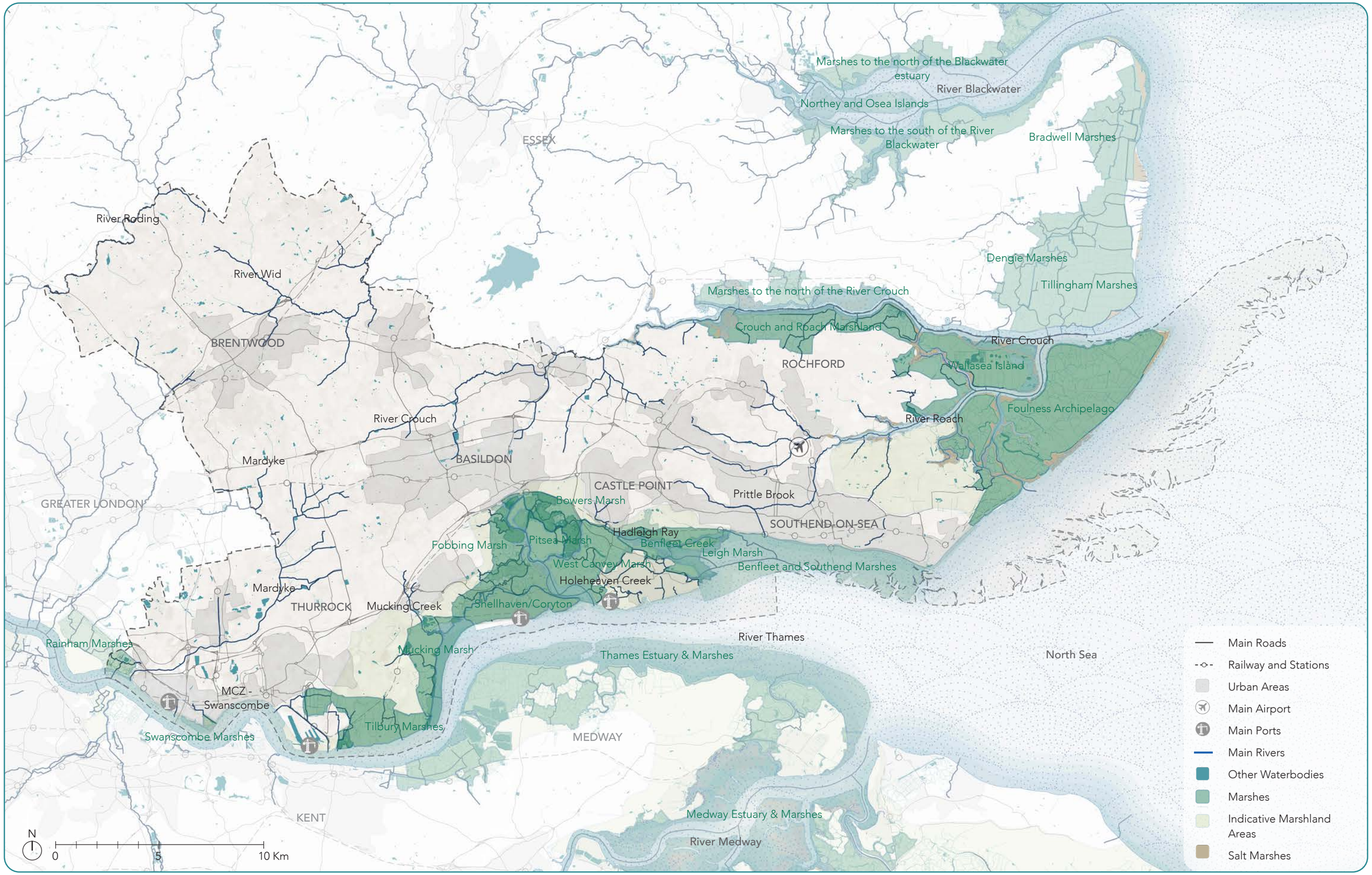


FIG.5 Waterbodies and Marshland

Flood Risk

South Essex faces an uncertain future due to the effects of climate change: more severe storms and wetter winters, and increase in sea levels. These climate change effects are already causing surface water, groundwater, freshwater and tidal flooding in the region.

Surface water flooding causes a major threat for its life, towns, infrastructure -roads, railways, utilities, and economy. Its urban areas with least green infrastructure are more vulnerable to surface water flooding during high intensity rainfalls. These long periods of sustained high rainfall tend to lead into groundwater flooding.

The coast benefits from, but also suffers, the challenges of being in the Thames and Crouch estuaries. Most of the coast floods from a combination of fresh flow and tidal waters.

The Thames Estuary is the meeting place of the River Thames, its many tributaries, and the North Sea. Twice a day the freshwater from the Thames meets the incoming tide from the North Sea causing an average daily rise and fall of water levels of 7m.

In addition to the daily tides, the Thames Estuary is prone to an increase in water levels caused by a North Sea surge (see FIG 6).

The Environment Agency defines zones where river and sea flooding are most probable to occur, ignoring the presence of defences, as follows:

- Zone 1 (low probability): land having a less than 1 in 1,000 annual probability of river or sea flooding.
- Zone 2 (medium probability): land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
- Zone 3 (high probability): land having a 1 in 100 or greater annual probability of river flooding; or land having a 1 in 200 or greater annual probability of sea flooding.

The Environment Agency (TE2100 Plan) has examined the impact of flood defences along the margins of the Thames estuary on internationally designated habitats estimating that some 1,200 hectares will be lost.

As sea levels rise, wildlife habitats are unable to migrate landwards because the defences are in the way, and the habitats are squeezed out of existence. These invaluable habitats support a wide range of species which provide the feeding and breeding grounds for commercial fish and shellfish.

FIG.6 North Sea Surge in Thames Estuary

1953 Storm Surge

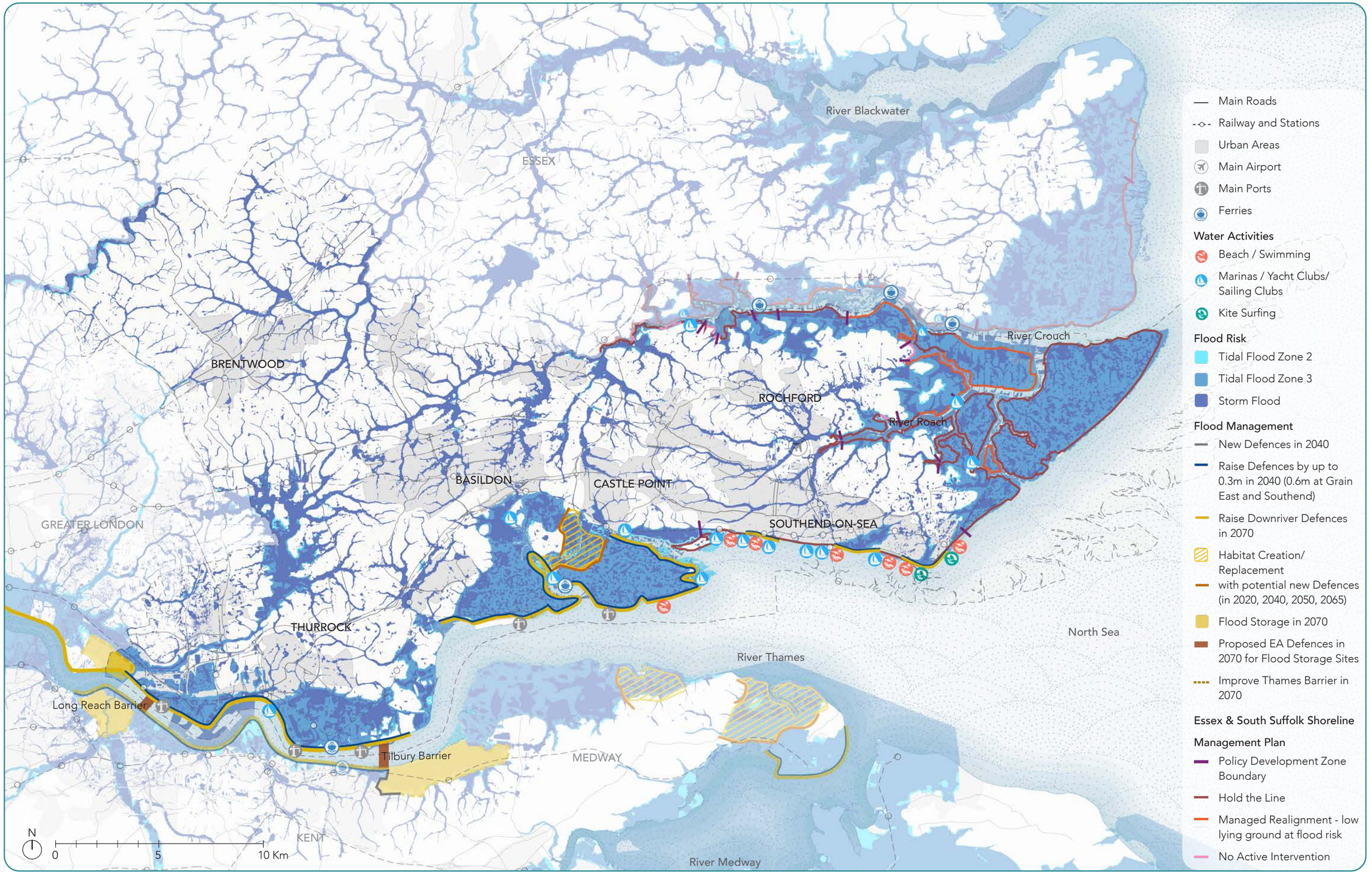


FIG.7 Flood Risk and Flood Management

2.3 Landscape Identity

Landscape Character Areas

The landscape has continued to be shaped following the last ice-age over 10,000 years ago with changes to the landform, land cover and land uses. Human activity and settlement has significantly influenced the development and character of the landscape. In particular, they include demands placed by society on land for agriculture and forestry, housing, transport, and minerals, and increasingly for recreation and leisure.

South Essex is primarily characterised by small irregular fields interspersed with commons, woods and a pattern of dispersed settlements, most of them dating from medieval period with limited nucleation and urbanisation.

The removal of trees, woodlands and hedgerows created an open landscape where intrusive man-made features such as power lines, industrial complexes and oil refineries are more visible.

The historic marshland and grazing landscapes of the coast have been severely reduced and often neglected since the 1930's.

The region falls under the Greater Thames Estuary (81) and Northern Thames Basin (111) Regional Character Areas defined by the Countryside Agency, English Nature and English Heritage Character Map of England.

The Essex Landscape Character Assessment classifies the region as Landscape Character Types (LCT) and provides further definition through Landscape Character Areas (LCA). Landscape Character Areas are geographical areas with a recognisable pattern of landscape characteristics, both physical and experiential, that combine to create a distinct identity and sense of place.

South Essex falls under the following:

1. River Valley Landscapes LCT
    · Roding Valley LCA
2. Wooded Hill and Ridge Landscapes LCT
    · Brentwood Hills LCA
3. London Clay Landscapes LCT
    · South Essex Farmlands LCA
4. Coastal Landscapes LCT
    · Thames Estuary LCA
    · Crouch and Roach Farmland LCA
    · Dengie and Foulness Coast LCA
5. Urban Landscapes LCT
    · South Essex Coastal Towns LCA

Detailed characterisation has been provided in the South Essex GBI Study Baseline Report 2019 and the Essex LCA 2003.

In addition, the South Essex GBI Study Baseline Report 2019 has identified Thurrock LCA -an area not included within the Essex LCA 2003- based on the following Regional Character Areas:

· Greater Thames Estuary
· Northern Thames Basin

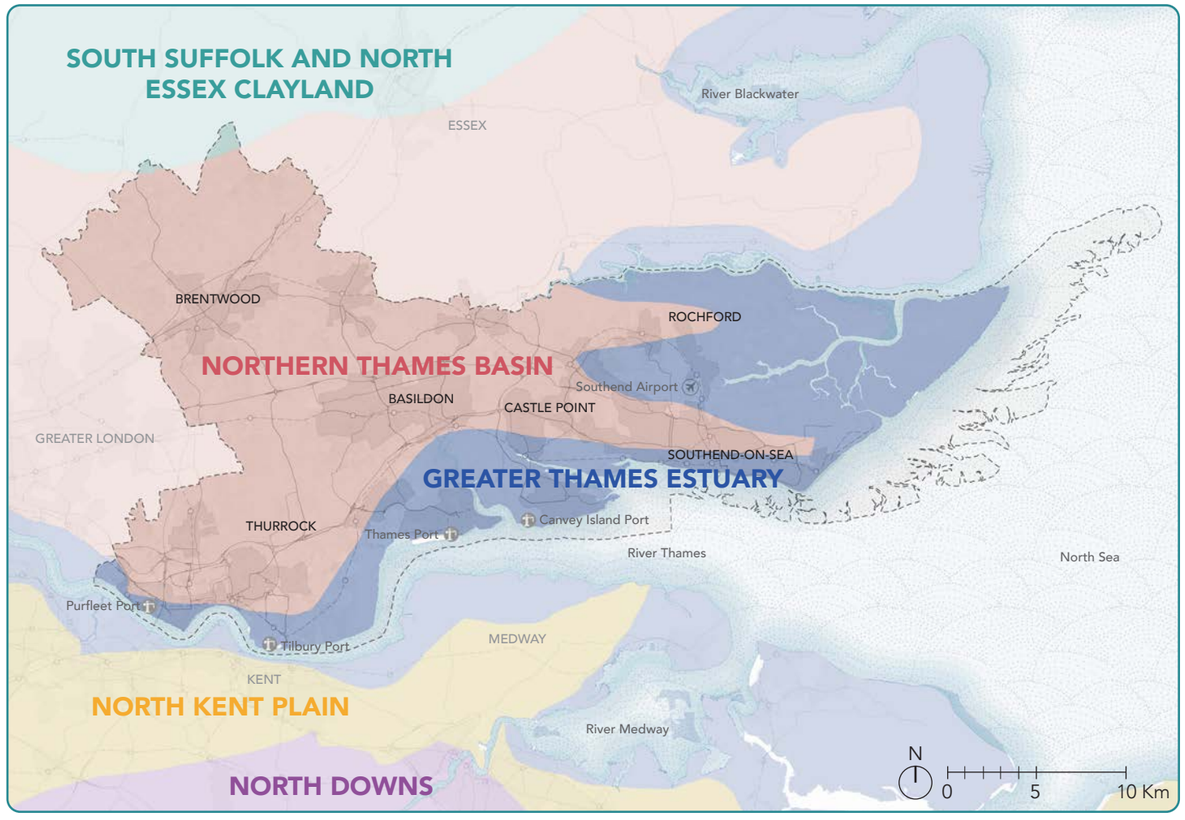


FIG.8 Regional Character Areas

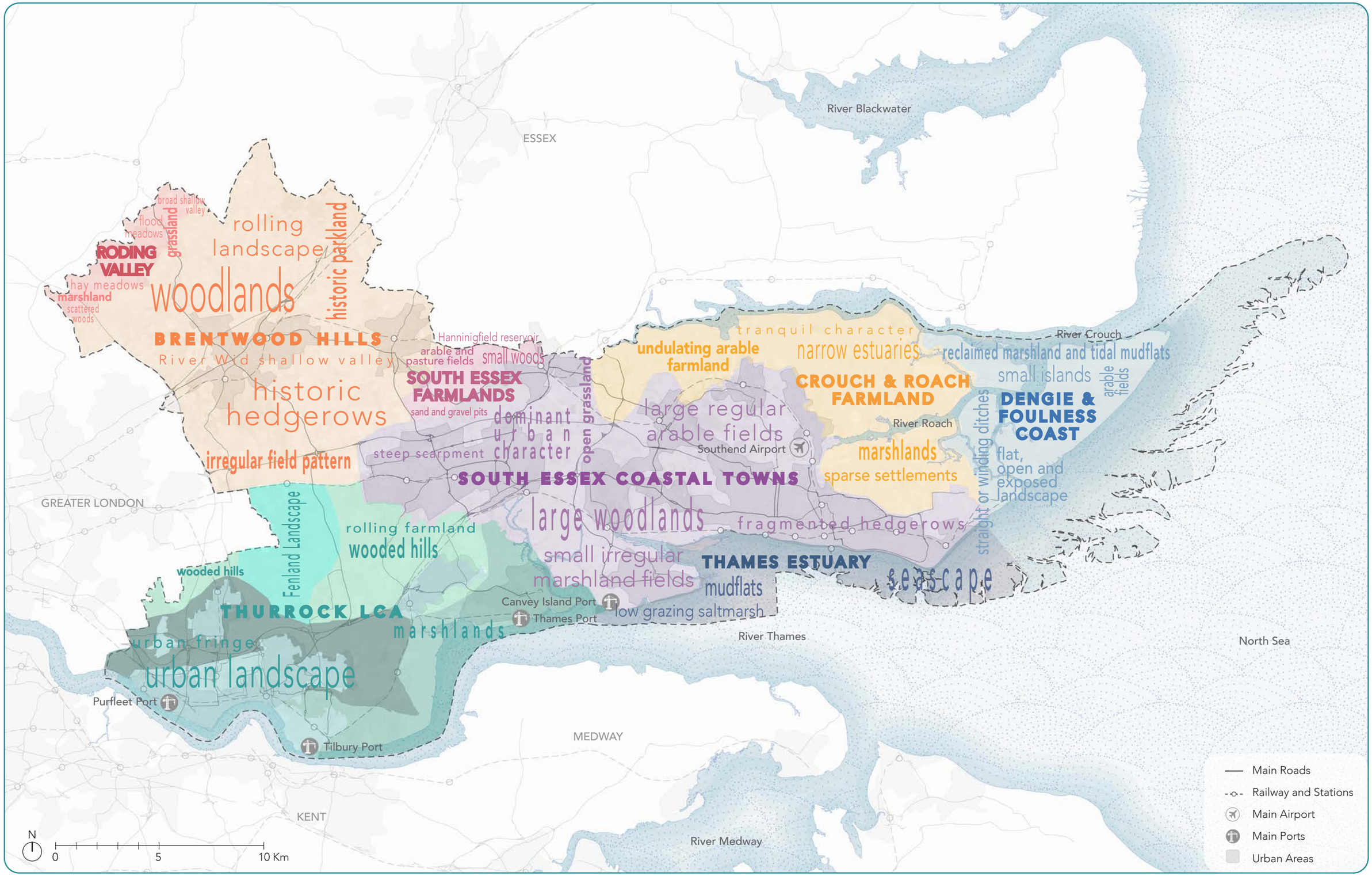


FIG.9 South Essex and Thurrock Landscape Character Areas

Views and Vistas

The unique combination of natural and industrial elements and features make the South Essex landscape distinctive and unique. This visual quality is an important criteria for us all to relate with our environs, thus creating and reinforcing a sense of place.

Views in and out to the surrounding landscapes help to create cognitive maps and visual orientation tying together natural, urban and cultural features alike. The importance of views typically relates to the level of amenity they provide highlighting the feeling of being in a particular place.

A vista is a line of vision or a view corridor usually framed by natural features or structures towards another feature which terminates the view.

Views and vistas from/into the landscape such as views from unique natural resources, well-known landmarks, and/or neighbouring landscapes of high sensitivity - especially international and nationally designated landscapes - have played a key role in the location and development of our settlements and tourist destinations.

South Essex has a variety of views and vistas including well known positions from Brentwood Hills and spectacular views across the valley from nearby Norsey Woods, to high grounds or more open and extensive views over farmlands. Its exposed waterfront landscapes also provide uninterrupted, far-reaching views out across the Thames to the North Sea and the opposite banks, and alongside rivers Roach and Crouch and their opposite banks.

FIG.10 River Crouch View

FIG.11 Hadleigh Castle Vista

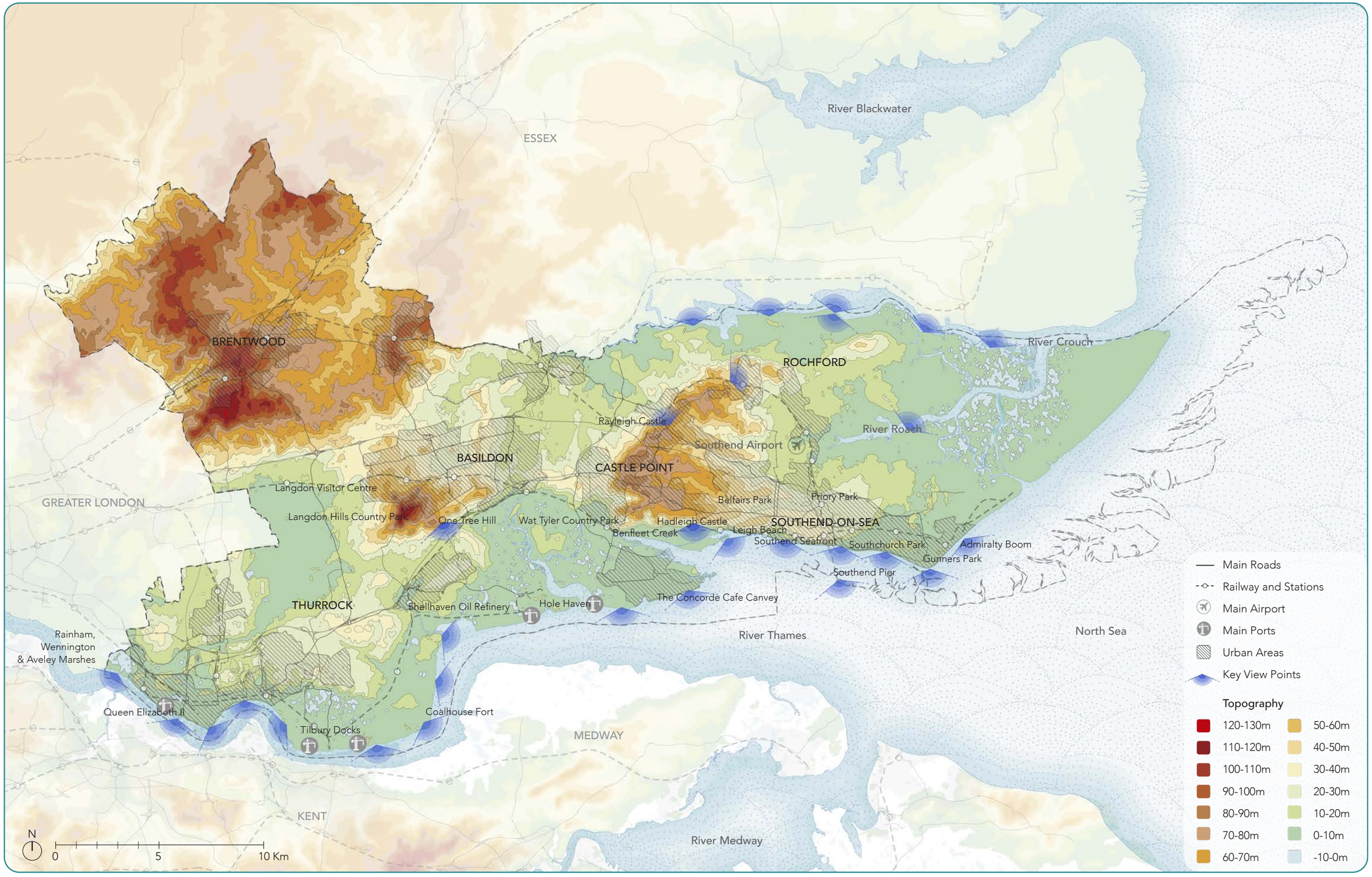


FIG.12 Indicative Views and Vistas

Heritage

The rich and varied environment of South Essex has been shaped by natural processes and human activities through millennia. These factors have influenced its landscape identity and character, establishing many features, including:

- A vast hidden landscape of archaeological sites that spans over 900,000 years of human activity;
- Rural landscapes dating from 2,000 years ago;
- A road network that dates from the medieval period;
- A rich evolution of farmland from a medieval enclosed landscape, through agricultural intensification from the Second World War onwards into the today's landscape where there are many uninterrupted arable stretches; and
- Coastal heritage features including harbours and boatyards, industrial sites, and the Second World War defence networks, such as the General Headquarters Defensive line and the Red Sand Fortresses.

The environmental heritage provides a tangible -and often highly evocative- link to our prehistoric and historic past. It is also essential for biodiversity and provides recreational and cultural experiences that enrich the quality of life for local communities. This shared heritage brings intangible value by establishing a sense of belonging or pride in a place, essential to the success of a community.

The Essex Historic Landscape Characterisation (HLC) sets out the distinctive historic dimension and attributes of its current rural landscapes. The Essex HLC has recorded information relating to how the landscape has changed since the late 19th century.

The assessment is arranged into the following broad groups: enclosed land; open land; woodland; parks and gardens; coastal; settlements; industrial; horticulture; military; and land use.

For further detailed information on the HLC types please refer to the Essex HLC.

Conserving the historic, cultural and natural heritage through heritage and conservation designations and environmental legislations is key to the GBI Strategy.

South Essex is home to a wide number of the following:

- Heritage and Conservation Designations:
  - · Conservation Areas;
  - · Listed Buildings;
  - · Scheduled Monuments and Archaeological Areas; and
  - · Historic Gardens and Designed Landscapes.
- Environmental Legislation:
  - · Ancient Woodland.

FIG.13 Coalhouse Fort: Scheduled Monument

FIG.14 Red Sands Sea Fort, Thames Estuary, North Sea

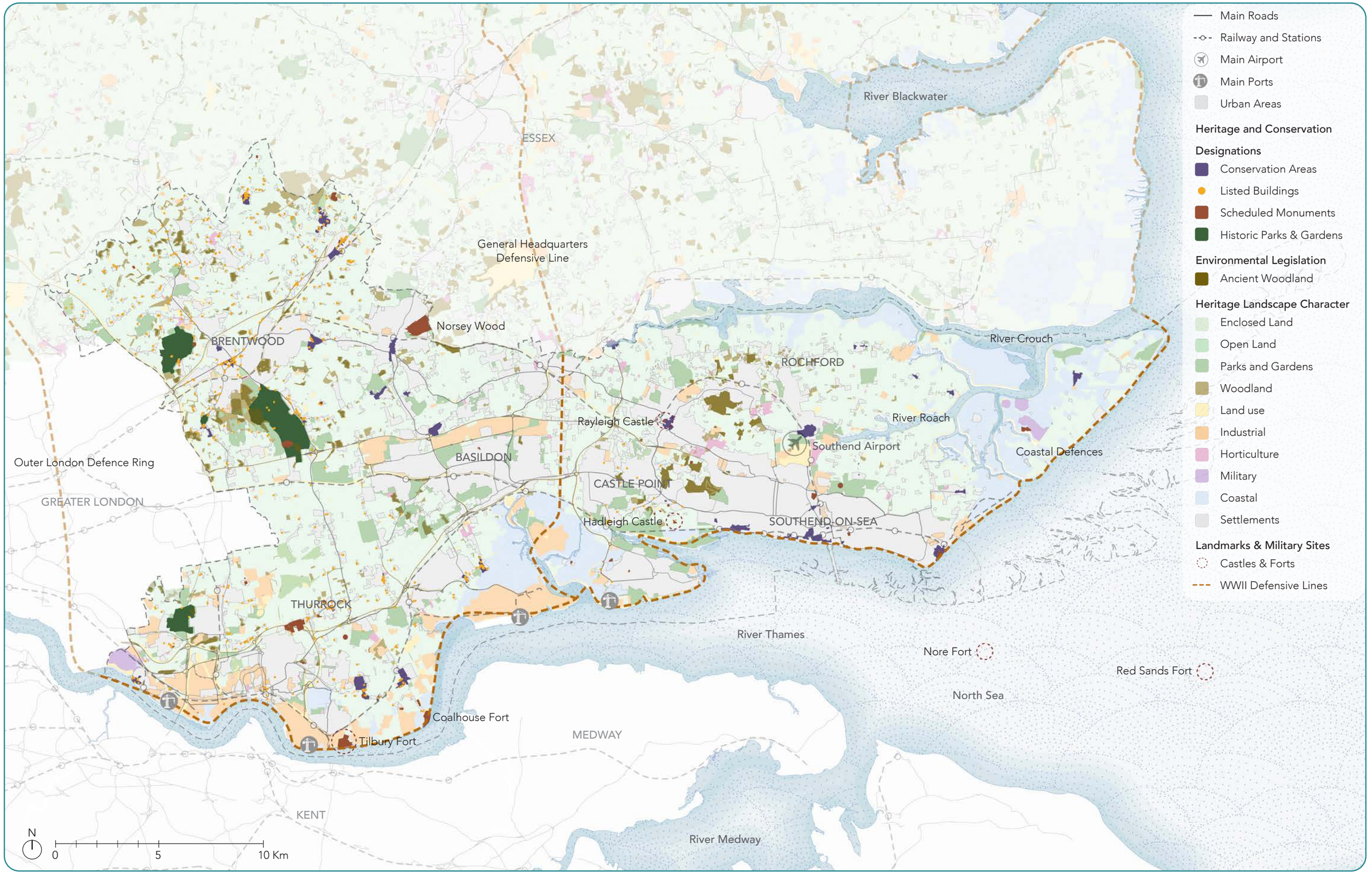


FIG.15 Heritage Landscapes

2.4 Natural Resources

Productive Landscapes

The landscape in South Essex is an invaluable source of goods and services such as food, pollination services, water, wood, energy and minerals for people. The following productive landscapes include:

1. Agriculture

With a 69% coverage of agricultural land, South Essex's landscape is highly productive. Farming practices have considerable influence on the natural habitats and character of the district.

DEFRA classifies Agricultural Land according to the quality of the soil, the cropping range and expected level of yield into 5 grades:

- Grade 1: excellent quality agricultural land;
- Grade 2: very good quality agricultural land;
- Grade 3: good to moderate quality agricultural land;
- Grade 4: poor quality agricultural land; and
- Grade 5: very poor quality agricultural land.

Good to moderate quality is the most dominant grade across the region showing patches of very good to excellent quality to the east and south-west.

2. Industrial Water Activities

Seascapes and watercourses are an essential source of food production. The good quality of waters support shellfish growth and production, bivalve mollusc harvesting and fishing lakes.

3. Minerals and Waste

The landscape supports extensive mineral reserves which make an essential contribution to the prosperity and quality of life in South Essex. There is considerable potential in restoring these areas into beneficial habitat and recreational, thereby greatly increasing the GBI capacity of South Essex.

The main types of quarry in the district are sand and gravel deposits which contribute to development and infrastructure projects within Greater Essex. Rochford houses most of the Brickearth deposits for the County, alongside Hambro Hill, a dormant sand and gravel quarry. Thurrock houses three active mineral extraction sites alongside a land-point for marine dredge aggregates.

For example, three unused quarries have been identified as flagship schemes considered to offer a great opportunity to deliver beneficial biodiversity after-use (Mineral site restoration for biodiversity 2016).

These sites are exemplary projects that can show the way for many other mineral and waste site restoration schemes in the area, to be planned well in advance, and designed to offset any deficit in local need and/or existing provision.

There are also a number of waste management sites in the area. Development proposals will be assessed on the potential to enhance and/or protect geodiversity and biodiversity, including Green Infrastructure.

The Green Grid Strategy recommends re-use of waste disposal sites (former mineral sites) in line with the geological legacy of Basildon and Castle Point to expand existing country park facilities close to Wat Tyler Country Park.

This aims to achieve economic and social benefits from the extraction industry through sensitive planning and design of after-use of mineral and landfill sites which could make a significant contribution to the Green Grid network. It also recommends Woodland establishment as a cost-effective way to regenerate industrial wasteland including for contaminated land.

Sustainable waste management is a function of green infrastructure. Incorporating existing and new waste management sites into South Essex's Green Infrastructure should consider health and the environment, such as by increasing recycling, moving away from landfill, and linking infrastructure.

4. Renewable Energies

Solar and wind energies, and biomass conversions are playing an important role to reduce greenhouse emissions.

South Essex benefits for being in a strategic location to produce renewable power. We will balance any emissions by schemes to offset an equivalent amount of greenhouse gases from the atmosphere, such as planting trees or using technology like carbon capture and storage in order to comply UK's 2050 net zero target.

FIG.16 Agricultural Land at Sutton Hall, Rochford

FIG.17 Wind Farm

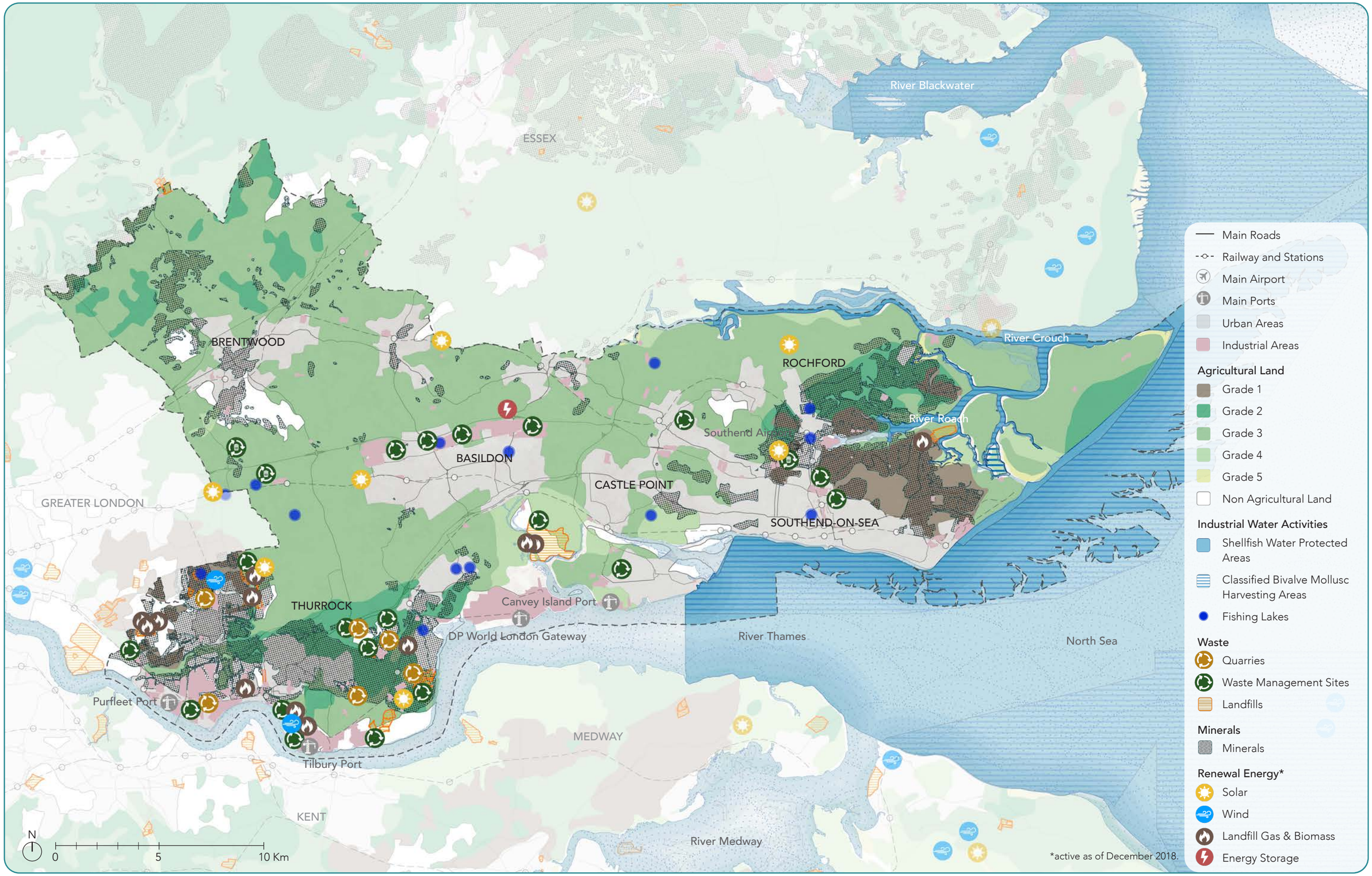


FIG.18 Productive Landscapes

2.5 Connectivity

Active Travel and Recreational Routes

Active travel is good for our quality of life, physical and mental health. It benefits our local environment and productivity, whilst reducing costs to the public purse.

Active travel routes provide opportunities to access open space for both sport and recreational purposes. South Essex's active travel routes comprise Public Right of Ways (PRoWs) and cycling networks. It's PRoWs and cycling network, and the coastline, incorporating the England Coast Path, are widely appreciated by local communities and visitors alike, making valuable contributions to its biodiversity and economy.

The vast footpaths, bridleways and bypasses networks provide access from settlements to the countryside and the coast, as well as links between green spaces, towns, villages and places of employment.

The PRoW network requires greater maintenance to improve access and connect the local communities better with their environment. The most common issues are identified in the Essex Rights of Way Improvement Plan.

The National Cycling Route running through Thurrock and Basildon, alongside Southend-on-sea's cycle routes provide some good individual routes. However, the overall cycling network is largely fragmented throughout South Essex. The Highway Authorities are developing Local Walking and Cycling Infrastructure Plans and programmes and Rights of Way Improvement Plans, which will prioritise the development of the PRoWs and cycling network over the coming years.

Ecological Connectivity

South Essex is a mosaic of fragmented ecosystems both landscapes and seascapes, where wildlife has less freedom to roam and free-flowing rivers are rare. Segmentation of natural landscapes causes limited ability for wildlife to migrate, disperse, mate, feed and thrive, leading to a reduction of overall habitat area and quality, increased isolation of small habitat patches, and increased disturbance associated with artificial boundaries of habitat fragments (UN Environment Frontiers 2018/19 report).

Scientific research overwhelmingly demonstrates that connected habitats are more effective in preserving species and ecological functions. Ecological connectivity sustains vital processes such as productivity, pollination, decomposition, and nutrient and biochemical cycling. Well-connected habitats allow species to migrate to new habitats, especially when they need to adapt to climate change.

As long linear features on our landscapes, roads, highways and railways have the potential to become ecological corridors, however they currently create barriers to movement that fragment and isolate species and habitats.

Direct loss of habitats and species can be mitigated with the implementation of appropriate planning and implementation measures, including innovative methods on how to achieve connectivity across boundaries and how to address the challenges that are specific to transboundary conservation. Often forgotten opportunities lie in historic gardens, military sites, restored landfill or quarries, and ex-industrial sites to provide extensive areas for ecological improvement and connectivity. Agriculture areas also provide vast opportunities.

FIG.19 Footpath along top of sea defense, Wallasea Island

FIG.20 Active Travel, Southend-on-sea

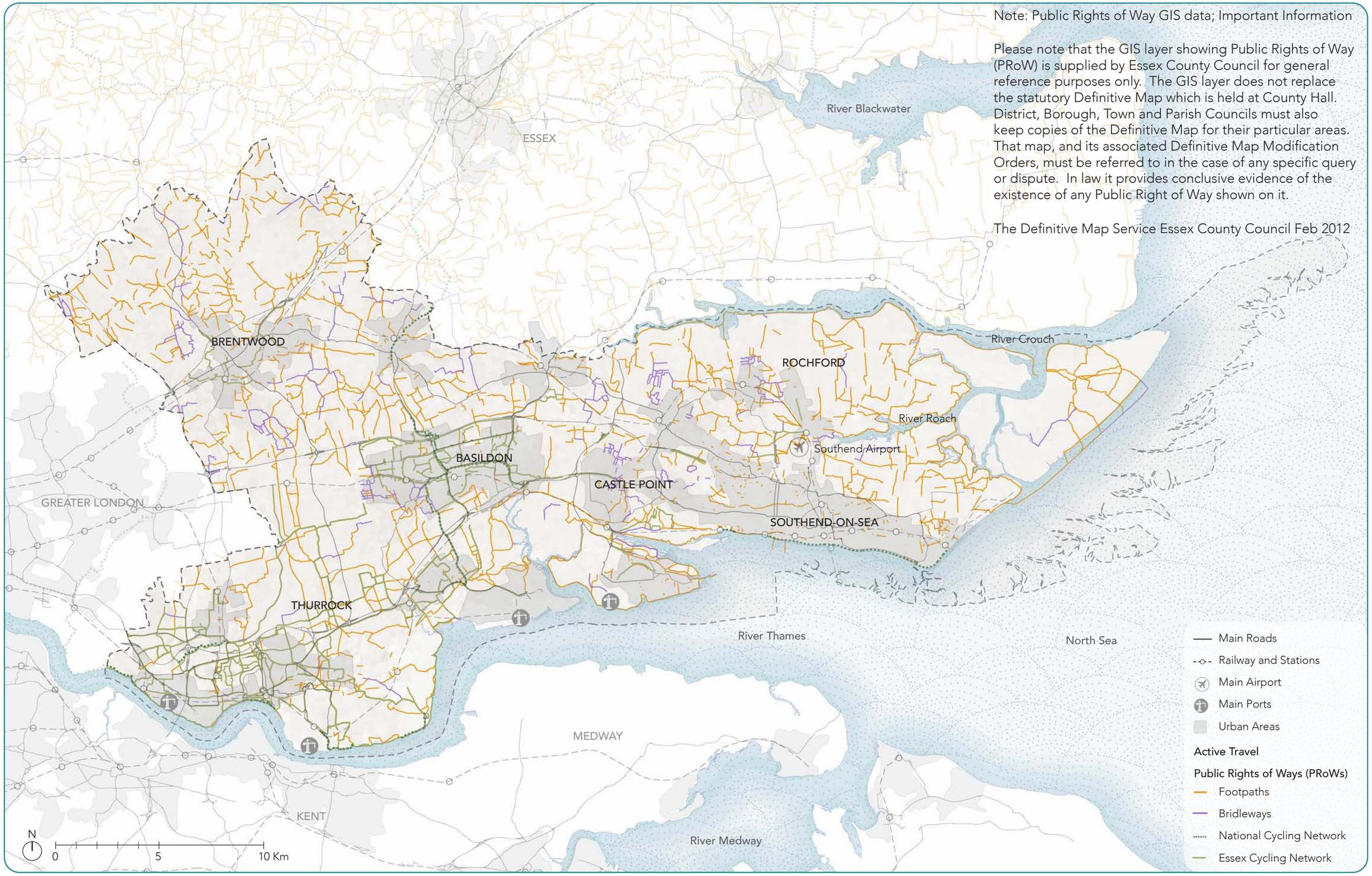


FIG.21 Active Travel and Recreational Routes

2.6 Conservation

Biodiversity

The UK was the first country to produce a national Biodiversity Action Plan (BAP) as a response to the 1992 Convention on Biological Diversity in Rio de Janeiro. The UK BAP described the biological resources of the country and provided detailed plans for conservation of these resources. Action plans for the most threatened species and habitats were set out to aid recovery.

The UK Post-2010 Biodiversity Framework (2012) succeeded the UK BAP due to a change in strategic thinking following the publication of the CBD's 'Strategic Plan for Biodiversity 2011–2020' and its 20 'Aichi Targets', at Nagoya, Japan in October 2010, and the launch of the EU Biodiversity Strategy (EUBS) in May 2011.

The UK BAP lists of priority species and habitats remain an important and valuable reference.

The Essex BAP is more detailed and focuses on specific objectives for those species and habitats within our environs that are of local significance. The intention of the Essex BAP was to inform detailed plans at local level.

South Essex comprises the following habitats and targeted species action plans. Whilst all species are not currently found in South Essex there is the potential to enhance habitat and grow the population of these targeted species, along with protected species identified by Natural England:

- Habitats:
  - · Hedgerows
  - · Ancient Woodland,
  - · Cereal Field Margins,
  - · Coastal Grazing Marsh,
  - · Seagrass Beds,
  - · Heathland,
  - · Old Orchards,
  - · Reedbeds,
  - · Saline Lagoons, and
  - · Urban Areas.
- Targeted Species in Essex:
  - · Plants: Hog's Fennel, Native Black Poplar and Oxlip.
  - · Mammals: Brown Hare, Dormouse, Harbour Porpoise, Pipistrelle Bat and Water Vole, European Otter.
  - · Birds: Bittern, Grey Partridge, Skylark, Stone Curlew, Song Thrush.
  - · Invertebrates: Bright Wave Moth, Desmoulin's Whorl Snail, Fisher's Estuarine Moth, Heath Fritillary, Hornet Robberfly, Shining Ramshorn Snail, Shrill Carder Bee and Stag Beetle, White Clawed Crayfish.
  - · Vertebrates: Great Crested Newt, Allis, and Twaite Shad.
- Protected Species:
  - · In accordance with the Natural England Standing Advice for Protected Species.

FIG.22 Skylark

FIG.23 Stag Beetle

FIG.24 Water Vole

FIG.25 Oxlip

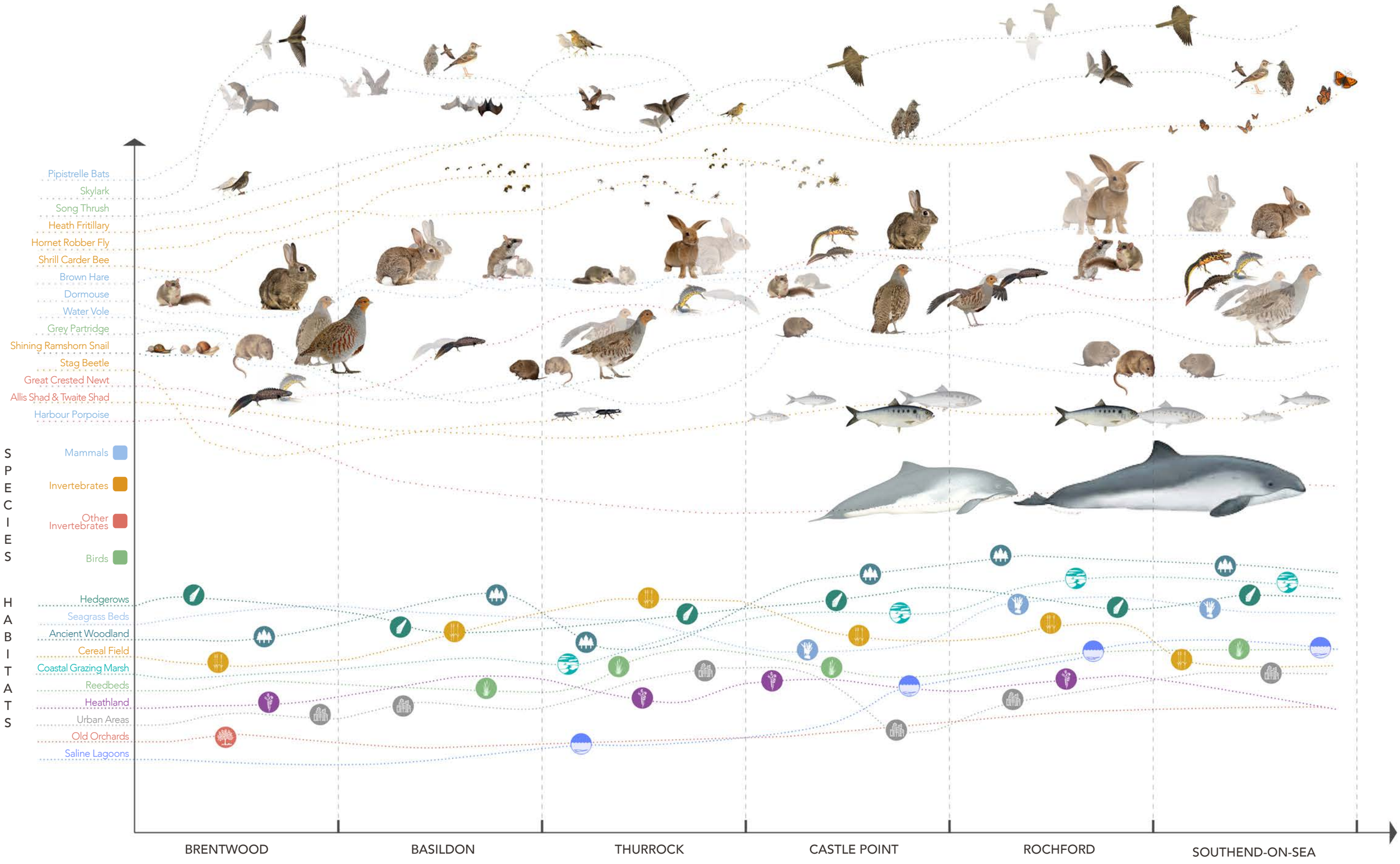


FIG.26 Priority Habitats and Targeted Species found in South Essex

Protected Sites

Our planet is home to threatened habitats and species. Our wild places are scarce, small and isolated. Nowadays there is plentiful research around the globe proving that a healthy, wildlife-rich natural world is essential for our wellbeing and prosperity.

There are a wide range of national and international protected habitat sites across South Essex, including the following designations:

- The Ramsar Sites at Foulness, Crouch and Roach Estuaries, and Benfleet and Southend Marshes are wetlands of international importance which contribute to a global network of protected habitats.
- Natura 2000 is a network of sites selected to ensure the long-term survival of Europe's most valuable and threatened species and habitats.
    - · Special Areas of Conservation (SACs) ensure that our designated natural habitats are maintained or, where appropriate, restored to a favourable conservation status in their natural range.
    - · Special Protected Areas (SPAs) ensure that our most suitable territories are designated to support our threatened species and migratory bird species.
- Sites of Special Scientific Interest (SSSIs) in South Essex are designated sites for wildlife and natural features supporting many characteristic, rare and endangered species, habitats and natural features.
- The Local Wildlife Sites (LoWSs) are key components of ecological networks making up a web of stepping stones and corridors for wildlife.
- Local places with special interest for wildlife or geological features are designated under Local Nature Reserves (LNRs). They offer people opportunities to learn about our nature or simply enjoy it, as well as provide an important contribution to South Essex's biodiversity.
- The Essex Coast RAMS as a partnership between Essex Councils and Natural England to raise awareness of protected birds along the Eastern Coastline have produced a Recreational Disturbance Avoidance and Mitigation Strategy. The aim being to prevent bird and habitat disturbance for recreational activities.
- The sea is home to rare, threatened or declining habitats and species. These habitats and species are protected under Marine Conservation Zones (MCZ).
    - · Swanscombe MCZ protects intertidal mudflats and tentacled lagoon-worms, and Blackwater, Crouch, Roach and Colne Estuaries MCZ protects extensive areas of mudflats and saltmarsh, which support a wide range of species including Brent Goose and Curlew.
    - · The Upper Thames Estuary has been recommended to be designated as MCZ.

FIG.27 Two Tree Island: SSSI and LoWs

FIG.28 Crouch River: SPA, SSSI, SAC, RAMSAR, LoWS and MCZ

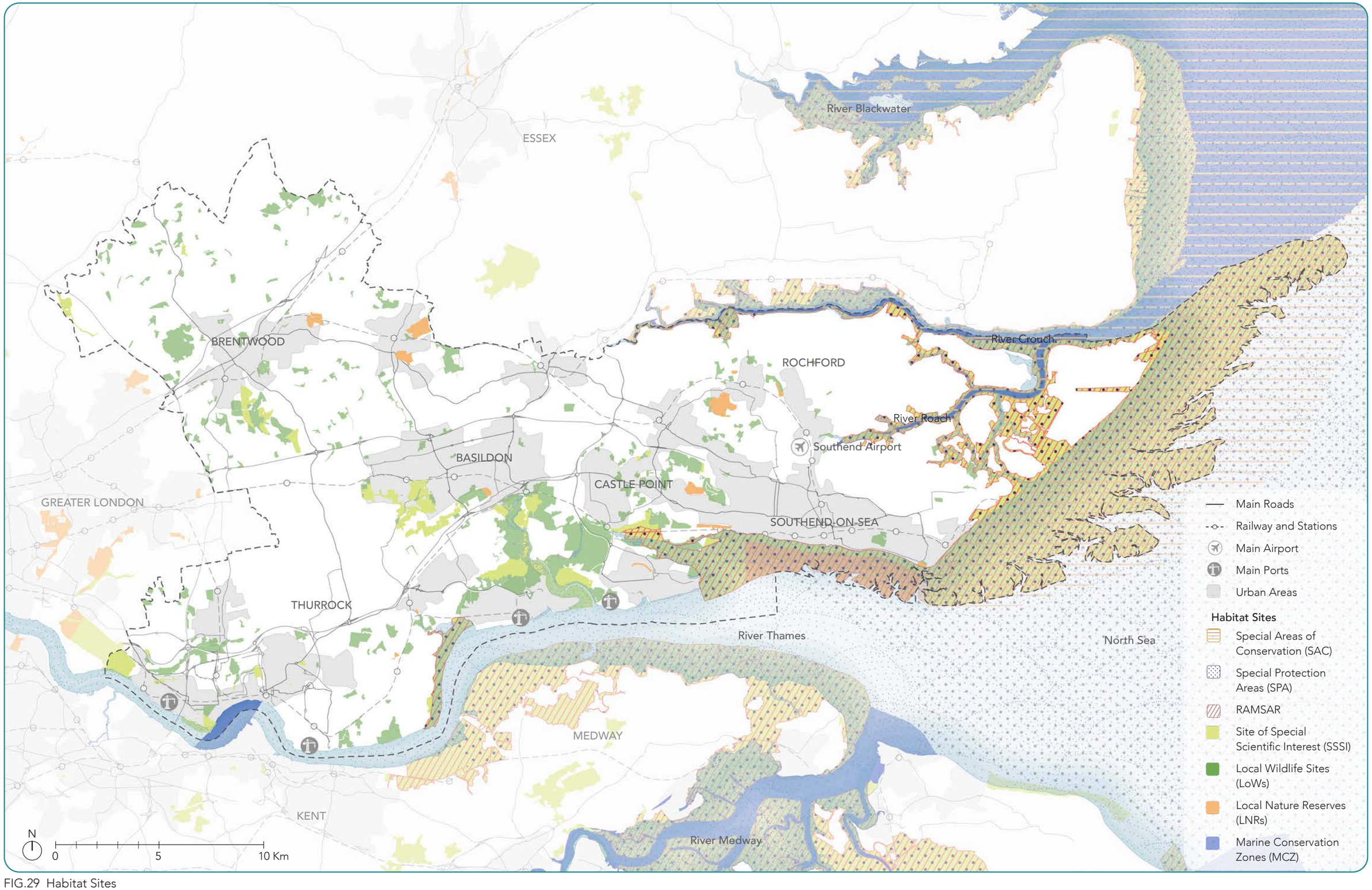


FIG.29 Habitat Sites

2.7 Health and Wellbeing

Open Space Typology

Open space with public value takes on many forms, from formal sports pitches to open space within a development, linear corridors, or country parks. Open space provides health and recreation benefits to people living and working nearby, have an ecological value and contribute to green infrastructure (National Planning Policy Framework par. 171), as well as establishing an important part of the landscape and setting for the built environment. In addition, our open space is an important component in the achievement of sustainable development (National Planning Policy Framework par. 7-9).

The now superseded PPG17 definition of open space: 'it should be taken to mean all open space of public value, including not just land, but also areas of water such as rivers, canals, lakes and reservoirs which offer important opportunities for sport and recreation and can also act as a visual amenity' is of particular relevance to this Green and Blue Infrastructure study.

The definition of Public Open Space (POS) refers to the public accessibility and permitted use of the space rather than it being a reference to private or public ownership and maintenance responsibility for the space.

Local Planning Authorities (LPA) will assess the need for open space and opportunities for new provision in their areas. In carrying out this work, they have a duty to cooperate where open space serves a wider area and the following criteria:

- Location and integration,
- Connectivity,
- Quality and Character,
- Design,
- Quantity,
- Funding and implementation,
- Sustainability and environment,
- Identity and sense of place, and
- Health and wellbeing.

While each LPA may use slightly different definitions in their POS standards, South Essex provides a unified assessment of provision by grouping POS in the following categories:

- Natural and Semi-natural,
- Parks and Gardens,
- Amenity Green Space,
- Play and Sport Provisions (Children and Teenagers, and Sports Provisions) ,
- Allotments, and
- Green Corridors.

The South Essex GBI Study Baseline Report 2019 provides further information in the POS categories.

FIG.30 Children's Play Area at Hannakins Farm Park, Basildon

FIG.31 Warley Park, Brentwood

FIG.32 Community Allotment, Southend-on-sea

FIG.33 Belton Hills, Southend-on-sea

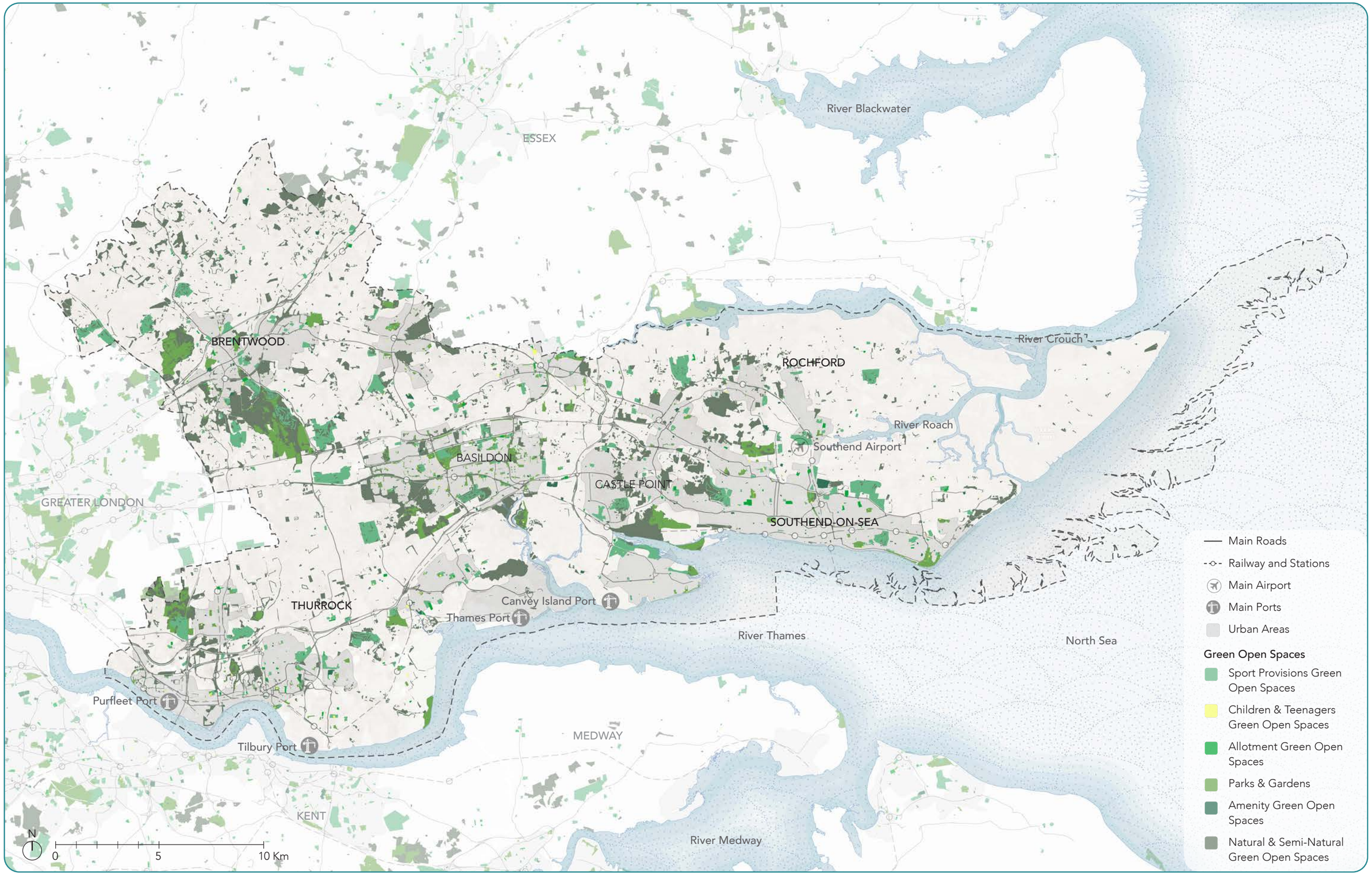


FIG.34 Open Space Typology

Recreational Activities

Outdoor recreation across South Essex covers a huge range of activities from bird watching, kite flying to walking and sailing. The locations also vary from close to home to far away.

South Essex provides great opportunities for outdoor recreation due to the outstanding marine and coastal environment, as well as the rich inland landscapes, parks and gardens. There is high participation of outdoor activities across South Essex with landscapes highly valued among local residents and visitors alike.

Habitat sites and water activities are at the heart of recreation management, and show that habitat conservation and public enjoyment are not only compatible but complementary.

Ongoing work protecting and managing South Essex's natural assets needs to be optimised and enhanced in order to encourage recreation in suitable locations, with activities based on the specific characteristics of the area and the potential of a particular place to provide a good array of recreational activities.

The main recreational activities are grouped in the following categories:

- Water activities along the coast or on rivers such as sailing, water craft or beach based activities such as sun bathing or swimming - include the following locations:
    - · Beach
    - · Marina
- Land activities such as walking, orienteering, running, picnicing with in the following:
    - · Public Rights of Way
    - · England Coast Path
    - · Parks, Landscapes and Gardens
- Bird watching take place with in areas typically managed by:
    - · RSPB
    - · Essex Wildlife Trust
    - · Woodland Trust
- Sites that promote cultural and historic activities in South Essex include the following:
    - · National Trust sites
    - · Explore Essex sites
    - · Vineyards
- Its landscape provides an ideal setting for golf.
- Open skies also attract people to enjoy a range of flying activities, including:
    - · Kite Surfing
    - · Kite Flying
    - · Airfield based activities

FIG.35 Thorney Bay Beach, Castle Point

FIG.36 Wackering Boatyard, Rochford

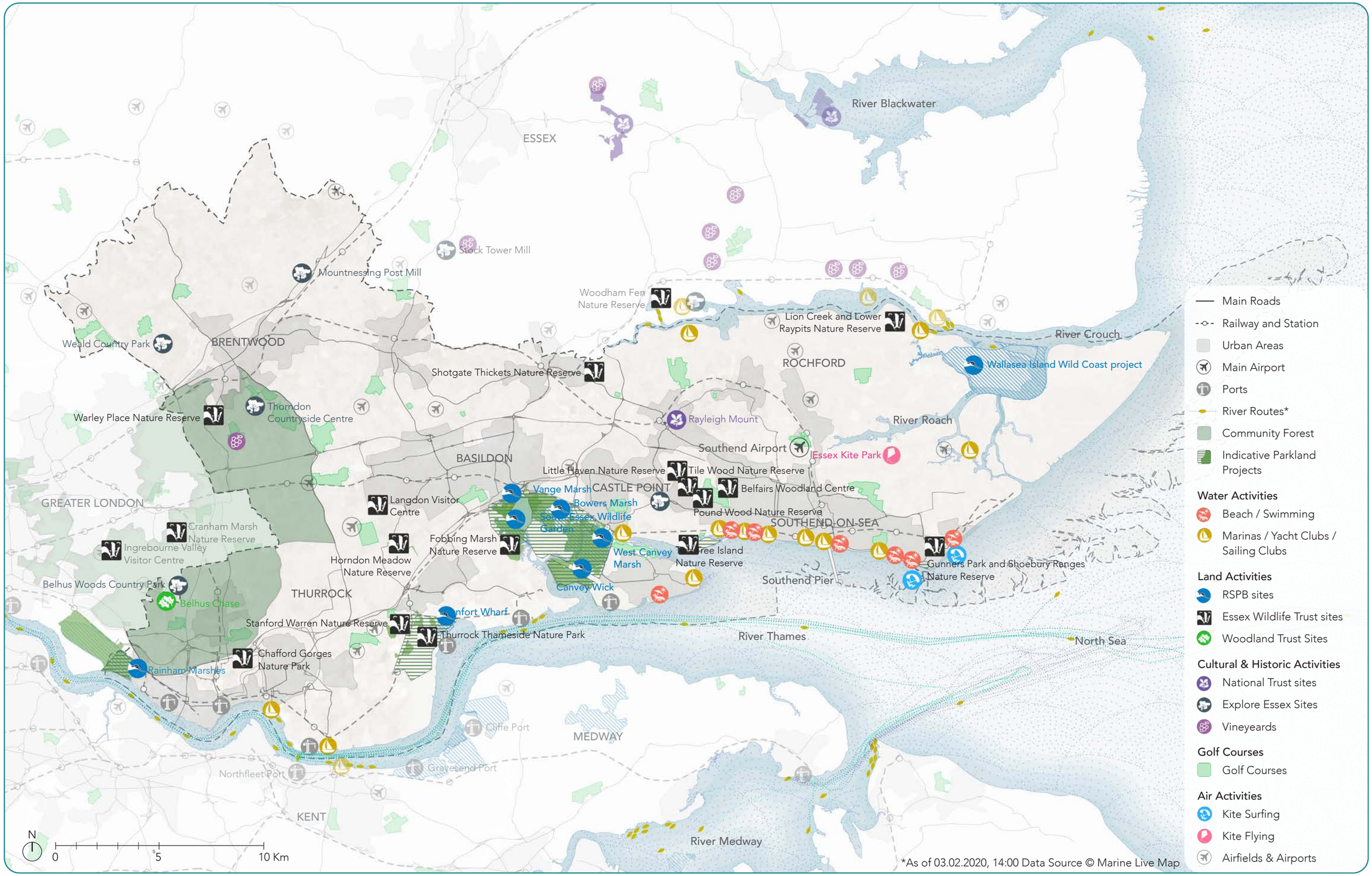


FIG.37 Recreational Activities

Access to Green Open Space

South Essex aims to protect and improve its community's health and to address inequalities by actioning the provision of more favourable environmental conditions.

Having nature close to urban areas to provide a daily experience of wildlife near to people's homes is essential and helps boost physical and mental wellbeing. These green, open spaces are local parks, public gardens and playing fields, as well as any space where there are trees or planting. Therefore, accessible green open space is considered where it is located close to people's homes, easy to walk to, is physically accessible, safe to use, and provides well-maintained facilities.

By identifying where these accessible natural sites are, we can understand the current provision and gaps across South Essex.

Natural England's Accessible Natural Greenspace Standard (ANGSt) provides a benchmark for locating green open space so that it is near to where people live.

The study undertaken on accessibility to green open space overleaf is based on the ANGSt standard where no person should live more than 300m from their nearest area of natural green space of at least 2ha in size.

This exercise is not however intended to query local standards which have been developed with local knowledge, but it is rather used to inform the GBI strategy across South Essex. The intent is to gather a coordinated impression of POS provision across the study area, as well as identify any areas which would benefits from future design proposals forming part of this infrastructure study.

The adjacent map reveals the access to green open space in the following urban areas, includes:

- Brentwood has reasonably good distribution of POS, with the south-west areas of the Borough being very well provided, and only some areas in the centre of Brentwood and in the satellite, settlements being outside the 300m catchment area from a POS;
- Thurrock has a good distribution of POS across the Borough, however there are substantial gaps with areas without access to a POS within 300m;
- Basildon has a good distribution of a variety of POS typologies with approximately 90% of the urban area complying with the 300m ANG Standard;
- Castle Point borough demonstrates significant room for improvement in access to open space, with an extensive residential area that does not have access to a POS within 300m. Although it has some large parks, these are at the periphery of the urban areas;
- Rochford has a reasonable distribution of POS, with approximately 75% of the urban area being within the ANGSt standard of 300m from a POS; and
- Southend-on-Sea has a good distribution of POS across the Borough, there are however substantial gaps with areas without access to a POS within 300m.

These findings are further investigated and refined in the GBI strategy considering proposed growth areas, connections and local land uses as well as the sizes and facilities provided by the existing parks.

FIG.38 Queen Elizabeth II Field, Basildon

FIG.39 Hardy Park, Thurrock

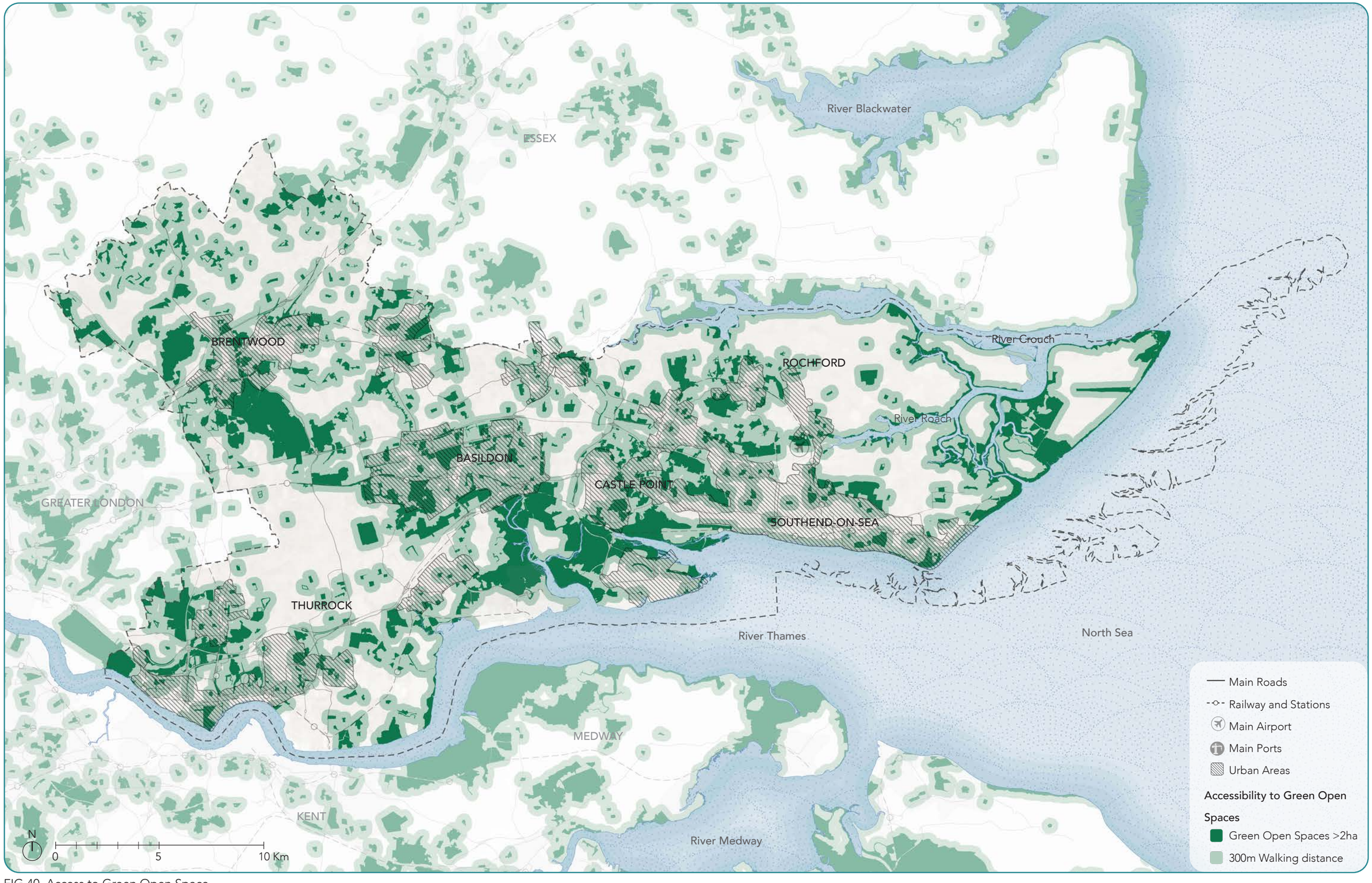


FIG.40 Access to Green Open Space

Access for All

Living close to areas of green space is associated with a range of health benefits. South Essex has a large quantity of green space overall, however access to qualitative green open spaces can be difficult for part of the population.

By addressing and identifying why certain groups of people are less likely to access green spaces is important so we can provide beneficial environmental conditions.

There is significant and growing evidence on physical and mental health benefits of green spaces. Research shows that access to green space is associated with better health outcomes and income-related inequality in health is less pronounced where people have access to green space.

Access to green open space is not equal across the population of South Essex. Deprived areas such as Southend-on-Sea, Canvey Island, Tilbury and Grays, also lack green space provision. These areas therefore have less opportunity to gain the health benefits of green space compared with people living in the least deprived areas of Brentwood or Basildon, which ranks as a deprived area but has good access to green open spaces.

Local Authorities play a vital role in protecting, maintaining and improving local green spaces and can create new areas of green space to improve access for all communities. Such efforts require collaboration across different parts of the Local Authority and beyond, particularly public health, planning, transport, and parks and leisure (Local action on health inequalities: Improving access to green spaces, Public Health England 2014).

A Day in the Life

Imagine a South Essex where the green and blue infrastructure integrates into the fabric of its urban areas and where access to the beauty of the countryside is never more than a short stroll away. Where green and blue Infrastructure establishes a convenient way for the community to travel between its destinations and open space, and all experienced through a lush, green living corridor with essential sustainability credentials.

Whilst convenient access to open space brings considerable health and wellbeing benefits, it is not just about having green routes, but also the multi-functionality that is layered through networks of natural and semi-natural features, green spaces, rivers, street trees and parks, that deliver a range of ecosystems that positively contributes to the social, economic and environmental wellbeing of the place.

Footpaths, cycleways and even bridleways would connect homes with town centres, recreation with community gardens and allotments, sports with play, natural landscapes with agriculture, the seashore with industry, even educational programmes with art and culture that encourage hard to reach groups to be more active. Convenient routes that inspire the community to leave the car at home and cycle, walk and use e-personal mobility devices to travel to work, see friends, do a bit of shopping or head to the coast.

These routes are a hive of biodiversity and integrate sustainable drainage, trees and natural systems to help cool the heat island effect, reduce flood risk, improve air and water quality, sustain local food production and encourage activity where walking, running, cycling, and even canoeing on waterways become the normal way to get around. Even the ability to ride a horse between countryside and urban areas could be realised once again.

Whilst these corridors will aim to provide convenient access to many destinations on a day to day basis, the connected Green and Blue Infrastructure also has the potential to become part of an education and tourism overlay, where themed trails and experiences broaden the appeal of the district, including opportunities to walk and cycle on trails for heritage, waterways, bird watching, views, the night sky, art and culture, agriculture, shoreline, industry or woodlands, amongst many other opportunities to experience the eclectic beauty, history and culture of South Essex.

FIG.41 Belton Hills, Southend-on-sea

FIG.42 Church Hill, Thurrock

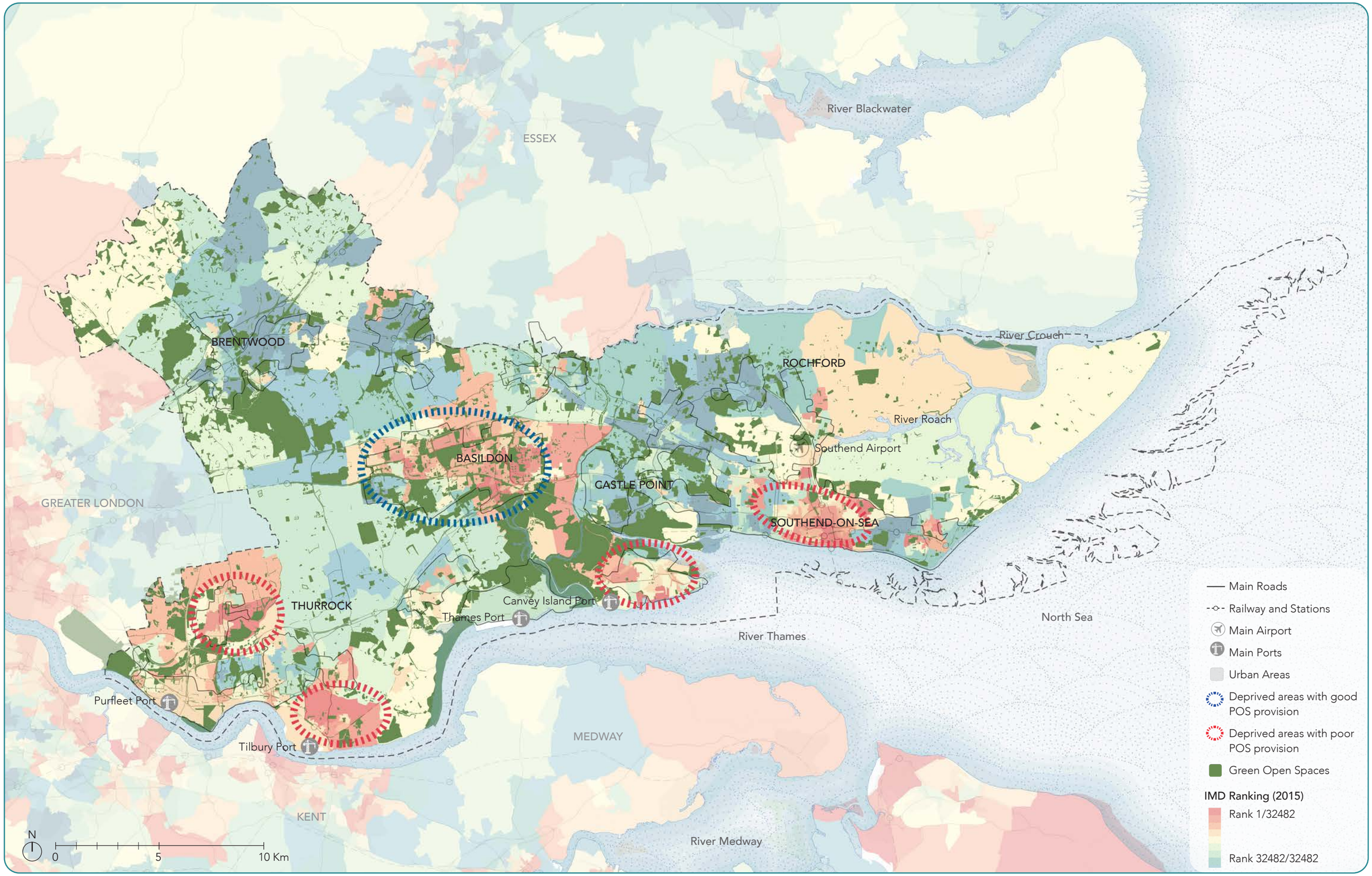


FIG.43 Access for All

2.8 Growth and Development

South Essex 2050 Vision

Population growth is a global challenge with 68% of the world's population projected to live in urban areas by 2050 (UN data). South Essex is not far from this statistic and is currently underpressure to deliver many more new homes. The plan is therefore to deliver high quality places where people can comfortably live, visit and do business.

South Essex 2050 Vision has the ambition to become a leading destination for businesses to start and grow and is already home to a wide variety of exciting and innovative industry. The following priority sectors include:

- Advanced manufacturing;
- Construction;
- Environmental technology and energy;
- Digital and creative services;
- Financial and business services;
- Life science and health care; and
- Transport and logistics.

The vision is for South Essex to become a Green and Carbon Neutral Environment with a specific need to take into consideration the effects of climate change.

Climate change is expected to increase the risk of flooding, hence the South Essex Plan will ensure that flood mitigation and adaptation measures are implemented alongside any new development.

Rapid and poorly designed development can contribute to an increase of carbon dioxide emissions. However, the South Essex Plan aims to achieve zero carbon developments by ensuring high standards of energy efficiency are implemented.

Enhancing, preserving, and maintaining our natural environment is essential to increasing standards in the area's quality of life. The South Essex Plan looks to enhance and connect our most precious habitats, due to their importance for ecological and recreational purposes, as well as integrate nature within our urban areas and connect people with their environs.

The Association of South Essex Local Authorities (ASELA) has identified the following opportunity areas in order to investigate their potential for growth:

1. A12/A129 Crossrail Corridor.

2. A127 Corridor.

3. London Southend Airport.

4. Lower Thames Crossing.

5. Thurrock Thameside / A13 Corridor.

6. River Thames and Estuary.

Green Belt

Around 71% of South Essex is part of the Green Belt, which is under threat from development.

The fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence (section 9, The National Planning Policy Framework, Department for Communities and Local Government: March 2012).

When planning new development within the Green Belt, we are encouraged to meet the following purposes:

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

Should the area no longer serve the stated purposes, we may consider to release this land for other more appropriate designation within the Local Plan process.

Local Planning Authorities have done their own assessments for Local Plans, and re-assessment is only undertaken when a Local Plan is reviewed.

Access to Green Open Space

With the South Essex 2050 Vision identifying a need to become a Green and Carbon Neutral Environment, there is a cohesive need to preserve its natural environment, rejuvenate connectivity between people and their natural surrounding and in doing so support improvements to the quality of life for people and wildlife. There is an essential need to:

- Improve access and connectivity across existing landscape typologies. For Instance, the Integration of green corridors through existing agricultural land that would otherwise exclude access for many.
- Assess and improve quality and provision of green open space within existing urban areas.
- Use standards to establish improved integration of green open space within new developments.

The use of AngSt standards from Natural England's Accessible Natural Greenspace Standard (ANGSt) provides a benchmark for locating green open space so that it is near to where people live.

'The National Planning Policy Framework' (NPPF) requires local planning authorities to make sufficient provision for conserving and enhancing the natural, built, and historic environment, including landscapes and green infrastructure, through sustainable development and strategic policies within the local development and neighbourhood plans.

These standards provide guidance for new development but should also be used as a benchmark for improving existing urban areas.

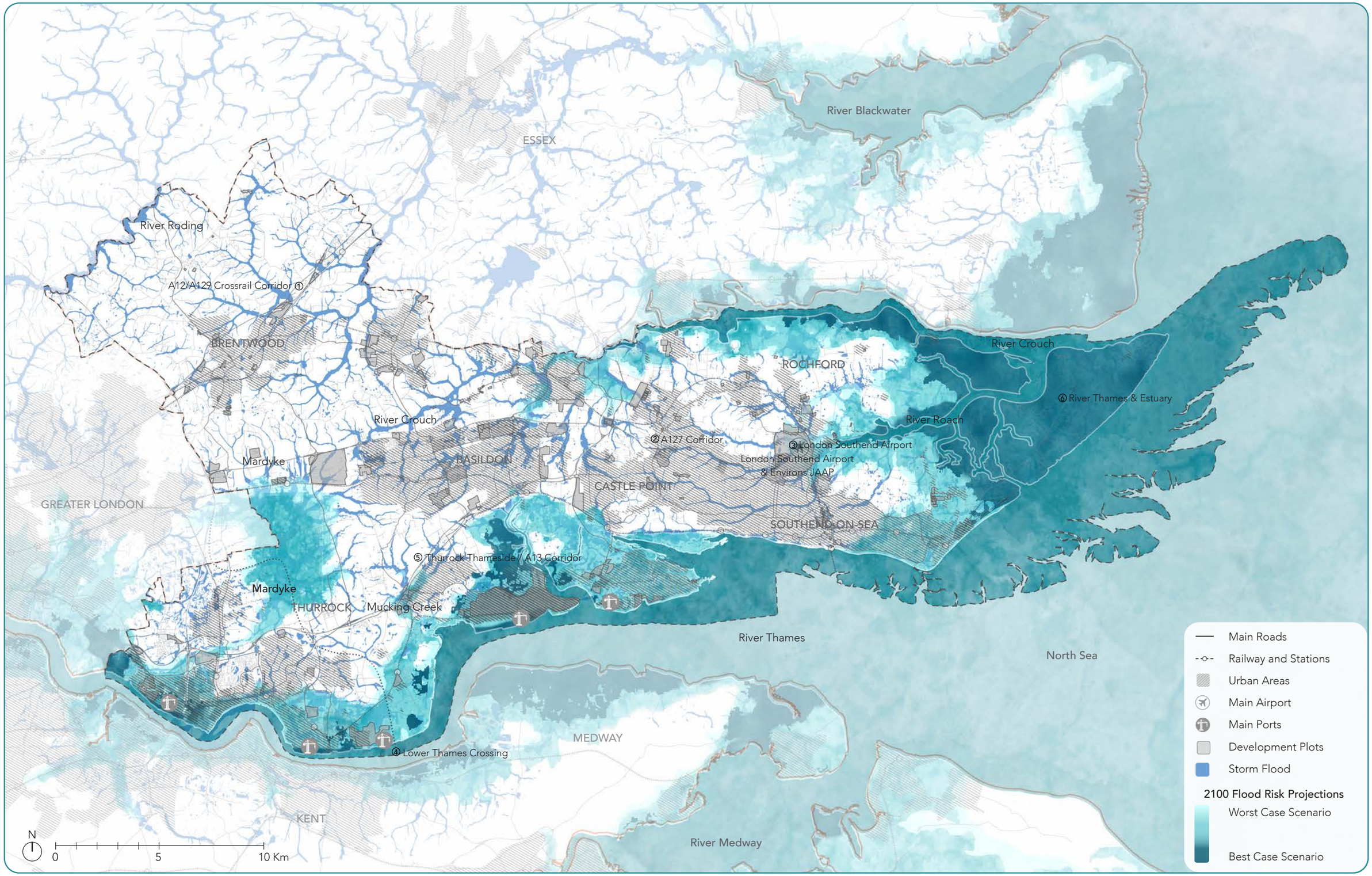


FIG.44 Projected Flood Risk and Proposed Development

2.9 Sustainability

Living infrastructure requires management and maintenance, and constant review to ensure sustainability, resiliency and adaptability in the long-term. We must be stewards of the land, that utilise responsible conservation and sustainable practices to protect the fragile South Essex environment.

In order to ensure high-quality and effective green and blue infrastructure in the long-term, a strategy must be put in place. Lead officers within the ASELA team and other local green and blue infrastructure stakeholders, should therefore actively engage with each borough to ensure that the importance of GBI is understood and coordinated in Local Plans.

Furthermore, some opportunities to deliver improved or extended green and blue infrastructure will lie with other partners. For example, providing cycle routes within green links could help to meet objectives within the Transport Strategy. Thus, GBI green objectives will be coordinated with the other workstreams and studies being undertaken by the ASELA.

The Environment Bill strongly supports GBI action to be taken at a local level. The DEFRA paper: 30 January 2020: Environment Bill 2020 policy statement, updated on 13 March 2020, explains the importance of delivering environmental ambition at the local level. It states that local government will be empowered to play a fundamental role in delivering the environmental action needed in local areas, and it bolsters the environmental role of local leaders by providing additional powers and flexibilities to deliver action.

The following actions will be undertaken to ensure action:

- improved and increased powers to take more effective action to address local priorities and deliver environmental change
- providing more certainty and simplicity for developers through the planning system by mandating biodiversity net gain, and ensuring that all new developments enhance biodiversity and help deliver thriving natural spaces for communities
- ensuring that producers can be held responsible for the full net costs of managing products at end of life, reducing local authorities' financial burdens from waste management, including litter collection
- stronger abilities to improve health and social outcomes for local citizens
- supporting local authorities as place shapers through new tools and data for effective spatial planning

The Bill backs an approach that will support strong local government leadership to deliver environmental improvements that will reverse decades of biodiversity loss and improve air quality. It commits to funding new burdens on local authorities that arise from the Bill, and working in partnership with local government, businesses and wider stakeholders on the implementation of these measures, to identify and secure the capacity and skills to deliver a cleaner, greener and healthier environment.

FIG.45 Twilight View of Canvey Island

3 Stakeholder's Workshop

Attendees Feedback

On March 3rd 2020, the Consultant and Client team organised a Stakeholder's Workshop following on from the issue of the Stage 2 interim report. The Consultant team gleaned comments and ideas from the stakeholders on the report and on any other information they may hold that positively contributed to the South Essex GBI Study.

Attendees were divided into six groups and ideas were workshopped through the following activities in order to be recorded and integrated into the final study:

1. The importance of GBI

The attendees were asked to review the nine themes identified as the key drivers to think about GBI, indicate their two top priorities, and identify any missing themes.

All groups acknowledged all themes, however, those considered most important were: Climate Change, Connectivity (social and ecological), Health and Wellbeing, Conservation, and Growth and Development. In addition, inclusivity and education were suggested themes that could benefit the study.

2. Challenges discussion

Following on from a presentation providing an introduction, background to the study, and overview of the challenges for South Essex's GBI, the attendees were encouraged to discuss whether the Consultants review of the emerging maps and analysis resonated their local and expert understanding to see what else should be considered. The discussion provided the following outcomes:

- Challenges:
  - · Conflicts with access to green space between leisure and habitats. This is especially true on the waterfront where industry / sensitive habitats prohibit public access or designations and policies restrict expanding activities (e.g. RAMS);
  - · High grade agriculture in the area is often in conflict with habitats;
  - · There are already many assets in SE, the challenge will be knitting them together. e.g. connecting hedgerows, ancient woodlands, habitats;
  - · Pressures for burials on the open space network;
  - · Improve access to agricultural land;
  - · Behavioural changes;
  - · Costs for flood mitigation are unsustainable – EA looking at a possible standard;
  - · Need to consider all types of flood risk not just coastal flooding; and
  - · Poor public open space – may need to retrofit solutions to area with poor access.
- Priority areas:
  - · Sense that many proposals are already in existence (and may have been for several years) but many need pushing forward. e.g. Thames Chase Plan for linking the Mardyke Valley;
  - · Langdon Hills and surrounding area appear to be overlooked;
  - · Need to be looking at routes and initiatives away from the coastline, strategy shouldn't be all about opening up the waterfront;
  - · Deprived areas are priority areas;
  - · Waterways and river corridors; and,
  - · Allotments – can be used to promote habitat (need for policy changes to allow this to happen).
- Other layering / data:
  - · Habitats with flooding to understand potential habitat loss in the future (alongside TE2100 plans?), Reference TE2100 estuary edges;
  - · Development sites as a layer on accessibility to understand where potential interventions could be made;
  - · For active travel routes, highlight where the missed connections are (Refer to Thurrock Study);
  - · Accessibility and agricultural land.

3. Big ideas, initiatives and policy implications

Following on from a presentation of the vision, objectives and spatial strategy, the attendees were asked to both individually and collectively complete idea cards to describe opportunities ranging from capital and infrastructure projects, to policy and governance actions; being near, medium or long term; span from simple to highly complex tasks; or ranging in stage from planning, to execution, to operation. The outcome of this activity is summarised in the following:

- Programming and policies:
  - · Education on habitats and wilding. 'right tree, right place' – tree planting can sometimes harm habitats. e.g. natural re-wilding is a more effective carbon sink and habitat generator than tree planting in most instances;
  - · Strategies for residential / commercial landowners. e.g. how to green residential

FIG.46 Questionnaires Are Adopted to Gather Feedbacks

FIG.47 URBAN Presenting GBI Maps

FIG.48 Group Discussion in the Workshop

gardens, verges (paving, green walls, planting);

· Promotion of green spaces to the public / tourists to encourage use of existing. e.g. Wayfinding / green routes from stations; and

· Water leisure strategy: Careful management for light touch recreation, e.g. kayaking vs jetskiing.

- Development:

  · Looking at areas of planned growth as an opportunity to bring forward new green spaces;

  · Community Orchards / Allotments;

  · Sharing of Facilities;

  · Large Scale Renewable Energy – but not wind due to protected habitats; and

  · Worth reaching out to the Environment Officer at ECC who is currently running a joint, NERC-funded project between ECC and UEA that seeks to test all Essex Local Authorities' Draft Local Plans against a GBI requirement.

- Habitats:

  · With so much agricultural land, look into opportunities for rewilding and links to recreation. Precedent: Knepp Estate;

  · Migratory fish strategy;

  · Pollinator Plan – Relax maintenance and grow wild spaces;

  · Lead Net Gain Biodiversity Sites;

  · Woodland ridge between Langdon and reserves around Hadleigh is appropriate for tree planting; and

  · Opportunity to connect habitats around Thorndon / Langdon / Canvey Island.

- Routes & connections:

  · Emphasis on the importance of multi-user routes, as these are the most inclusive and encourage the best use of PRoW's. Is there a way to incentivize landowners to create those routes?;

  · Southend: Enhance links with countryside and Rochford for both residents and as a tourism opportunity. Opportunities are Barling Landfill, Wallasea Bridge; and,

  · Cycleways – build on LCWIP initiatives.

- Stewardship:

  · Agricultural Bill could change how we think about stewardship – although current draft doesn't address roaming / rights of way etc.;

  · Importance of remaining committed to TCPA Garden City Principles in new development – especially when these are part of the planning and application stage. Green space cannot be lost to viability requirements;

  · Cross-boundary GBI partnerships: TE2100 to the South / Thames Chase Forest to the west / ECC to the north;

  · Need a higher authority to ensure proposals of GBI study are implemented;

  · Improve information and data collection; and

  · Working with landowners, especially farmers, and introducing land management measures is important to any transformative change.

- Comments on the spatial strategy diagram:

  · Show blue infrastructure and inland water more prominently;

  · Roads and rail are not sufficient habitat connectors;

  · Include the greenland north of Southend-on-sea to the strategy; and

  · Add crossings across River Crouch.

Summary

The workshop provided many good insights into South Essex GBI, for the team to take away and work into the overall strategy. In general, the team was encouraged by the session to carry on with a big vision of creating an all-encompassing green and blue infrastructure, rather than inserting GBI into discrete areas.

The workshop brought out just how complex and multi-layered GBI is in the area; so complex that the lengthy workshop only allowed us just to touch on the many themes involved.

It also revealed how important and beneficial GBI is to all aspects of life, including social, environmental, and economic. Thus, the study structure has been designed to set out the vision, supported with objectives and themes that provide an overarching structure relating to social, environmental and economic benefits. Key moves are drawn out of the themes, that address each one of the comments provided at the workshop. And spatial ideas are addressed within a GBI Layout that is considered first at a South Essex wide scale within Volume 1 of this study, with zoom-in plans for each of the district and borough councils at a more detailed level within this Volume.

FIG.49 Ideas Exchanging Around Tables

FIG.50 Printed Maps for Clearer Presenting

FIG.51 Iconic Opportunity Wheel Printed on Postcards

4 Local Open Spaces

4.1 Local Open Space Typologies

Open space, which includes all open space of public value, can take many forms, from formal sports pitches to open areas within a development, to linear corridors and country parks. It can provide health and recreational benefits to people living and working nearby, have ecological value and contribute to green infrastructure (National Planning Policy Framework par. 171), contribute landscape value to the built environment and to the achievement of sustainable development (National Planning Policy Framework par. 7-9).

In the wider context of planning and policy, the (now superseded) PPG17 definition of open space: 'it should be taken to mean all open space of public value, including not just land, but also areas of water such as rivers, canals, lakes and reservoirs which offer important opportunities for sport and recreation and can also act as a visual amenity.' This definition is of particular relevance to this Green and Blue Infrastructure study.

For the purpose of this study, Public Open Space (POS) refers to the public accessibility and permitted use of the space rather than it being a reference to private or public ownership and maintenance responsibility for the space. It is for local planning authorities to assess the need for open space and opportunities for new provision in their areas. In carrying out this work, they should have regard to the duty to cooperate where open space serves a wider area.

While each authority may use slightly different definitions in their POS standards, to provide a unified assessment of provision, this study has grouped POS in the following categories:

- Parks and Gardens
- Amenity Green Space
- Play and Sport Provisions (Children and
- Teenagers, and Sports Provisions)
- Allotments
- Green Corridors

Natural and Semi-natural

This type of open space comprise woodlands, urban forestry, scrubland, grasslands, wetlands, nature reserves and derelict under-used and neglected land (DUNL's) with a primary purpose of enhancing wildlife conservation and biodiversity within settlement boundaries.

Parks and Gardens

This type of open space includes urban parks, and formal gardens, while country parks can be considered also as natural areas, and are rated according to their size and the facilities they provide.

At the larger scale, from Regional to District Parks, they offer a landscape setting with a variety of natural features and facilities, providing a wide range of activities and informal recreation pursuits. These parks are not only a recreation resource, but because of their tree cover, lakes, streams and other natural features, they are also important wildlife habitats and a landscape resource.

At the smaller scale (2 hectares and below), Local Parks and Pocket Parks are important in providing children's play spaces, court games, as well as opportunities for informal play and passive recreation within walking distance from dwellings.

Amenity Green Space

This type of open space is often found in association with housing areas, where it provides a landscape setting as well as informal recreation in close proximity to residential dwellings. The fine grain quality of this type of open space helps to break up and soften the appearance of urban form and it's often an important element at the neighbourhood level.

The NPPF provides the ability for local communities **to protect green spaces of local significance by applying for their designation as Local Green Spaces in Local Plans and Neighbourhood Plans.**

The designation can prevent new development being permitted on these spaces, when the green area is demonstrably special to a local community because of historic, recreational or wildlife significance.

Churchyards and cemeteries can also be viewed as amenity provision, although they are not included in quantity standards, as they provide important places for quiet contemplation, especially in busy urban areas, and often support biodiversity.

Spaces for Children and Young People

Specific national standards apply for play and sport provisions for children and young people:

Local Areas for Play (LAPs), Local Equipped Areas for Play (LEAP) and Neighbourhood Equipped Areas for Play (NEAPs). These relate to the facilities providing opportunities for play and social interaction for children and young people.

Sports Provisions

The purpose of this category of open space is primarily to provide opportunities for outdoor sports and recreation. It can include both publicly or privately owned facilities such as playing pitches, bowling greens and tennis courts.

Allotments

An allotment is an area of land which can be rented by local people for the growing of vegetables, flowers or fruit. They provide opportunities for people to grow their own produce, and through this, they support health and wellbeing, sustainability and social inclusion as well as an alternative place to relax, especially for apartment dwellers. Allotments and gardens provide a semi-natural habitat for local wildlife and corridors that contribute to the movement of wildlife in the urban area.

Green and Blue Corridors

These corridors are primarily for active use, but include wildlife benefits. They provide environmentally sustainable forms of transport, for travel and leisure purposes, such as walking, cycling and horse riding, and include footpaths along riverbanks and canals, cycleways, bridleways, rights of ways as well as disused railway lines and can be developed into linear parks by the inclusion of other facilities.

FIG.52 Green Open Space Typology

4.2 Local Open Space Capacity Assessment

A South Essex-wide assessment has taken place to identify the performance of existing open space in support of the proposals for this Green and Blue Infrastructure Strategy.

As the study area is so vast and contains hundreds of open spaces, a random sampling method was used to visit open spaces. This was bolstered by visiting as many regional, country and district parks as possible. More detailed analysis will be undertaken at Local Plan level.

The high-level analysis has taken place following the selection of key indicators across a breadth of quality, function, and resilience topics and which have been applied to a representative selection of open space. The outputs from this analysis are provided in schedules within this section of the report.

Indicators

The indicators were selected that best describe the current and future challenges of the open space and were assigned based on making a general assumption during a site visit and are described as follows:

Accessibility & Connections – Can the open space be approached easily from local communities and provide access and inclusivity?

Quality & Maintenance – Does the open space demonstrate an expected level of quality and is it maintained to support this level of quality?

Leisure & Recreation – Does the open spaces provide a range of recreational and leisure facilities to support the local community?

Biodiversity – Does the open spaces include areas of habitat and support a range of wildlife?

Historic Landscape Environment & Sense of Place – Does the open space best represent the historic landscape and features within it. Does the open space reflect well the general sense of place?

Flood Risk & Water Management – Does the open spaces currently incorporate areas for flooding and does it include water management integration, such as swales, rain gardens and attenuation?

Climate Change Adaption – Is the open space in a good place to support climate change. Has this been considered already?

Health and Wellbeing – Does the open space encourage the community to participate in a healthy lifestyle?

Deficiency Areas – Does the community find these open space areas difficult to get to or have to travel a significant distance to get to?

Active and Green Travel Network – Does the open space contribute to an alternative route between community destinations, where walking, cycling or other forms of green travel are possible?

Views & Landforms – Does the open space contribute to the enjoyment of views and promotes beneficial use of the landforms?

Character – Does the open space reflect and support the local landscape character?

Productive Landscape & Economic Opportunities – Does the open space include areas for growing or support local business?

Opportunities for Restoration – Does the open space include opportunities to support restoration and improvements in its landscape?

Urban Greening Opportunities – Does the open space offer opportunities to support urban greening, such as green walls, green roofs and additional planting?

Strategic Bridging Points – Does the open space perform as a strategic bridge over areas that would otherwise be subject to severance, such as rivers, topographic challenges, roads, or rail routes?

Approach & Setting – Does the open space / landscape approach contribute to the setting?

Scoring

The following scoring approach was undertaken:

N/A - Not Applicable

X - No contribution found

√ – Contribution identified and achieves an acceptable level of resource

√√ – Contribution identified and achieves a good level of resource

Open Space Results

The assessments covering Public Open Space in Basildon, Brentwood, Castle Point, Rochford, Southend-on-Sea and Thurrock are included in the following pages and concluded with a gap analysis.

***Thurrock and Brentwood are not included in this stage of work, as they have undertaken separate studies on green and blue infrastructure within their respective areas, but have been included in this section just as an overview.**

Basildon

TAB.3 Basildon Local Open Space Capacity Assessment

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Hannakins Farm Park	√	√	√ √	√	N/A	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Park associated with Community Centre. Play area and sports fields. Brook delineate the boundary on one side.
Stock Broock Country Park	√	√ √	√ √	√	√	N/A	N/A	√ √	N/A	N/A	√	√	N/A	N/A	N/A	N/A	√	Country park with golf course, tennis courts spanning 2 Boroughs. Mature landscape.
Billericay URC Church	√	√	N/A	√	√	N/A	√	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	√	Church with cemetery, overgrown landscape, good for biodiversity.
Mill Meadows	√	√	√	√ √	√	N/A	√	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	Mill Meadows Nature Reserve. Grazed by cattle. Good biodiversity.
Queen Elizabeth II Field	√	√	√	√	N/A	N/A	√	√	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	Park with areas of mature trees and shrubs, play areas and view down the valley.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Lake Meadows Park	√	√ √	√ √	√ √	√	√	√	√ √	N/A	N/A	√	√	N/A	N/A	N/A	N/A	N/A	District type park with large lake, play areas and other sport facilities.
Connecting Footpath	√	N/A	N/A	√	N/A	N/A	N/A	√	N/A	√ √	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Footpath linking residential areas to the Lake Park above.
Norsey Wood	√	√ √	√	√ √	√	N/A	√	√ √	N/A	N/A	N/A	√ √	√	N/A	N/A	N/A	N/A	Norsey Wood. Mature coppiced woodland with picnic area, café and craft shop.
Maryflowers School Fields	√	√	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	√	School fields, unaccessible, but mature landscape surrounding the school.

(Basildon Council has developed an Open Space Assessment of the whole Borough (2010) based on the now superseded PPG17 policy, this was followed by the Basildon Borough Council Open Space Assessment GAP Analysis (2015). See Baseline Report.)

Brentwood

(Only for reference as Brentwood has undertaken their own GBI study.)

TAB.4 Brentwood Local Open Space Capacity Assessment

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
North Road Play Area	√	√	√	N/A	N/A	N/A	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Small play area, addressing deficiency in the city centre.
Lorne Road Nature Reserve	√	X	N/A	√ √	N/A	√	√	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Nature reserve close to Warley Park, with footpath leading into town. Very overgrown and poorly managed.
Warley Park	√ √	√	√	√ √	√	N/A	√	√	√	√	√	√	N/A	N/A	N/A	N/A	N/A	Country park with mature landscape, a range of connecting footpaths, some overgrown.
Cathedral Place Cemetery	√	√	N/A	√	√	N/A	N/A	N/A	N/A	√	N/A	√	N/A	N/A	N/A	N/A	N/A	Linear cemetery with footpath connecting to town centre. Secluded with mature landscape.
Brentwood Sports Ground	√	√	√	√	N/A	N/A	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Private tennis courts and sport fields. Secluded but close to town centre.

Castle Point

TAB.5 Castle Point Local Open Space Capacity Assessment

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Primary Care Centre	√	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Grassed area associated with Health Care Provision.
Bramble Road Play Fields	√	√	N/A	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	School sports fields. Private, no access.
Tewkes Creek	√ √	√ √	√	√ √	√ √	√ √	√ √	√ √	N/A	√ √	√ √	√ √	√	N/A	N/A	N/A	N/A	Tewkes Creek, lovely mix of new and old planting, provides a number of habitats and a peaceful setting.
Smallgains Park	√	√ √	√	X	N/A	√ √	√ √	√	N/A	√ √	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Water barrier and holding area, temporary football fields.
Kismet Park	√	√	√	√	N/A	√ √	√	√	N/A	√	√	√	N/A	N/A	N/A	N/A	N/A	Park with prominent concrete channel. Can this be naturalised? Some mature trees. Can wall backfill be planted?

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Heritage Centre	√	X	X	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A	Cemetery. Some planting. Poor maintenance.
Roscommon Way Highway Verges	X	X	X	√ √	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Naturalistic highway verges. Provide good habitat for butterflies.
Lobster Smack	√	X	X	X	N/A	√	X	X	N/A	X	√	√	√	√	N/A	N/A	X	Lobster Smack. Semi-industrial area under utilised, riverside path too narrow, opportunity for riverside connection to Wat Tyler Centre?
Park by Lady of Canvey	√	√	X	X	N/A	N/A	X	√	N/A	N/A	√	N/A	√	√	N/A	N/A	N/A	Park by Lady of Canvey Church. Mostly grassed, some scrubby edges. Need more tree planting and facilities.
Thorney Bay Beach	√	√ √	√ √	X	N/A	√	√	√	N/A	X	√	√ √	√	N/A	N/A	N/A	N/A	Thorney Bay Beach. Good play area and small sheltered beach. Paddling pool opportunity? Flood wall.
Labworth Memorial Garden	√	√	√ √	X	√	√	√	√	N/A	√	√	√ √	√	N/A	N/A	N/A	N/A	Labworth Memorial Garden. Large grassed area and small area designed as memorial for sitting and contemplating. Beach and Restaurant nearby.
Rectory Road	√	√	√ √	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Rectory Road Park. District type park. Play area, tennis and play fields. Mature trees screening play area and car park.
Brook by Nature Reserve	X	X	N/A	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Channel watercourse.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Little Heaven Nature Reserve	√	√ √	√	√ √	√	N/A	√ √	√	N/A	√	N/A	√	√	N/A	N/A	N/A	N/A	Little Heaven Nature Reserve. A variety of habitats from woodland to grassland. Good footpaths throughout. Wood production.
Thundersley	√	√	√	√ √	√	N/A	√ √	√	N/A	√	N/A	√	N/A	N/A	N/A	N/A	N/A	POS spaces with Play Area and mature trees. Woodland with PRoW between leading to mature woodland area.
St Mary's	√	√ √	N/A	√	√	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Church with old cemetery. Natural watercourse with scrub vegetation and mature trees.
Shipwrights Wood Park	√	√	√	√	√	√	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Shipwright Park with Play Area and large grassed area. Adjacent woodland.
Private Football Fields	√	√	N/A	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Private football fields. Mature trees and adjacent woodland.
Private Football Fields	√	√	N/A	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Private football fields connected with school.
Thundersley Church	√	v	N/A	√	√	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Church with old sloping cemetery. Scrub vegetation and mature trees.
Villa Road Recreation Ground	√	√	√	X	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Villa Road Recreation Ground. Grassed area and play area. Overgrown access footpaths.
Woodside Park	√	√ √	√ √	√ √	N/A	N/A	√	√ √	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Woodside Park. District type park, with play and sport areas, footpaths leading to adjacent woodland.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Memorial Recreation Ground	√	√ √	√	√	√	N/A	√	√	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	Memorial garden with mature trees. And separate park with large grassed area and play area.
Hadleigh Park	√	√ √	√ √	√ √	√	N/A	√ √	√ √	N/A	N/A	√ √	√ √	√	N/A	N/A	N/A	N/A	Hadleigh Park and Castle. Beautiful setting. Managed for people and biodiversity. Create additional connections to river?
Seamore Close	√	√	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Large grassed area with play area and scattered groups of trees. Could do with additional edge planting, seating etc.

(Also Refer to the Castle Point Open Spaces Strategies (2008-2013). See Baseline Report.)

Rochford

TAB.6 Rochford Local Open Space Capacity Assessment

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Rochford Bowls Clubs Football Ground	√	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Grassed area associated with Health Care Provision.
PRoW	√	√	N/A	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	School sports fields. Private, no access.
Access to the River	√ √	√ √	√	√ √	√ √	√ √	√ √	√ √	N/A	√ √	√ √	√ √	√	N/A	N/A	N/A	N/A	Tewkes Creek, lovely mix of new and old planting, provides a number of habitats and a peaceful setting.
Park and Fishing Lake	√	√ √	√	X	N/A	√ √	√ √	√	N/A	√ √	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Water barrier and holding area, temporary football fields.
River by Industrial Estate	√	√	√	√	N/A	√ √	√	√	N/A	√	√	√	N/A	N/A	N/A	N/A	N/A	Park with prominent concrete channel. Can this be naturalised? Some mature trees. Can wall backfill be planted?

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Golfcourse by the Church	√ √	√ √	√	√	√	N/A	N/A	√	N/A	√ √	N/A	√	N/A	N/A	N/A	N/A	N/A	Golfcourse by the Church. Served by a number of PRoWs.
New Development	√	√ √	√	√	N/A	√	√	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	New development with SUdS system internally and along main road. Good planting with pocket parks and 2 play areas but only suitable for toddlers.
Cemetery	√	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Cemetery. With new extension. Well maintained. Mature trees and some scrub areas.
Edwards Hall Park	√	√	√	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Edwards Hall Park. Large park with mature trees and large grassed areas. Parking and large allotment site.
Spring Gardens Playing Fields	√	√ √	√	√	N/A	N/A	N/A	√	N/A	N/A	√ √	N/A	N/A	N/A	N/A	N/A	N/A	Spring Gardens Playing Fields. Carved into sloping ground. Good Views. Mature trees on boundaries.
King's George Park	√	√ √	√ √	√	N/A	N/A	N/A	√ √	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	Kings George District Type Park.
Holy Trinity Church Ground	√	√	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	Holy Trinity Church Ground.
Rayleigh Mount	√	√	√	√ √	√	√	√	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Rayleigh Mound. National Trust place, has a grassed area on top of the mound and pond and natural planting on lower areas.
Rayleigh Grange Community Centre	√	√	√	√	N/A	N/A	N/A	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Rayleigh Grange Community Centre Recreation Ground. Large park with play area.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Wheatley Woods	√	√	√	√ √	√	N/A	√	√	N/A	√	N/A	√	√	N/A	N/A	N/A	N/A	Wheatley Woods. Natural woodland run by Woodland Trust.
Fyfield Path and Park	√	√	√	√	X	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Local Park within estate. Some play equipment. Good connections to surrounding areas.
Rayleigh Town Sport and Social Club	√	√	√	√	X	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Sports fields. Secluded with mature hedges and adjacent woodland.
Victoria Avenue Woodland Park	√ √	√ √	√	√ √	√	N/A	√	√	N/A	√ √	√	√	N/A	N/A	N/A	N/A	N/A	Natural park with woodland and meadow areas, play area, with adjacent allotments and skate park.
River Crouch Affluent	X	√	N/A	√ √	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Natural waterbody, affluent to the Crouch.
Village Green	√ √	√ √	√	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Village green. Mostly grassed areas with mature and newly planted trees.
St Nicholas Church	√	√	N/A	√	√ √	N/A	N/A	N/A	N/A	N/A	√ √	√	N/A	N/A	N/A	N/A	N/A	St Nicholas Church. Adjacent to village green above. Mostly grassed areas with mature and newly planted trees.
Canewdon Park	√	√ √	√ √	√	N/A	N/A	N/A	√	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	Park with mostly grassed area, play areas and skate park. Patchy views of the river nearby.
Waterbody in the Farm	√	√	N/A	√ √	√	√	√	N/A	N/A	√	√	√	N/A	N/A	N/A	N/A	N/A	Water reservoir close to the River Crouch. PRoW across fields leading to the river.
Ashingdon King George's Field	√	√ √	√ √	√	√	N/A	√	√ √	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	Districty type park with play area and sport fields. Mature trees and hedges providing for biodiversity.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
St Andrew Minster Cemetery	√	√	N/A	√	√ √	N/A	N/A	N/A	N/A	√	√ √	N/A	N/A	N/A	N/A	N/A	N/A	St Andrew's Minster Church, with old cemetery. Panoramic views across the valley and accessible by PRoW.

(The Borough has developed the Open Space Study 2009 which recommends appropriate provision and accessibility standards and provides an assessment of current provision of open space across the District. See Baseline Report.)

Southend-on-Sea

TAB.7 Southend-on-Sea Local Open Space Capacity Assessment

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Belton Hills Nature Reserve	√	√	√	√	√	X	√	√	N/A	N/A	√ √	√	X	N/A	N/A	√	√	Belton Hills Nature Reserve. Semi natural planting on steep slope and amenity planting on flat areas. Footpaths to Leigh-on-Sea Rail Station. Great views.
Leigh on Sea Thames Estuary Path	√	√	√	N/A	√	N/A	N/A	√	N/A	√	√ √	√ √	N/A	√	N/A	√	√	Thames Estuary Path. Linking to Chalkwell Rail Station. Over Rail Bridge, addling pool, yacht club. Port like sense of place.
Leigh Cliffs East	√	√	√	√	√	N/A	N/A	√	N/A	√	√ √	√ √	N/A	N/A	N/A	√	√	Leigh Cliffs East. Linear park, link to footpath leading to Rail Stations. Mix of old, new and natural planting, which could be increased. Great views.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Belfairs Woodland Park	√ √	√ √	√ √	√ √	√ √	√	√	√ √	N/A	√ √	√	√ √	√	N/A	N/A	N/A	N/A	Belfairs Woodland Park, district type park with open golf, play area, woodland footpath. Adjacent to Prittle Brook.
Belfairs Sports Fields	√	√	N/A		N/A	N/A	N/A	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Sports fields. Well maintained hedge and trees. Not much for biodiversity, but Woodland Park is nearby.
A127 Proposed Bridging Point and Linear Woodland	√	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	√	√	Busy, complicated crossing on A127. Proposed bridging point in previous GI. Good planting on A127 central reservation.
Oakwood Park	√		√	√ √	N/A	N/A	√	√	N/A	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A	Oakwood Park. Natural woodland with some informal cross-country bike tracks and Play Area.
Shanon Park and Play Area	√	√	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Shanon Park. Estate POS with raised play area enclosed by a hedge. Rest is grassed area with some mature edge planting.
Bonchurch Park	√	√	√ √	√	N/A	√	√	√	N/A	√ √	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Bonchurch Park. Crossed by Prittle Brook, with play area and well used sports equipment as well as mature planting.
Prittle Brook Greenway	√ √	√	N/A	√ √	N/A	√	√	√	N/A	√ √	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Prittle Brook Greenway, connecting Belfairs Woods with Priory Park across dense residential area. Well used by school kids on bike.
Leigh Cemetery	√	√	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Leigh Cemetery. Well kept with little Biodiversity.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Warners Bridge Park	√	√	N/A	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Warners Bridge Park. Sports Fields off an industrial estate. Secluded, between Prittle Brook and Railway track. Opportunity to extend path along brook to River Roach.
Sutton Road Cemetery	√	√	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Sutton Road Cemetery. Well kept cemetery opposite a crematorium, both well maintained, with mature trees including fruit and berry producing and some edge scrub. Good for biodiversity.
Prittlewell Camp	√	X	X	√ √	√ √	N/A	√	N/A	N/A	N/A	X	X	N/A	√	N/A	N/A	N/A	Historic settlement remains within a natural reserve. Very overgrown and difficult to access except for 1 main path. Should be managed for preservation and access.
Jones Memorial Recreation Ground	√	√	√	√	X	√	√	√	N/A	N/A	X	X	N/A	N/A	N/A	N/A	N/A	Jones Memorial Recreation Ground. Sports fields and play area. Access and parking free draining. Opportunity to add footpath to Prittlewell Camp and Waitrose. Some soft hedging.
Priory Park	√	√ √	√ √	√ √	√ √	√ √	√	√ √	N/A	√ √	√ √	√ √	N/A	N/A	N/A	N/A	N/A	Priory Park. District type park crossed by Prittlewell Creek. Has historic Priory with formal gardens, sports fields, play area, cafe, waterbodies and very mature trees.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
St Mary's Church	√	√	N/A	X	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	St. Mary's Church. Well kept grassed area with few trees. Very urban and not biodiversity friendly.
Victoria Avenue Path to Station	√ √	√ √	√	√	N/A	N/A	N/A	√	N/A	√ √	N/A	N/A	N/A	N/A	N/A	N/A	√	Shared cycle/footpath. Starts at Churchills Gardens and end at Southend Victoria Rail Station. Mature trees provide good setting by busy road.
High Street to Western Esplanade	√ √	X	N/A	X	N/A	N/A	N/A	N/A	N/A	√	√	N/A	N/A	√	√	N/A	X	High Street leading to waterfront. Quite hard with complicated paving patten. New street furniture but no planting.
Prittlewell Gardens	√ √	√ √	√	X	√	N/A	N/A	√	N/A	√	√ √	√ √	N/A	N/A	N/A	N/A	N/A	Prittlewell Gardens. Formally designed park, very good quality and maintenance. Good view from terrace opposite. Very well used.
Milton Gardens	√	√	√	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Milton Gardens Park. Mixed hedge and internal planting. Play area and tennis fields.
North Road Burial Ground	√	√	N/A	√	√	N/A	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	North Road Burial Ground. Lines of mature trees and well kept grassed area. Bike shed.
Football Stadium no access	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Roots Hall Football Stadium. Not accessible.
Gainsborough Park	√	√	√	X	N/A	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A	√	N/A	N/A	N/A	Gainsborough Park. Large grassed area and small play area in not great condition. Accessible off Prittle Brook Greenway.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Southchurch Park	√ √	√ √	√ √	√ √	N/A	√	√	√ √	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	Large District type park. Large bodies of water, play areas, football fields, coffee shop and natural areas. Good planting.
Southchurch Hall Gardens	√	√	√	√ √	√	√	√	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	Mature gardens with steep mounds, water channels and large bodies of water. Some areas very overgrown.
Chalkwell Park	√ √	√ √	√ √	√	N/A	√	√	√ √	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	Lovely open green area with pond. Plenty of space to run the dog family picnics.
Gunners Park	√ √	√	√ √	√ √	√ √	√	√	√ √	N/A	N/A	√ √	√	N/A	√	N/A	N/A	N/A	A reserve with a large amount of history, great views and birdwatching
Garon Park	√ √	√ √	√ √	√	√	√	√	√ √	N/A	N/A	√	√	N/A	√	√	N/A	N/A	A recreational park and cricket ground, hosting many events and festivals
Blenheim Park	√ √	√	√ √	√ √	√	√ √	√ √	√ √	N/A	N/A	√	√	N/A	√	N/A	N/A	N/A	A naturalistic park with plenty of planting and trees, and a play area for children
Bournes Green Park	√	√	√	√	**X**	√	√	√	N/A	N/A	X	**X**	X	√	N/A	N/A	N/A	A large grass area, with play ground in the centre. No character or sense of place
Eastwood Park	√ √	√ √	√ √	√	√	√	√	√ √	N/A	N/A	√	√	N/A	N/A	N/A	N/A	N/A	Nice play area, recreation grounds, space for dogs to run around; skate ramps and car parking

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Shoebury Park	√ √	√ √	√ √	√	√	√	√	√ √	N/A	N/A	√	√	N/A	N/A	N/A	N/A	√	A large recreational park with loads of activities for kids, anglers and nature lovers: featuring athletic fields, a kids' playground, skate park & lake fishing.
Shoebury East Beach Park	√ √	√	√	√	√	√	√	√	N/A	√	√ √	√	N/A	√ √	N/A	N/A	√	A very clean and pleasant area for strolls, with stunning open views, and local heritage opportunities.
Eastwood Park	√ √	√ √	√ √	√	√	√	√	√ √	N/A	N/A	√	√	N/A	N/A	N/A	N/A	N/A	Nice play area, recreation grounds, space for dogs to run around; skate ramps and car parking
Friars Park	√	√	√	√ √	√	√ √	√ √	√ √	N/A	N/A	√	√	N/A	N/A	N/A	N/A	N/A	Lovely quiet park, with play area, ponds and wildlife viewing, naturalistic planting
St Lawrence Park	√	√	√	√	√	√	√	√	N/A	N/A	√	√	N/A	N/A	N/A	N/A	N/A	Basic grass park, used by dogs, making a mess
Churchill Gardens	√ √	√ √	√	√ √	√ √	√	√	√ √	N/A	N/A	√	√ √	N/A	√	N/A	N/A	√ √	Quiet and secluded gardens, with wildlife viewing opportunities.

(Southend-on-Sea has developed a Parks and Green Spaces Strategy 2015-2020. The strategy sets out the key standards for public open space in terms of the quantity of space, its accessibility and the quality of these spaces. See Baseline Report.)

Thurrock

(only for reference as Thurrock has undertaken their own GBI study)

TAB.8 Thurrock Local Open Space Capacity Assessment

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Fobbing Path	√	√	√	√	N/A	N/A	√	√	N/A	√ √	√	N/A	N/A	N/A	N/A	N/A	N/A	Fobbing Path running at the back of farms and horses stables. Parallel to the High Street.
Fobbing Play Area	√	√ √	√	√	√	√	√	√	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	Fobbing Recreation Ground. Play area within a large grassed open space, view across the valley to Mucking.
Footpath back of Fishery	√	X	√	√	N/A	N/A	√	√	N/A	√ √	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Section of the Thames Estuary Path running behind the Fisheries Ponds.
Herds Lane Sports Field	√	√	X	X	X	X	X	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Sports field accessible via PRoW from Fobbing.
A1014 Cycle Route by Fobbing Marshes	√	X	X	√ √	X	X	√	√	N/A	√	N/A	N/A	N/A	√	N/A	N/A	X	Cycle route on A1014 by Fobbing Marshes, natural hedge on marshes side, no view in, exposed on road side.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Stanford-le-Hope Station	√	X	N/A	√ √	√	√	√	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	X	Stanford-le-Hope Station, poor quality arrival point, opportunity for cycle/ footpath by Mucking Creek.
Church Hill	√	√	N/A	√	√	N/A	√	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	√	Church and Cemetery, peaceful, well maintained with seating and natural areas.
Hardie Park	√	√	√ √	√	N/A	N/A	√	√	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A		District type park, facilities for children and teenagers, café' and picnic area.
Runnymede Road	√	√	√	√	N/A	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Local park with play area and adjacent natural area/ old coppiced woodland.
Essex Wildlife Trust	√	√	√ √	√ √	√	√	√	√	N/A	√	√	√	√	N/A	N/A	N/A	√	Essex Wildlife Trust Thurrock, natural reserve with visitors centre, play areas, picnic areas and cycle route.
Butts Lane Development	√	√ √	√	√	N/A	√	√	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	√	Butts Lane new development. Play area with natural planting and woodland nearby. SUdS draining the road into a swale.
Chafford Hundred Nature Reserve	√	√	X	√ √	√	√	√	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	Chafford Hundred Nature Park and Play Area by Rainbow Road. Narrow paths often overgrown.
Dudley Road Play Area	√	√	√	√	N/A	N/A	√	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Dudley Close Play Area and local park. Path connecting to local estate.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Parker Road Park	√	√	√	√ √	N/A	N/A	√	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Large grassed area and play area. Adjacent to pockets of natural woodland. Park could be enhanced.
East Street Park	√	X	X	√	N/A	√ √	√	√	√	√	X	X	N/A	√	N/A	X	X	Medium size park, in poor condition in semi-industrial area. Enclosed swale with wetland planting. Green route proposed along railway.
Thames Road Park	√	X	X	X	X	X	X	X	N/A	√	X	X	N/A	√	N/A	N/A	N/A	Thames Road Park. Grassed area for football and seating pod. Need tree planting.
Grays Beach and Riverside Park	√	√ √	√ √	√	√	N/A	N/A	√	N/A	√	√ √	√	√	N/A	N/A	N/A	N/A	Grays Beach Riverside Park. Variety of equipment, café.
Billet Lane	√ √	√	√	√	N/A	N/A	N/A	√	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Sports fields for rugby and cricket. Play area and large grassed area, completely accessible from all sides.
West Thurrock Memorial Park	√ √	√ √	√ √	√	√	N/A	N/A	√ √	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	West Thurrock Memorial Park. District type park with many facilities. Next to a church and cemetery.
Procter & Gamble	√	√	N/A	√ √	√ √	N/A	√	N/A	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	Procter & Gamble park, including Church and wildlife conservation churchyard.
Weston Avenue Water Body	X	N/A	N/A	√ √	N/A	√	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Natural waterbody, private, not accessible or visible from the road.
Section of Thames Park	√ √	√	√	N/A	N/A	N/A	N/A	√ √	N/A	√ √	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Thames Estuary Path from Tilbury Town to Leigh on Sea. Partly along the Thames and partly inland.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive Landscape & Economic Opportunities	Opportunities for Restoration	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Balstonia Park	√	√	√	X	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Local park, mostly grassed with a basic play area. No trees or shrubs for biodiversity.
Springhouse Road	√ √	X	X	√	N/A	N/A	N/A	N/A	N/A	√	N/A	N/A	√	√	N/A	N/A	N/A	Park with mainly grassed area, adjacent to a private green and allotments. Removed play area could be restored.
Corringham Town Park	√ √	√ √	√ √	√	N/A	N/A	N/A	√ √	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	District type park, play and sport facilities for children and teenagers.
Southend Road	X	√	X	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Private sports fields, off narrow main road with no stopping places. Well maintained but poor access.
Fobbing Road	√	√	√	√	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Linear park with play area and playing fields adjacent to a cemetery. Mature trees and hedging.
Plymouth Road	√	√	√	N/A	N/A	N/A	N/A	√	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Small local park with some play equipment as part of new development.
Chafford Hundred	√ √	√	√	N/A	N/A	N/A	N/A	√	N/A	√ √	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Large grassed area connected to a network of paths and cyclepaths. Could be developed on in the future.
Mayflower	√ √	√	√	√ √	N/A	N/A	N/A	√	N/A	√ √	√ √	N/A	N/A	N/A	N/A	N/A	N/A	Connecting linear landscape. Sand bank providing habitat for bees colonies next to the steps, a bit dangerous given the location.

Open Space	Accessibility & Connections	Quality & Maintenance	Leisure & Recreation	Biodiversity	Historic Landscape Environment & Sense of Place	Flood Risk & Water Management	Climate Change Adaptation	Health & Wellbeing	Deficiency Areas	Active & Green Travel Network	Views & Landmarks	Character	Productive & Economic Opportunities	Urban Greening Opportunities	Strategic Bridging Points	Approach & Setting	Additional Comments
Felipe Road	√ √	√	√	√ √	N/A	N/A	N/A	√	N/A	√ √	N/A	N/A	N/A	N/A	N/A	N/A	Connecting linear landscape. Sand bank providing habitat for bees colonies next to the steps, a bit dangerous given the location.
Chafford Gorges Natural Park	√	√	√	√ √	√	N/A	√	N/A	N/A	N/A	N/A	√	√	N/A	N/A	N/A	N/A	Chafford Gorges Nature Park. Ex quarry now naturalised with natural waterbody.
Lakeside	√ √	√ √	√	√	√	√	N/A	√	N/A	N/A	√	√	√	N/A	N/A	N/A	N/A	Lake and public realm by Lakeside Shopping Centre. Ex quarry flooded. Some watersport activities.

(Refer to the Borough Open Space Strategy 2006-2011, and the Active Place Strategy 2019. See Baseline Report.)

4.3 Local Open Space Gap Analysis

At the borough level

This section reviews the current public open space (POS) standards of each council in the study area and how these standards are being met according to their most recent studies.

As indicated in Table 1, local benchmarks suggest that most areas have sufficient public open space of at least one typology; however, access to space may be more limited, especially for more rural communities, and those areas with a higher deprivation index.

Because the POS standards and methodology of assessment are different for each of the councils, a separate quantitative and accessibility exercise has been carried out, applying nationally recognised standards.

National Standards include:

- Natural England's Accessible Natural Greenspace Standards (ANGSt): ANGSt recommends that everyone, wherever they live, should have accessible natural green space of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home.
- The National Society of Allotment and Leisure Gardeners (NSALG) has produced a national allotment standard for a minimum provision of 20 standard plots of 250 square metres per 1,000 households or 0.5 hectares per 1,000 households.

This exercise is not, however, intended to inform or indeed query local standards which have been developed with local knowledge, but it is rather used as a design tool at this initial stage.

The intent is to gather a coordinated impression of POS provision across the study area, as well as to identify any areas which would benefit from future design proposals forming part of this infrastructure study.

TAB.9 Standards per 1000 population of the various typologies of Public Open Space.

AUTHORITY	NATURAL & SEMI-NATURAL	PARKS & GARDENS	AMENITY GREENSPACE	ALLOTMENTS	SOURCE
	Hectares / 1000 POP				
Basildon	2.62	1.82	1.33	N/A	PPG17 Open Space Assessment Part 1 (2010) Open Space Assessment GAP Analysis (2015)
Brentwood	2.00	N/A	N/A	0.18	Brentwood Open Space Strategy 2008-2018 Sport, Leisure and Open Space Assessment (2016)
Castle Point	2.38	0.10	0.58	0.06	Castle Point Open Space Strategy 2008-2013
Rochford	3.00	0.10	0.30	0.05	Rochford Open Space Study 2009
Thurrock	2.00	0.70	0.80	0.16	Thurrock Open Space Strategy 2006-2011; to be updated by Thurrock Active Place Strategy (2019)
Southend	1.00	1.00	N/A	0.21	Park & Green Space Strategy 2015-2020

Green indicates that provision is on or above target.
Red indicates a deficit.
White indicates that either the standard or the provision data is not available.

At the South Essex strategic level

At the strategic level, there are numerous aspects that contribute to the South Essex landscape. As illustrated in previous sections of this report, these include a complex mosaic of habitats, landscape typologies, statutory and non-statutory designations, visual qualities and land uses.

The overlapping of the various layers of landscape and watercourse related elements help to identify gaps in areas otherwise protected by various designations, habitats connections, ease of accessibility, potential threats and areas of conflict between different land uses.

This review will help to identify areas for further local analysis and clarification as well as inform locations and sequence of green open spaces.

Country Parks

Within this GBI study are proposed locations for new Regional Park areas. This has been informed by existing and proposed linkages, land uses and proposed developments.

A high-level accessibility study has been carried out to ascertain which areas have a reasonable access to the existing Regional Parks and which areas are under-provided. Country Parks in the study area have also been included, to get a more comprehensive view of large parks location and their catchment areas.

Country Parks are not included in ANGSt, which provide accessibility standards based on the size of the open spaces. As Country Parks in the study area are of very different sizes and composition, this assessment has used the spectrum of 1,200m (a 15 minutes walk) and 2,400m (a 10 minutes drive) as reasonable distances. The intent of this exercise is purely to identify possible gaps in provision.

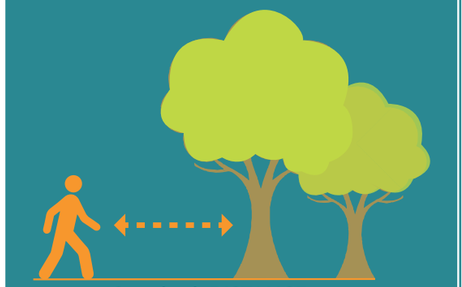
As the adjacent map shows, based on this assessment, the following areas are currently under-provided with Country Parks:

- Area between Basildon and Billericay;
- Area between Grays & Stanford-le-Hope;
- Area North of Thundersley; and
- Area North of Southend-on-Sea.

These findings have been considered alongside proposed growth areas, connections and local land uses as well as the sizes and facilities provided by the existing parks.

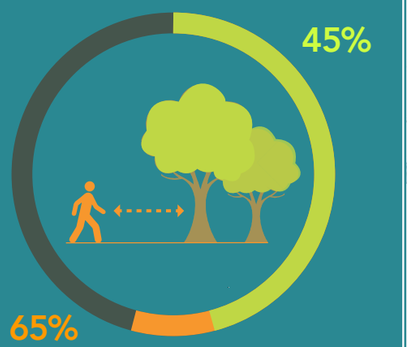
Accessibility to COUNTRY PARKS provision based on adjusted ANGSt

(ANGSt recommends that everyone should have accessible natural green space of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home.)



Standard DISTANCE to a COUNTRY PARK

to be in the range of **1,200m** to **2,400m**



Approximately **45%** to **65%** of the urban area's populations, within the study area, have easy access to a COUNTRY PARK

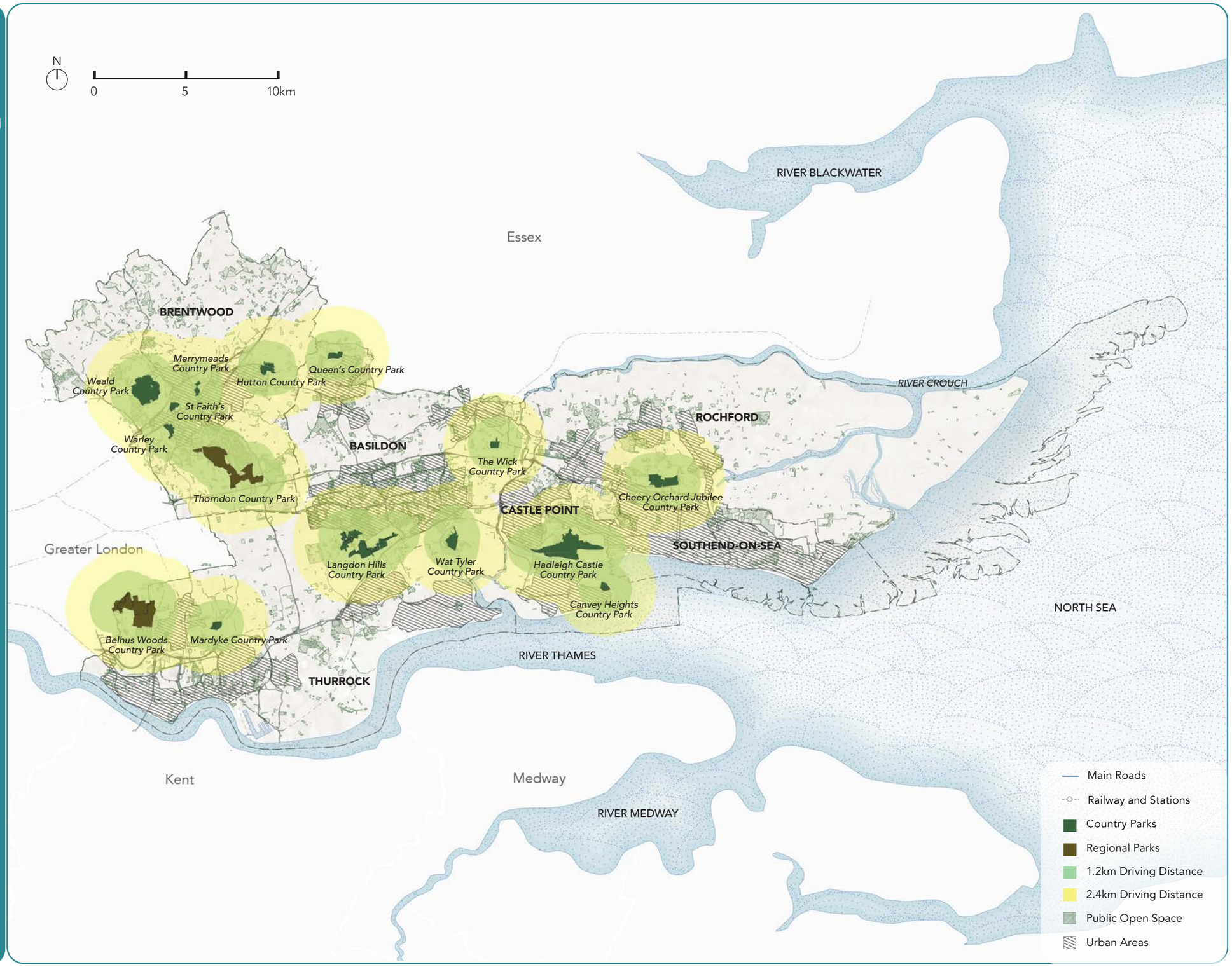


FIG.53 Green Open Space Gap Analysis: 1.2km and 2.4 km zones mapped around country and regional parks. Communities outside of the yellow zones have inadequate access to parks.

4.4 Basildon GBI

Basildon Public Open Space

Basildon Council has developed an Open Space Assessment of the whole borough (2010) based on the now superseded PPG17 policy, and followed by the Basildon Borough Council Open Space Assessment GAP Analysis (2015).

These documents have defined publicly accessible land as consisting of Urban Parks and Gardens; Natural and Semi-Natural Green Space; Outdoor Sports Facilities; Amenity Green Space; Provision of Places for Children and Young People; Education Fields; Allotments, Community Gardens and City Farms; Churchyards and Cemeteries; and Urban Civic Spaces.

The definition of public open space (POS) does not include private open space and land which has no public right of access such as domestic gardens, grounds around buildings, car parks, agricultural land and forestry plantations. The POS typologies outlined above are reflected in this document although some categories are combined to provide a coordinated assessment for the study area.

Natural and Semi-natural

There are a number of sites within this category, the **majority are concentrated in the west,** in Langdon Hills and Billericay, reflecting the natural geography of these areas.

Parks and Gardens

Urban parks are the most used typology of POS within the District, they provide the most flexible open spaces and accommodate the greatest range of uses, due to their scale and management. These parks are available within the urban areas, providing large open spaces for recreation and a change of environment breaking through the built form.

Country parks include:

- Queens Country Park - covers 60 acres of former amenity parkland, now managed to enhance the area for wildlife. Visitors can roam widely across the park while keeping to the extensive footpath system. A bridle path runs along one edge of the park.
- Wick Country Park - comprising 50 acres of former agricultural land with 2km of easy access trails, a new 5 acre lake, ponds, WWII pillboxes and recent woodland planting.
- Wat Tyler Country Park - a SSSI and covers 125 acres with country walks, wildlife and adventure play for children.

Amenity Green Space

Local open spaces provide most of the Borough's amenity green spaces. The proposal to designate some of the Borough's green spaces as Local Green Spaces emerged from Public Consultations for the Local Plan. Following an assessment, 39 sites were considered to meet the criteria for Local Green Space designation. They offer great value as places for people to participate in organised sport, play, informal recreational activity and appreciation of the natural environment. Their retention will continue to be important as the Borough's population grows. The Council's most recent Open Space Assessment (2010) and Playing Pitch Strategy Review highlighted where open spaces should be retained for leisure and recreation purposes and set quantity, quality and accessibility standards. This assessment is subject to review given growth projections are now greater than they were in 2010.

Cemeteries and churchyards have been grouped within this categories for their amenity and biodiversity contribution. Their total land area is 19.9 hectares.

Children and Teenagers

Provisions for children and young people include 151ha of play areas and facilities for teenagers.

Allotments

Allotments are provided both by the authority and through private sites. The east of the District has reasonable access to a few allotment sites within and outside of the District, but this is not available in the western part of the District.

Within the Local Plan the promotion of household space to grow food is seen as a measure to address the lack of exercise and poor diets leading to an increase in obesity within the District.

Although allotments are used by less than 0.5% of the Borough's population, they remain an important specialist feature of the Borough's green infrastructure network. There are seven allotment sites across the Borough with a total of 513 plots. The Council manages three of these sites and the other four are run by allotment associations. They are concentrated to the south and north-east of the Borough, with no provision in Billericay where there are indicators of need. Provision will be aligned to strategic housing allocations to meet the needs of the growing population.

Sports Provisions

Outdoor sports facilities comprise an overall area of 262.43ha including Barleylands Farm.

KEY FINDINGS

- Basildon has a good distribution of a variety of POS typologies, with approximately 90% of the urban area being within the ANGSt standard of 300m from a POS;
- According to the Borough's own standard of 400m catchment area for POS, it meets all requirements;
- Natural and Semi-natural space is concentrated in the west of the District, reflecting the natural geography of the area;
- Urban Parks are the most used typology within the District;
- The distribution of POS is not evenly spread across the District, of the four settlement areas:
  - · Basildon has a good level of POS of all typologies;
  - · Wickford has a good level of Urban Parks but a lack of other typologies;
  - · Billericay has a good level of most typologies;
  - · Noak Bridge & Ramsden lack urban parks but have a high level of outdoor sports provision.

REFERENCES:

Basildon Borough Council Open Space Assessment GAP Analysis (2015)

Basildon Council PPG17 Open Space Assessment Part 1 (2010)

Basildon Gap Analysis

A borough-wide 'PPG17 Open Space Assessment,' completed in 2010, and the 'Open Space Assessment GAP Analysis' carried out by the Council in 2015, measured the quantitative supply of open space.

The difference in quantitative overall provision of **open space was found to have only marginally changed from 1381.54ha in 2010 to 1,385.92ha in 2015. This net increase of 4.38ha of opens space was the result of a net increase in provision of natural and semi-natural open space (+11.35ha) and a loss of amenity green space (-6.13ha) and outdoor sport facilities (-1.53ha).**

The other significant aspect to note, was that **despite the net increase in total open space provision, the amount of open space per 1,000 population dropped from 8.3ha to 7.7ha, this is probably the result of an increase in the local population**.

Natural and Semi-natural

The recommended standard for Natural and Semi-natural open space and the provision of this typology of open space are both **2.62ha/1,000 population, therefore meeting the standard**.

Parks and Gardens

The recommended standard for Urban Parks and Gardens and the provision of this typology of open space are both **1.82ha/1,000 population, therefore meeting the standard.**

Amenity Green Space

The recommended standards for Amenity Green Space and the provision of this typology of open space are both **1.33ha/1,000 population, therefore meeting the standard**.

Cemeteries and churchyards are provided as 0.12ha/1,000 population and although not subjected to a specific standard, provision meets the demand.

Children and Young People

Provisions for children and young people are provided as **0.98 spaces/1,000 population**.

Allotments

Allotments and community gardens are provided as 0.054ha/1,000 population and although not subjected to a specific standard, they are recorded as meeting the demand.

Sports Provisions

The recommended standard for outdoor Sports Facilities and the provision of this typology of open space are both **1.58ha/1,000 population, therefore meeting the standard**.

Accessibility

In the development of the The Open Space Assessment 2010 a lot of research and consultation was carried out to arrive at an agreed standard of accessibility. Having tested several values it considered that **a distance of 400m best reflected the current supply and demand for accessibility of open space. However, this differs from the ANGSt standard of no more than 300 metres.**

TAB.10 Standards per 1000 population of the various typologies of Public Open Space in Basildon. The colours indicate whether the standard is currently achieved.

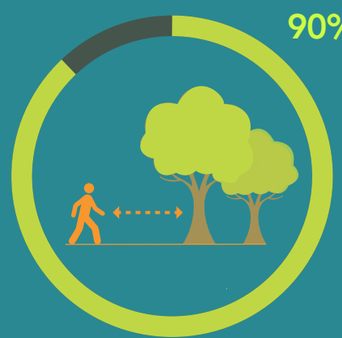
AUTHORITY	NATURAL & SEMI-NATURAL	PARKS & GARDENS	AMENITY GREENSPACE	ALLOTMENTS	SOURCE
	Hectares / 1000 POP				
Basildon	2.62	1.82	1.33	N/A	PPG17 Open Space Assessment Part 1 (2010 Open Space Assessment GAP Analysis (2015)

FIG.54 Key POS Index: Basildon

Accessibility to POS provision based on ANGSt Standard

ANGSt recommends that everyone, wherever they live, should have accessible natural greenspace of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home.

Standard for MAXIMUM DISTANCE to a POS (of any typology) is 300m



90% of the Borough's urban area population have access to a POS

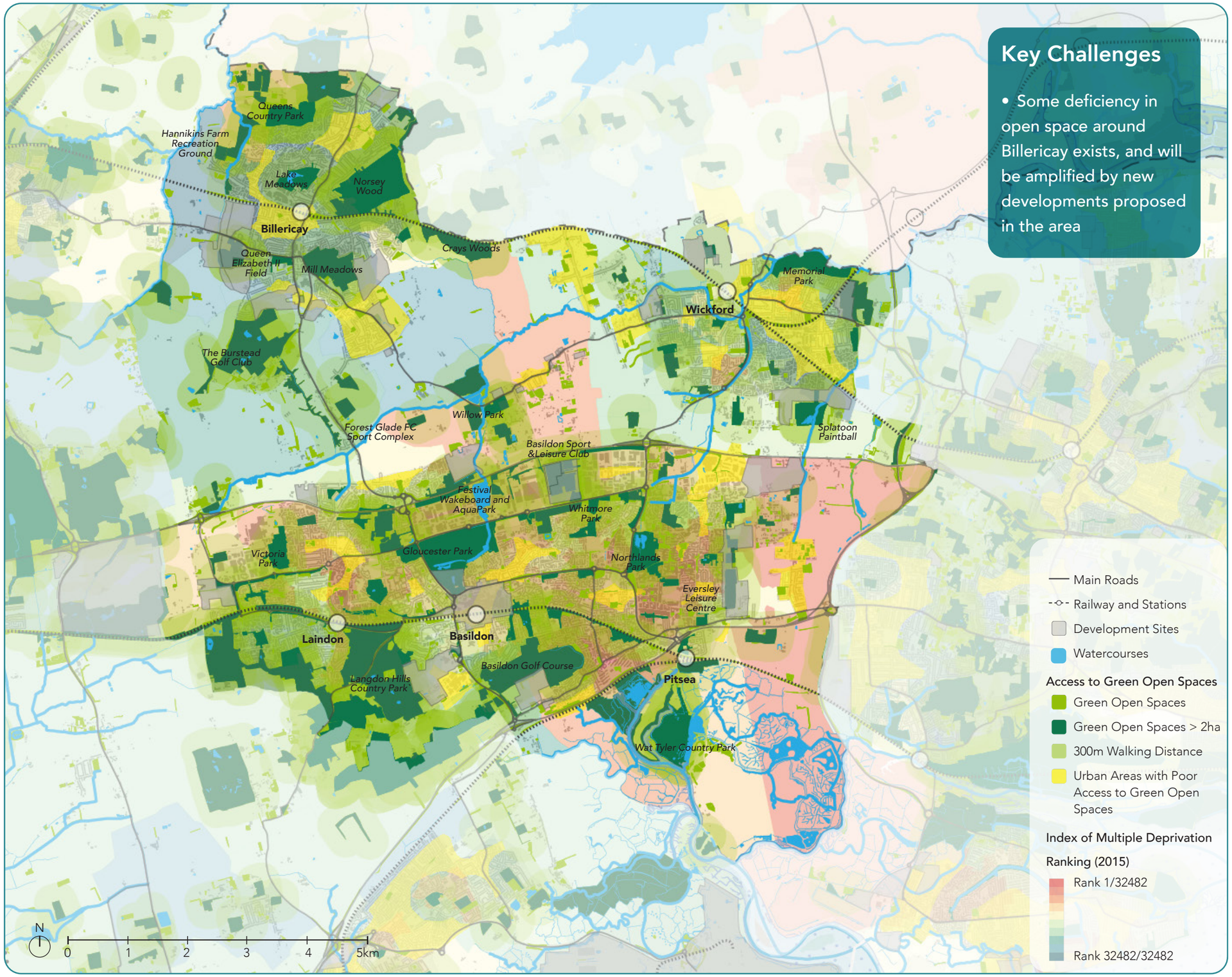


FIG.55 Existing Green Open Space Gap Analysis: Basildon

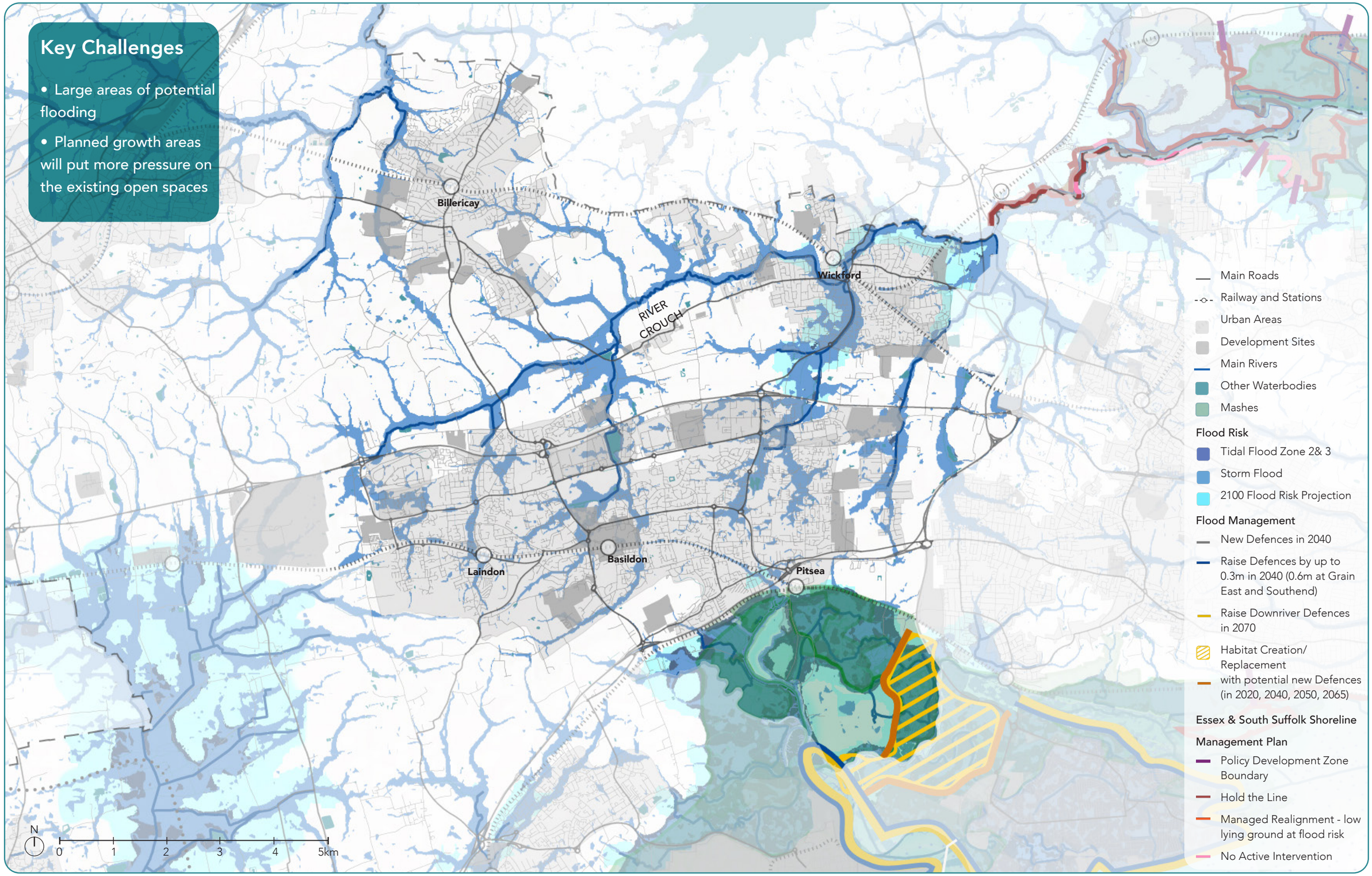


FIG.56 Existing Water Management, with Proposed Development Sites: Basildon

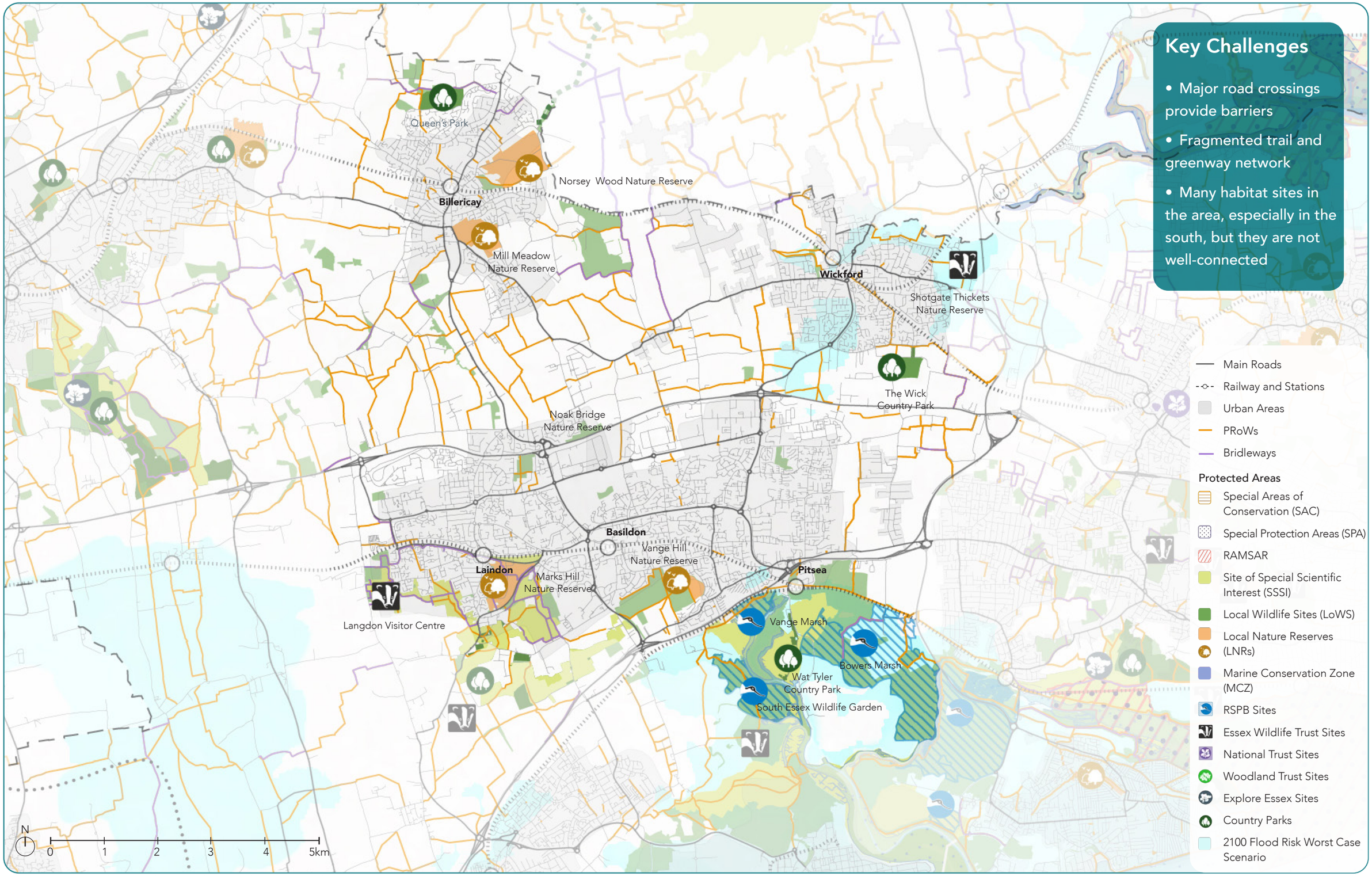


FIG.57 Existing Habitat and Nature Sites, with PRoWs and Active Travel Routes: Basildon

Strategic Opportunities

- Strategic parks in the Billericay area to meet demand
- Improved access throughout Basildon and into neighbouring areas with enhanced greenways and recreational loops, connecting destinations and habitat sites
- Improved blue corridors, with natural restoration and adjacent trails
- Enhance functionality of urban green spaces, to allow for stormwater attenuation
- Central Marshlands borders the south, Thames Chase the west, and Central Woodland Arc to the east. All well connected. See Volume 1, Section 3 on Central Marshlands
- Stewardships in agricultural areas
- Incorporate GBI into all new developments

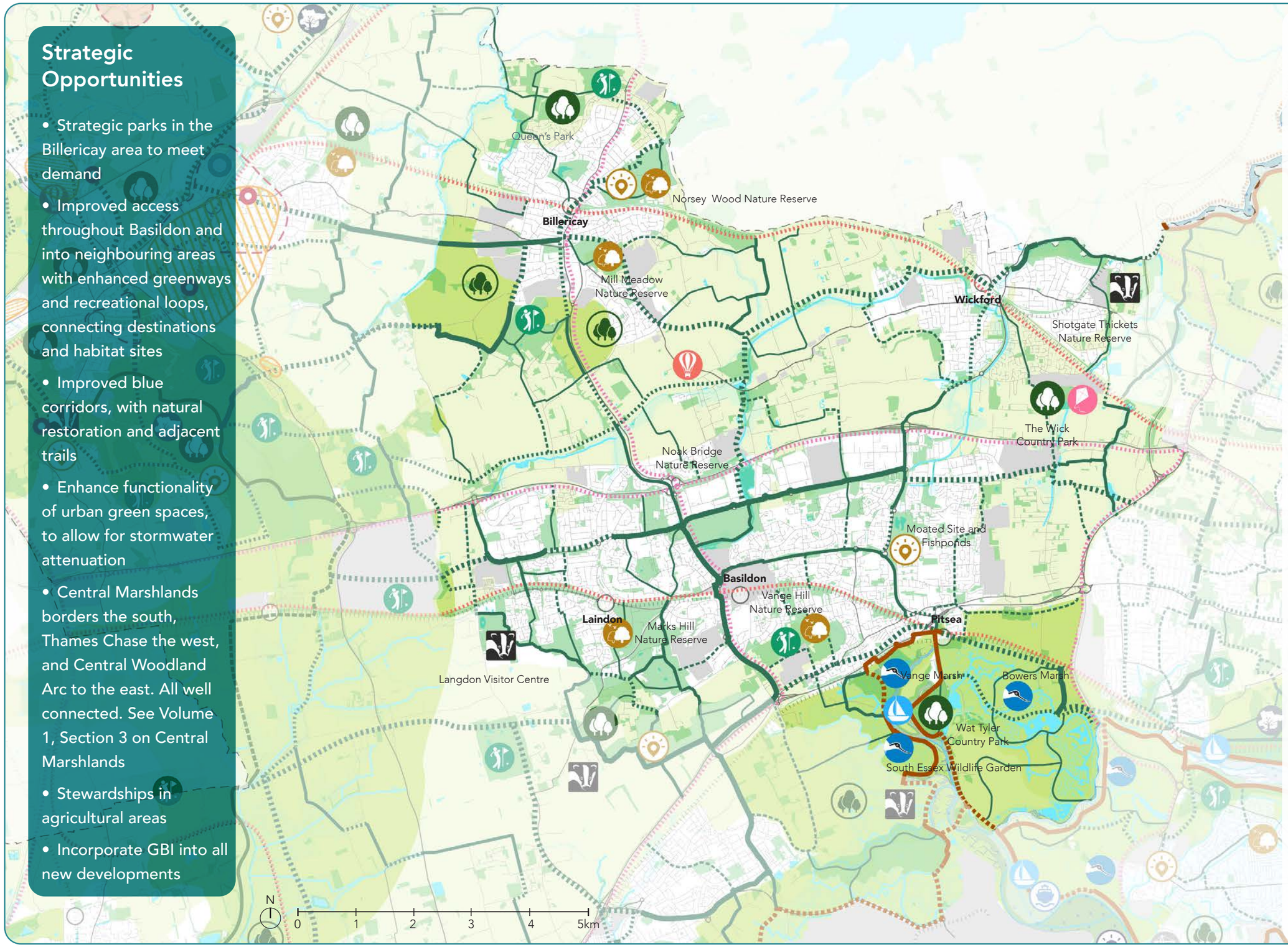


FIG.58 Proposed GBI Layout: Basildon (Source: GIS Green Spaces and Agricultural Land from ASELA, Development plots from Local Plans)

4.5 Brentwood GBI

Brentwood Public Open Space

(only for reference as Brentwood has undertaken their own GBI study)

Brentwood Borough is set within the Metropolitan Green Belt, which protects its green spaces. The 'public rights of way' network also provides access to extensive open areas for informal recreation. The proximity to London, however, gives rise to **intense development pressure**, with an anticipated increase in population of 17% by 2030.

To manage this increase in population, on larger residential and/or commercial schemes of 50 units and above, the Council will seek for at least 15% of the site to be set aside with substantive and usable public open space. Usable open space is defined as 2000m2 in a single mass, providing play space.

Developments that are unable to provide 15% substantive and usable public open space will be required to provide an enhanced financial contribution to the creation and/or improvement to existing open space outside of the development site.

Natural and Semi-natural

There are 46 sites within this category, ranging from common land and local urban sites to heathland and large country parks. Natural and informal open spaces are well spread and **approximately 89% are assessed as being of high quality**.

Country Parks including Hutton, South Weald and Thorndon provide 324 hectares of informal open space together with other publicly accessible playing fields, parks, woodlands and wider sporting facilities.

The Leisure Strategy 2018-2028 will focus improvements, on the Council's Country Parks including Hutton Country Park, Warley Country Park and St Faiths. South Weald and Thorndon Country Park are managed by Essex County Council.

Parks and Gardens

There are no formal parks in Brentwood dedicated to quiet enjoyment and relaxation. There are 14 multi-purpose, managed open spaces. King George's Playing Fields is noted for its features of planting, children's paddling pool and sensory garden.

Amenity Green Space

There is a total of 32.7ha of amenity greenspaces on 135 sites across the Borough, ranging from small grassed areas to large village greens. Brentwood Council proposes to designate new Local Green Space as part of its Local Plan and Green Infrastructure strategy, offer some protection from development. Policy HC6 aims to resist development on Local Green Space unless it enhances the use of the space for outdoor sport/recreation purposes. There are also 39 cemeteries and churchyards in the Borough with a total area of 32.35 hectares.

Children and Teenagers

There are 34 equipped playgrounds, unevenly spread across the Borough, totalling 3.7 hectares. The majority are located within urban areas as part of social housing provisions. While some play areas have been assessed as being of high standards most of those associated with housing sites have been assessed as of poorer quality.

Sports Provisions

The Borough has a good supply of sports pitches, the Leisure Strategy 2018-2018 shows 123 grass pitches including cricket, football, hockey, rugby league and rugby union. These are generally well distributed across the Borough and include:

- 20 club and school cricket venues;
- 37 adult football pitches;
- 2 youth (11 a side) football pitches and 10 youth (9 a side) football pitches;
- 17 mini-soccer (7 a side) pitches;
- 6 Hockey pitches;
- 8 venues for rugby union pitches; and
- 1 rugby league pitch.

Allotments

The total amount of allotments in the Borough are estimated to be around 16-17ha; based upon a Borough population of 73,601 (2011 Census), this equates to circa 0.22ha of allotments per 1000 people, which is broadly in line with the old PPG17 standard and the National Allotment Society's (NSALG) recommended standard. The Council proposes to declare all existing Council owned allotment sites in the Borough as having statutory status so they can enjoy legal protection provided by the Allotments Act 1925. Allotment providers report a waiting list for plots of 8-10% of the total plots currently available (Brentwood's Sport, Leisure and Open Space Assessment, 2016). Levels are likely to increase due to population increase, and changes in demographics including an increase of 45.9% in over 65s.

Green Corridors

There are currently no formally recognised green corridors within the Borough although there are approximately 150 miles of Public Rights of Way (PRoW), these are managed by Brentwood Council as part of an agreement with Essex County Council. There are three main waterways: River Roding, Ingatestone River and River Wild.

KEY FINDINGS

- Natural and Semi-natural space is well spread across the Borough;
- There are no formal parks in the Borough;
- Playgrounds are unevenly spread across the Borough, with the majority associated with social housing provisions;
- There is a good supply of sports pitches and they are well distributed across the Borough;
- Allotments provision is in line with national standards although there is a waiting list of 8-10% of total plots.
- Brentwood has a reasonably good distribution of POS, with the south-west areas of the Borough being very well provided, and only some areas in the centre of Brentwood and in the satellite settlements being outside the 300m catchment area from a POS;
- According to the Borough's own standard, of 15 minutes walking distance to a POS, there are still some areas without access to a POS (approx 15%).

REFERENCES:

Brentwood Borough Council Open Space Strategy (Second Edition, Environmental Services)

Brentwood Borough Council Leisure Strategy 2018-2028, 2018

Brentwood Borough Council Playing Pitch Strategy 2018-2033, 2018

Brentwood Borough Council Sport, Leisure and Open Space Assessment Final Report (PLC), 2016

Brentwood Gap Analysis

An Open Space Strategy was developed by Brentwood Borough Council, and a Sport, Leisure and Open Space Assessment was also prepared in 2016.

Brentwood is considered to be very well provided for public open space. There are 18.7ha of publicly accessible open space per 1,000 resident population (including the Country Parks within the Borough).

There seem to be an over-provision of country parks and natural and semi-natural areas, although the Brentwood Open Space Strategy noted that there are significant areas without access to an urban park or garden.

Natural and Semi-natural

The current level of provision for natural and semi-natural open space is 5.61ha per 1,000 population, which is very high compared surrounding Boroughs

Parks and Gardens

The current provision of parks and gardens in Brentwood is 7.62ha per 1,000 population as outlined in the Open Space Strategy, however a large proportion of this is provided by the country parks which could also be considered natural areas. If only the urban parks and gardens are considered than the figure is 0.74ha per 1,000 population (0.65ha per 1,000 population according to the Sport, Leisure and Open Space Assessment).

Amenity Green Space

The provision of amenity open space in the Borough equates to 0.45ha per 1,000 population.

Cemeteries and churchyards are not subjected to a specific standard, however provision meets the demand.

Children and Young People

The level of provision for children and young people equates to 0.08ha/1,000 population.

Allotments

The existing provision of allotments in the Borough is of 0.176ha per 1,000 population which is above the nationally recommended level.

Sports Provisions

The existing provision for outdoor sports facilities equates to 11.69ha per 1,000 population, however, a large proportion of this figure relates to golf courses, if these are excluded, the provision level reduces to 3.18ha per 1,000 population.

Accessibility

Accessibility has been calculated in the Sport, Leisure and Open Space Assessment as 15 minutes drive to a formal open space, natural and semi-natural space.

For amenity green spaces accessibility has been calculated as 15 minutes walking, for equipped play areas as 10 and 15 minutes walk and 15 minutes walk for sport facilities

20 minutes drive has been considered for allotments.

TAB.11 Standards per 1000 population of the various typologies of Public Open Space in Brentwood. The colours indicate whether the standard is currently achieved.

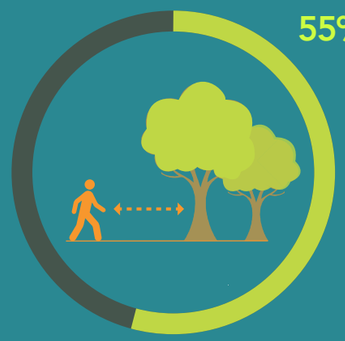
AUTHORITY	NATURAL & SEMI-NATURAL	PARKS & GARDENS	AMENITY GREENSPACE	ALLOTMENTS	SOURCE
	Hectares / 1000 POP				
Brentwood	2.00	N/A	N/A	0.18	Brentwood Open Space Strategy 2008-2018 Sport, Leisure and Open Space Assessment (2016)

FIG.59 Key POS Index: Brentwood

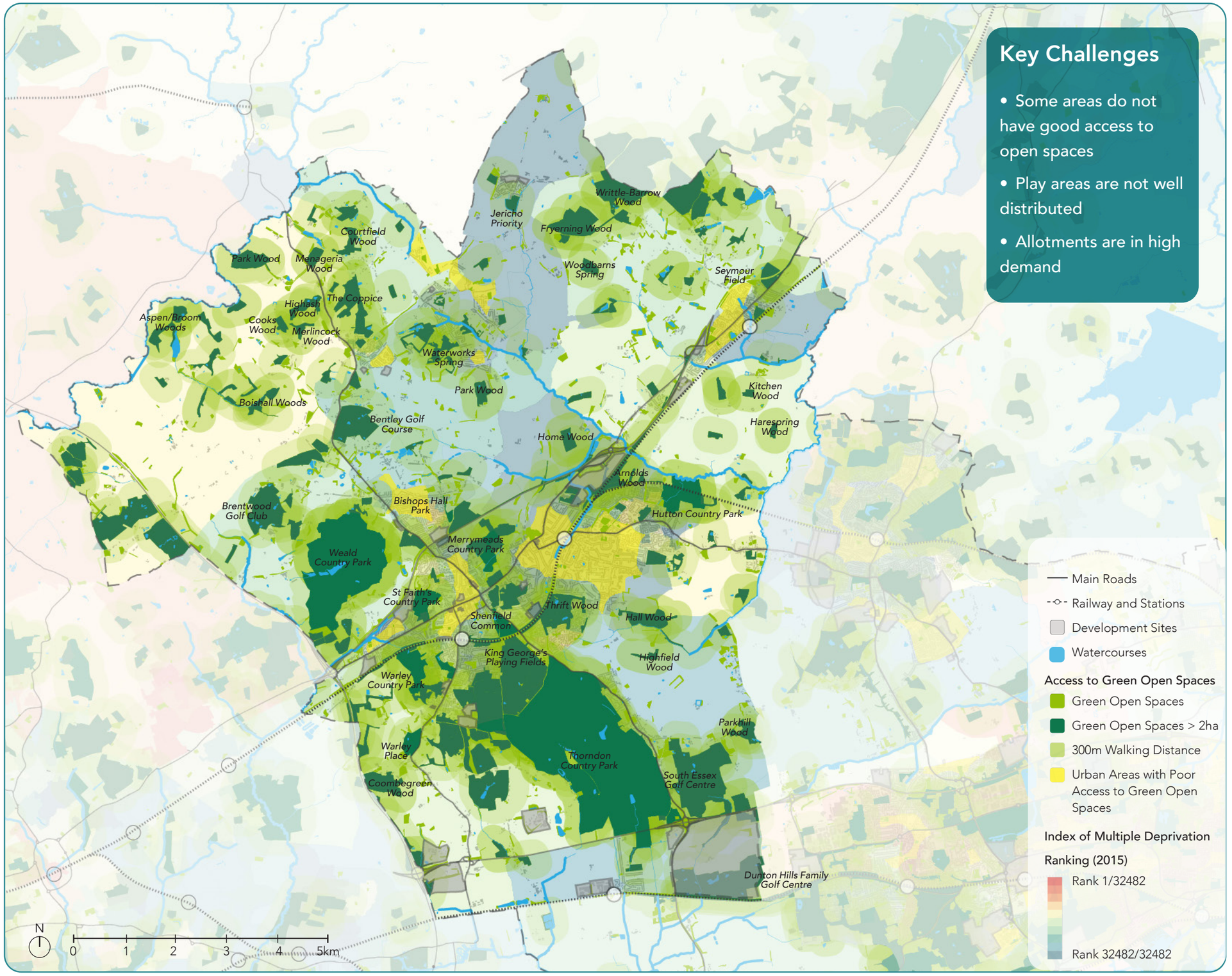
Accessibility to POS provision based on ANGSt Standard

ANGSt recommends that everyone, wherever they live, should have accessible natural greenspace of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home.

Standard for MAXIMUM DISTANCE to a POS (of any typology) is **300m**



55% of the Borough's urban area population have access to a POS



Key Challenges

- Some areas do not have good access to open spaces
- Play areas are not well distributed
- Allotments are in high demand

FIG.60 Existing Green Open Space Gap Analysis: Brentwood

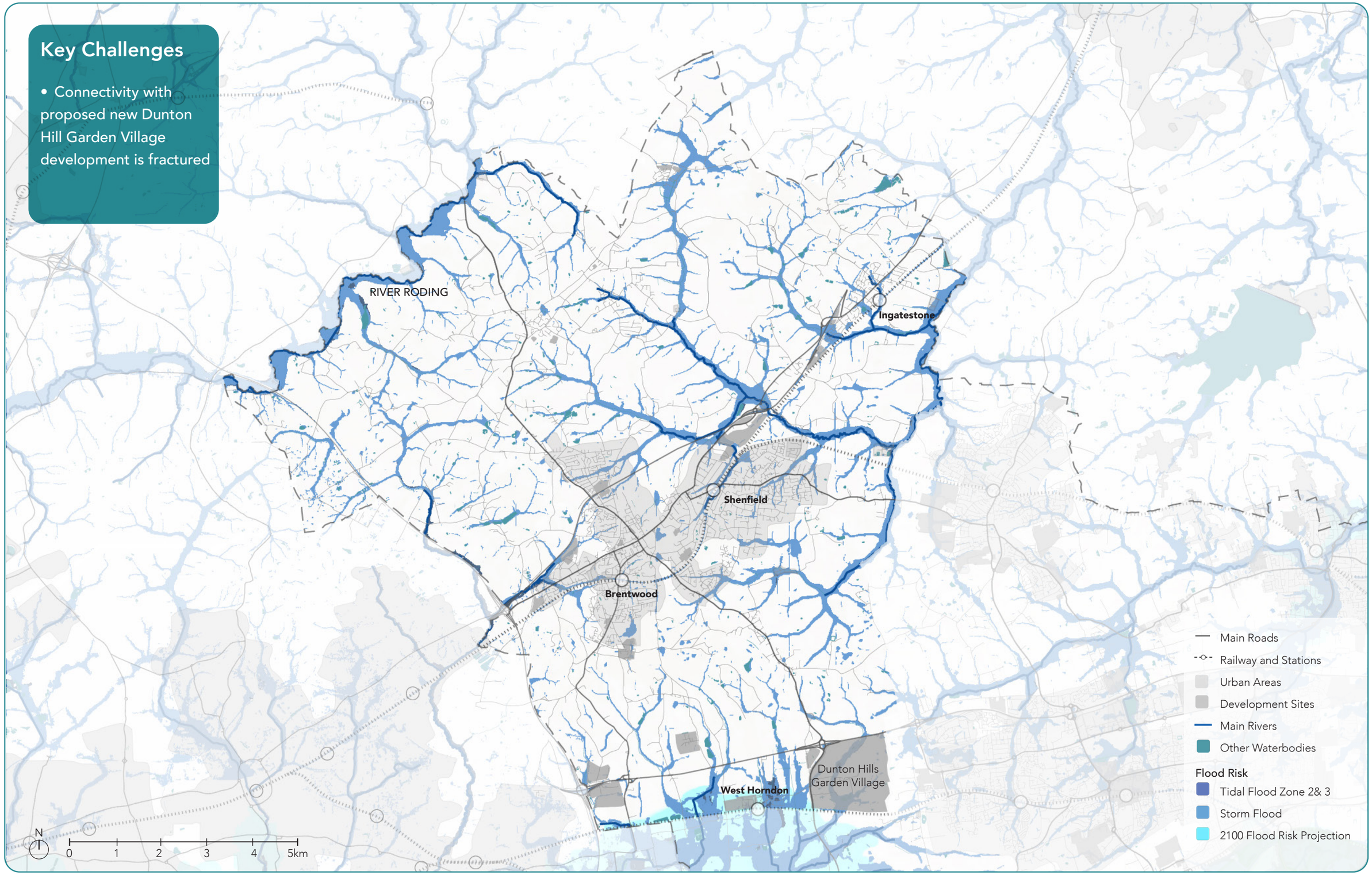


FIG.61 Existing Water Management and Proposed Development Sites: Brentwood

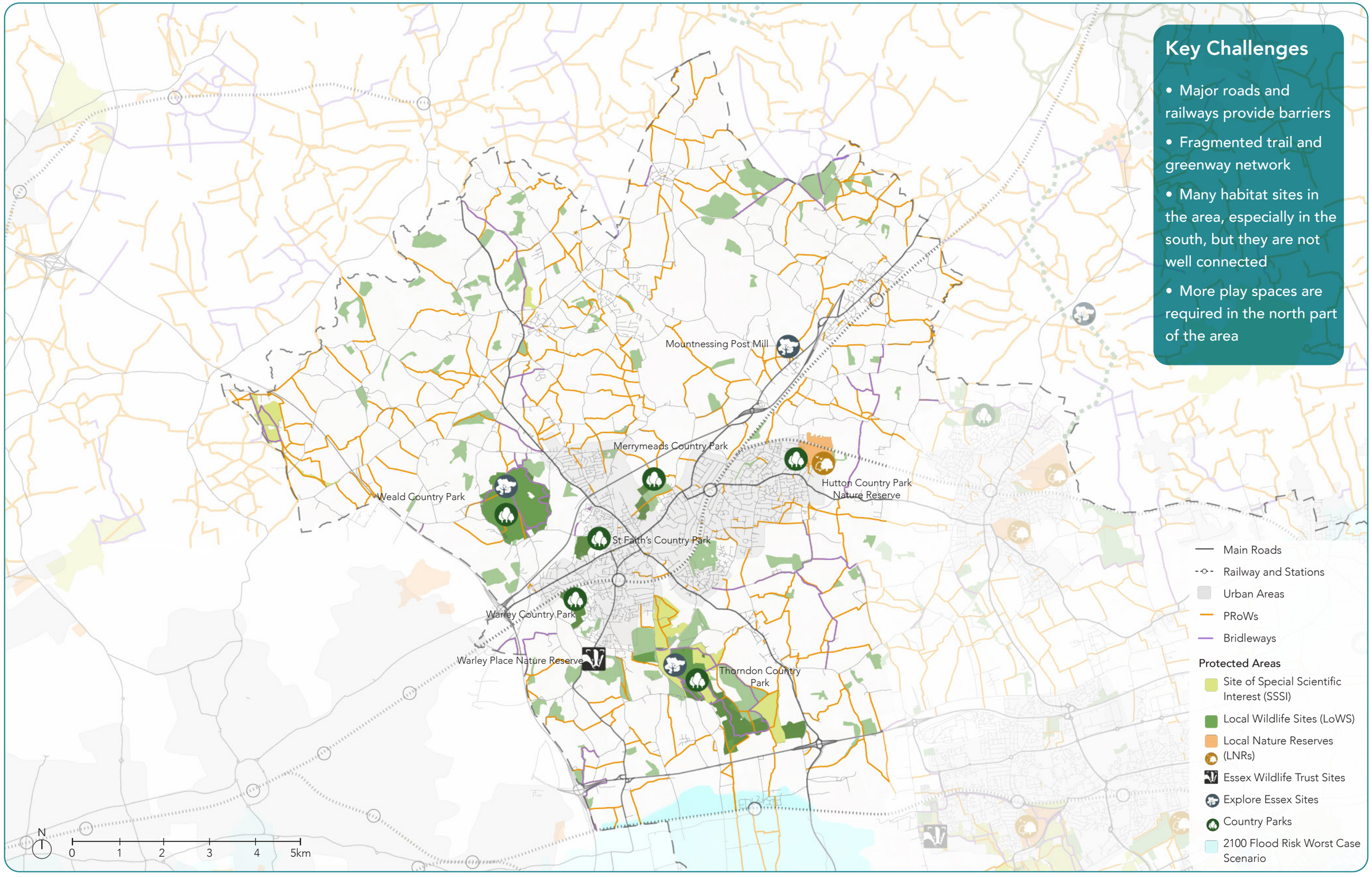
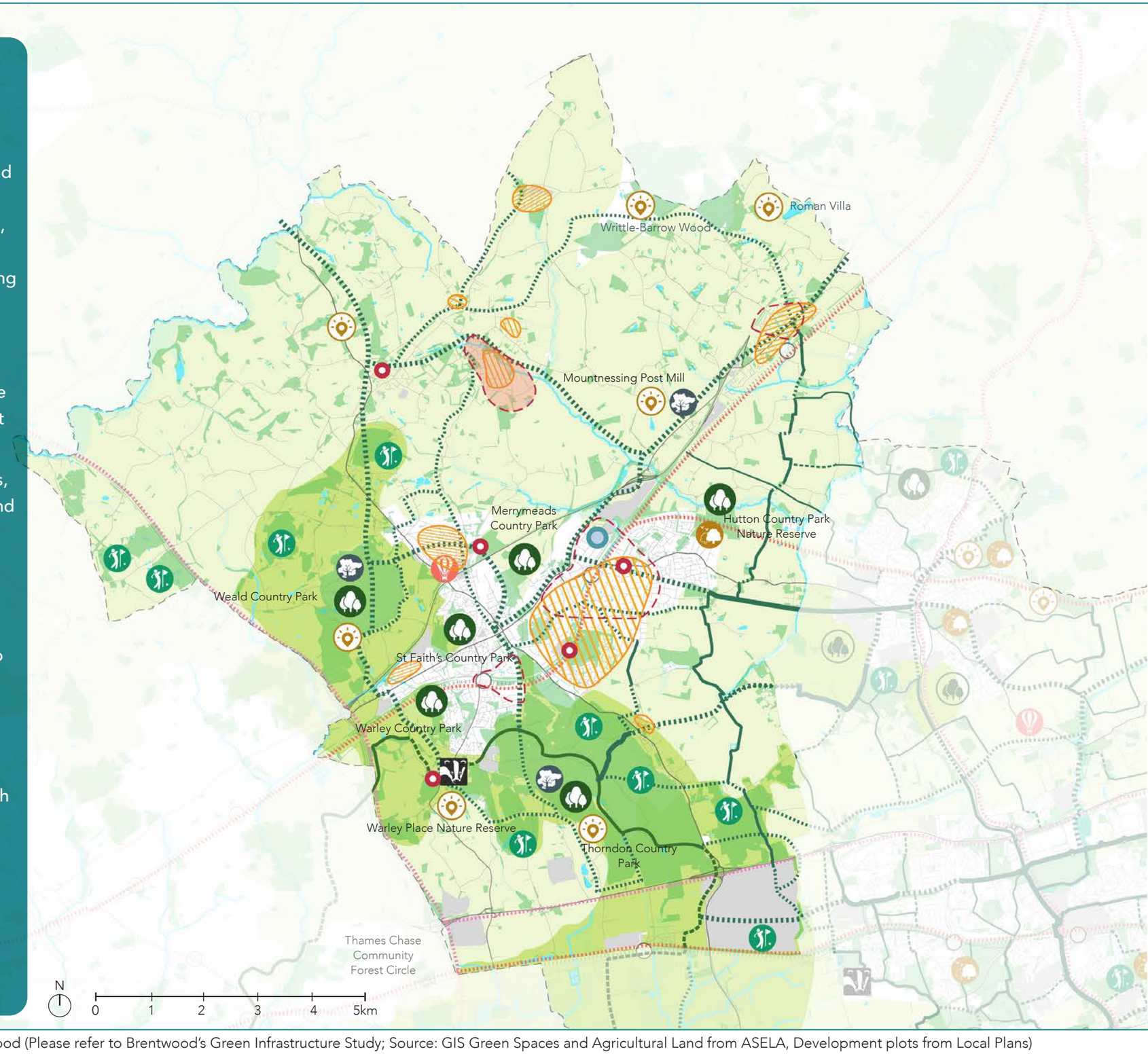


FIG.62 Existing Habitat and Nature Sites, with PRoWs: Brentwood

Strategic Opportunities

- Improved access throughout Brentwood and into neighbouring areas with enhanced greenways, recreational loops and green crossings, connecting destinations and habitat sites.
- Pedestrian link from Dunton Hill Garden Village to Basildon and the Forest Circle network
- Improved blue corridors, with natural restoration and adjacent trails
- Play spaces increased
- Embrace the Thames Chase, by joining existing parkland and building into the wider Thames Chase Community Forest. See Volume 1, Section 3 on Brentwood Parklands
- Connect parklands south to the Mardyke Valley
- Stewardships in agricultural areas
- Incorporate GBI into all new developments



- Roads
- Railway and Stations
- Proposed Development Sites
- Flood Zone 2 & 3
- Proposed Parklands
- Existing Green Open Spaces
- Agriculture Land

Brentwood GI

- Opportunities for Children's Play Area
- Existing Space to Improve Access and Facilities
- Opportunities for Semi-natural and Amenity
- Allotments
- Park + Ride

GBI Layout

Roadways
- Urban Green Roadways

Railways
- Urban Green Railways

Blueways
- Blueways

Greenways (existing/proposed)
- Primary Greenways
- Secondary Greenways
- Trail Network

Strategic Parks
- Country Parks

Key Destinations
- Explore Essex Sites
- Essex Wildlife Trust
- Nature Reserves

Key Activities
- Golf Courses
- Hot Air Balloons

Key Landmarks
- Heritage Landmarks

FIG.63 Proposed GBI Layout: Brentwood (Please refer to Brentwood's Green Infrastructure Study; Source: GIS Green Spaces and Agricultural Land from ASELA, Development plots from Local Plans)

4.6 Castle Point GBI

Castle Point Public Open Space

In order to meet long term objectives of providing residents of Castle Point with a cleaner, greener environment, Castle Point Council has developed the Castle Point Open Spaces Strategies (2008-2013). Although it would benefit from updating, the document identifies opportunities to increase and enhance the existing networks of green spaces and corridors used for informal recreation, and transport serving as habitat corridors.

There are a range of different users for these spaces: equestrians, cyclists, pedestrians and dog walkers all use the Borough's green spaces.

Many of the Council-owned public open spaces and recreation grounds in Castle Point benefit from a coastline location, making them particularly accessible to users such as houseboat dwellers, beach visitors, and those engaging in water sports.

Natural and Semi-natural

There are 18 areas of open spaces that have been characterised as natural and semi-natural areas, in total the sites cover an area of 204 hectares. These provide a well-connected series of natural open space that provide education and biodiversity opportunities. Not all of these sites are controlled by the Council, therefore management of them requires working with different partners including Essex County Council and Castle Point Wildlife Group.

Parks and Gardens

The Borough has three country parks:

- Hadleigh Castle Country Park - a historic landscape with a diversity of landscapes including salt marshes, woodland and grassland, providing a high quality facility for education, exercise and entertainment. Managed by Essex County Council, in total the sites have a combined area of 216 hectares;
- Two Tree Island (as part of Hadleigh Castle Country Park).
- Canvey Heights Country Park - on the eastern side of Canvey Island was recently created on a site previously used as land fill and due to the high elevation offers views over the surrounding landscape;

Dutch Cottage Gardens is the only other park, located on the western edge of the A130.

Amenity Green Space

The Borough has 16 formally classified amenity green spaces. In total the sites have a combined area of 46 hectares. There are several good examples of amenity green spaces in the Borough, such as Kismet Park, where an interesting landform sweeps down to a drainage ditch. The site also has mature trees and hedges that create structure and visual interest. Most of the amenity open space contain basic playgrounds. In most cases there is potential to improve the ecological value of the sites.

Castle Point Borough Open Space Appraisal (2012) sets out the NPPF policy on Local Green Spaces, and the 2018 Assessments reference the need for increasing green space for communities, opportunities to enhance these networks of green spaces through improving accessibility, providing new spaces and additional green corridors. No designations are proposed to date through the Local Plan process.

Children and Teenagers

The Borough has 23 play areas that cater for age groups ranging from toddlers to early teens. In total the sites have a combined area of 3.22 hectares. A total of 40 outdoor sports facilities have been identified, some of which are private while others are owned and used by schools and colleges. In total the sites have a combined area of 278 hectares although some of the facilities are not available to the public. Additional sport facilities include two golf courses, including a driving range.

Allotments

The Borough has 7 main allotment sites. In total the sites have a combined area of 5.06 hectares. Most of the allotments are run by allotment societies, while the two allotments on Canvey Island (Waterside Farm and Smallgains) are run by The Canvey Island Town Council. At present all of the allotments in the Borough are over-subscribed, there are currently no vacant plots and long waiting lists of up to three years.

Green Corridors

There are two green corridors in Castle Point:

- The Lake + Southwick Dyke - make up the same green corridor although they have different uses and character;
- Thames Esplanade - is a unique green corridor as it connects key urban features plus it provides access to the Thames Estuary and encompasses the sea defence.

Both are important local facilities and promote sustainable forms of transport (walking and cycling).

KEY FINDINGS

- Natural and Semi-natural open space comprise 18 well connected areas of natural open space, of these 14 are woodlands;
- There is some deficiency in parks provision, which could be reduced with the creation of a new country park at Canvey Wick and improvements and re-classification of other open spaces;
- There is some deficiency in amenity open space in some areas although these are compensated by other types of open space;
- Access to Sports facilities is good within the Borough and all residents have access to some sort of sport facility;
- Play provision: East Canvey has a superior level to the rest of the Borough, the Hadleigh area is in line with recommended level, whilst other areas are below the provision level;
- Allotments provision is in line with national standards although they are currently over-subscribed and there are long waiting lists.
- Castle Point Borough demonstrates significant room for improvement in access to open space, with an extensive residential area that does not have access to a POS within 300m. Although it has some large parks, these are at the periphery of the urban areas.
- According to the Borough's own standard of 10-15 minutes walking distance to a POS there are still some areas without access to a POS (approx 30%).

REFERENCES:

Castle Point District Council Open Spaces Strategy 2008 - 2013

Castle Point Gap Analysis

The Borough has developed the Castle Point Open Spaces Strategy 2008-2013, which aims to assess the quantity and quality of the existing open space. The priorities include:

- Improving accessibility;
- Improving connectivity between Open Space;
- Improving biodiversity;
- Reflecting local character;
- Protecting and enhancing existing provision; and
- Providing more POS for communities that are suffering a deficiency in open space.

The specific quantitative and accessibility standards outlined for the different types of POS, are outlined here.

Natural and Semi-natural

The recommended standard for natural and semi-natural open space provision is 2.37ha per 1,000 population, therefore meeting the standard. The Borough also have three country parks, which have a semi-natural character and together they provide 2.58ha per 1,000 population (standard is 2.93ha per 1,000 people).

Parks and Gardens

The recommended standard for Urban Parks and Gardens is 0.10ha per 1,000 people, while the current provision is 0,001 per 1,000 people.

Amenity Green Space

The recommended standards for Amenity Green Space and the provision of this typology of open space are both 0.584ha per 1,000 population, therefore meeting the standard.

Cemeteries and churchyards' provision meets the demand although not subjected to a specific standard.

Children and Young People

Provision for children and young people are provided as 0.22 sites per 1,000 population, with a recommended standard of 0.25 sites per 1,000 population.

Allotments

The recommended standard and provision of allotments and community gardens are both as 0.058ha per 1,000 population and are therefore meeting the standard.

Sports Provisions

The recommended standard for outdoor Sports Facilities and the provision of this typology of open space are both 3.22ha per 1,000 population, therefore meeting the standard.

Accessibility

The Open Space Strategy 2008-2013 recommended accessibility standard for different types of POS are defined as:

- Country parks: 2,400m or a 10 minutes drive;
- Urban parks and natural and semi-natural open space: 720m or 15 minutes walk;
- Sports provisions: 2,400m or a 10 minutes drive;
- Amenity open space: 480m or a 10 minutes walk;
- Children and young people: 480m or a 10 minutes walk;
- Allotments and community gardens: 2,400m or a 10 minutes drive.

TAB.12 Standards per 1000 population of the various typologies of Public Open Space in Castle Point. The colours indicate whether the standard is currently achieved.

AUTHORITY	NATURAL & SEMI-NATURAL	PARKS & GARDENS	AMENITY GREENSPACE	ALLOTMENTS	SOURCE
	Hectares / 1000 POP				
Castle Point	2.38	0.10	0.58	0.06	Castle Point Open Space Strategy 2008-2013

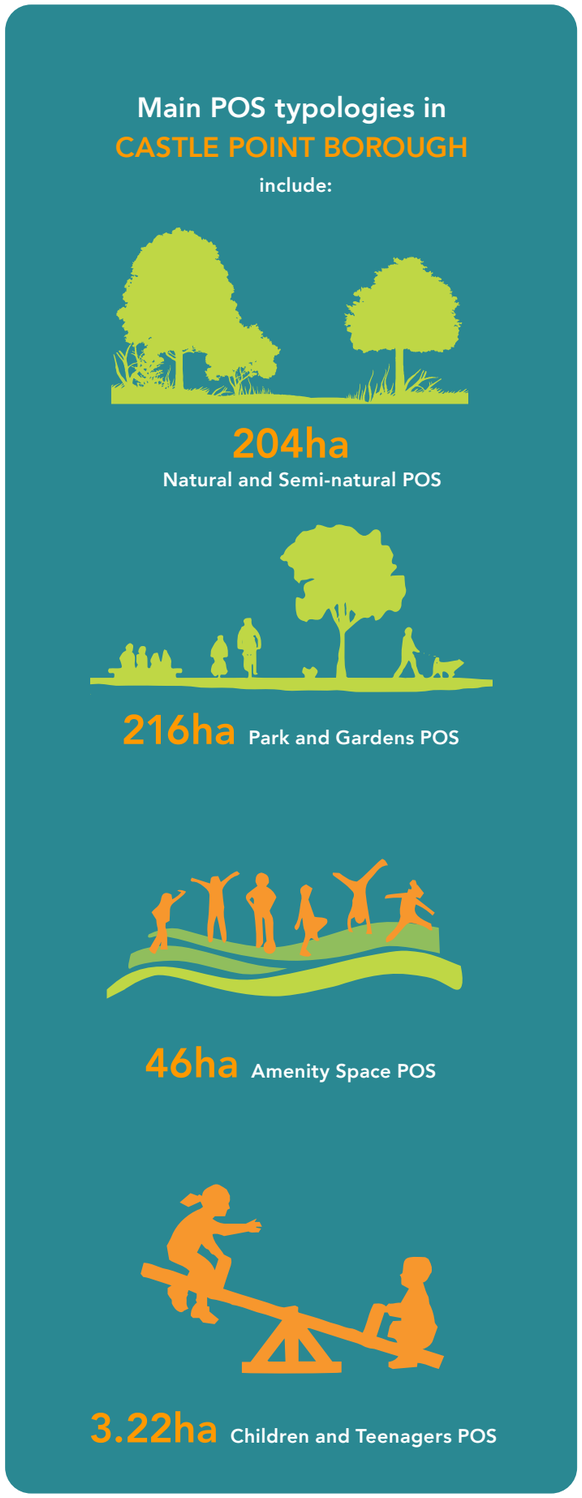


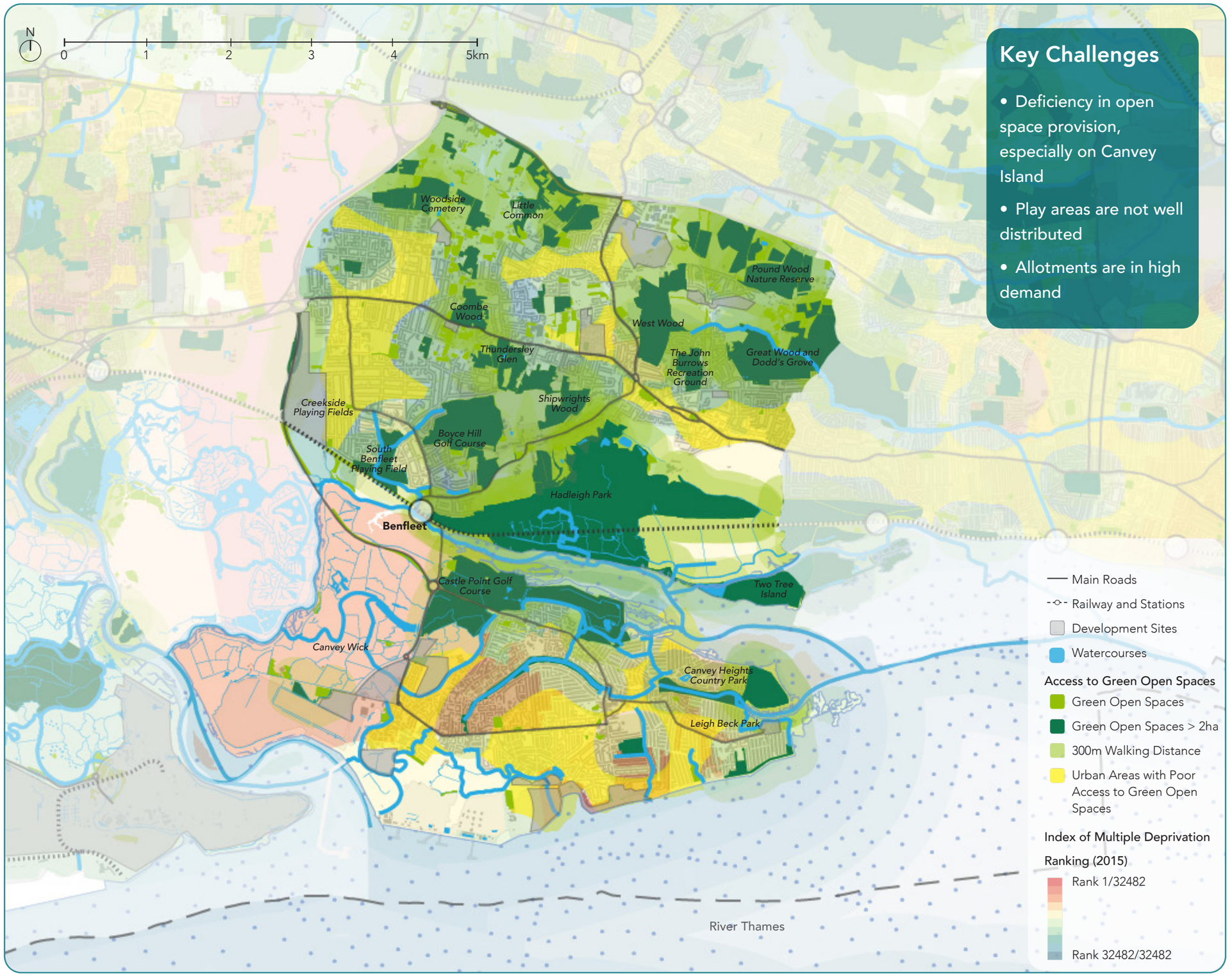
FIG.64 Key POS Index: Castle Point

Accessibility to POS provision based on ANGSt Standard

ANGSt recommends that everyone, wherever they live, should have accessible natural greenspace of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home.

Standard for MAXIMUM DISTANCE to a POS (of any typology) is 300m

35% of the Borough's urban area population have access to a POS



Key Challenges

- Deficiency in open space provision, especially on Canvey Island
- Play areas are not well distributed
- Allotments are in high demand

FIG.65 Existing Green Open Space Gap Analysis: Castle Point

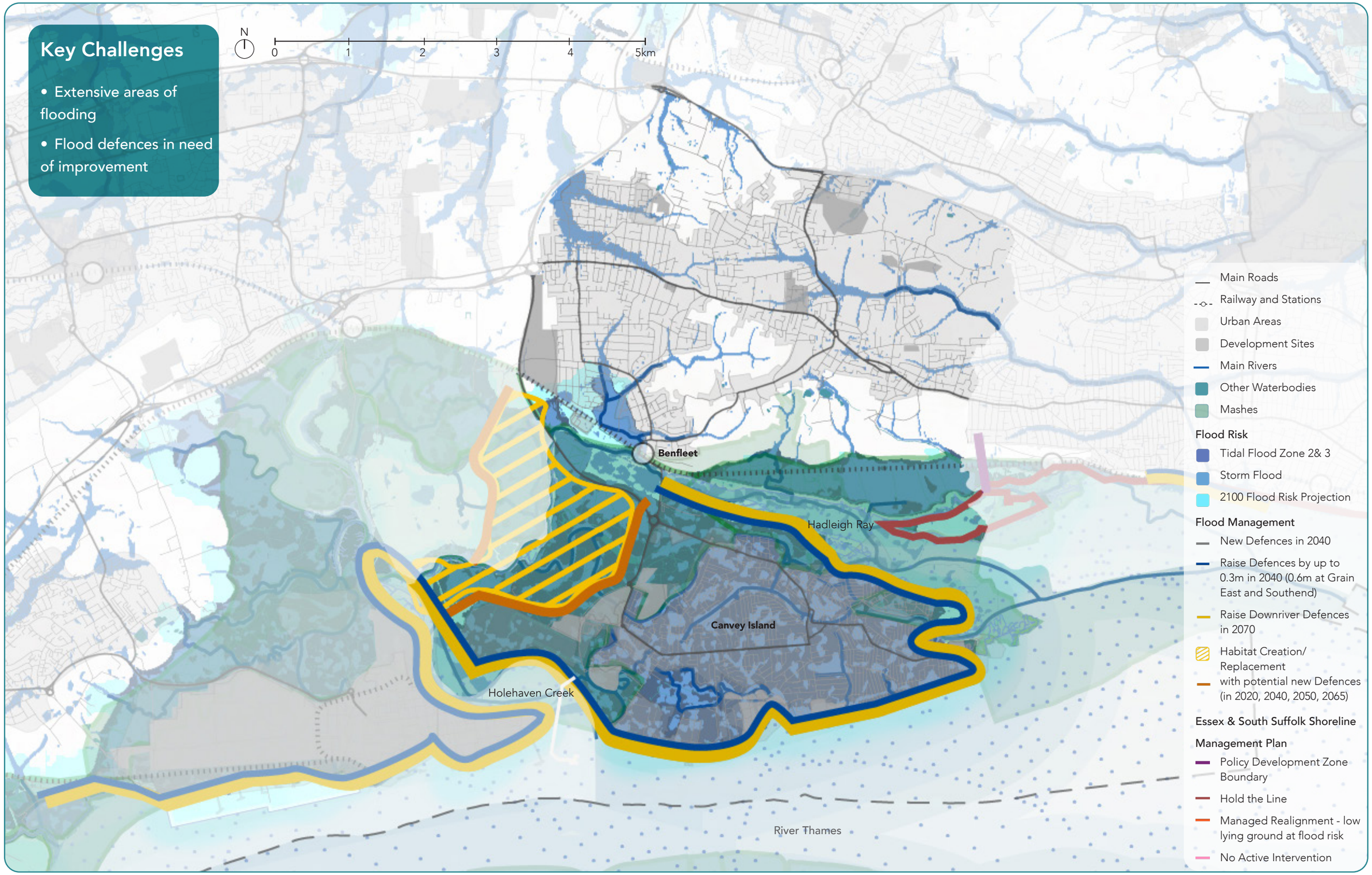


FIG.66 Existing Water Management and Proposed Development Sites: Castle Point

FIG.67 Existing Habitat and Nature Sites, with PRoWs: Castle Point

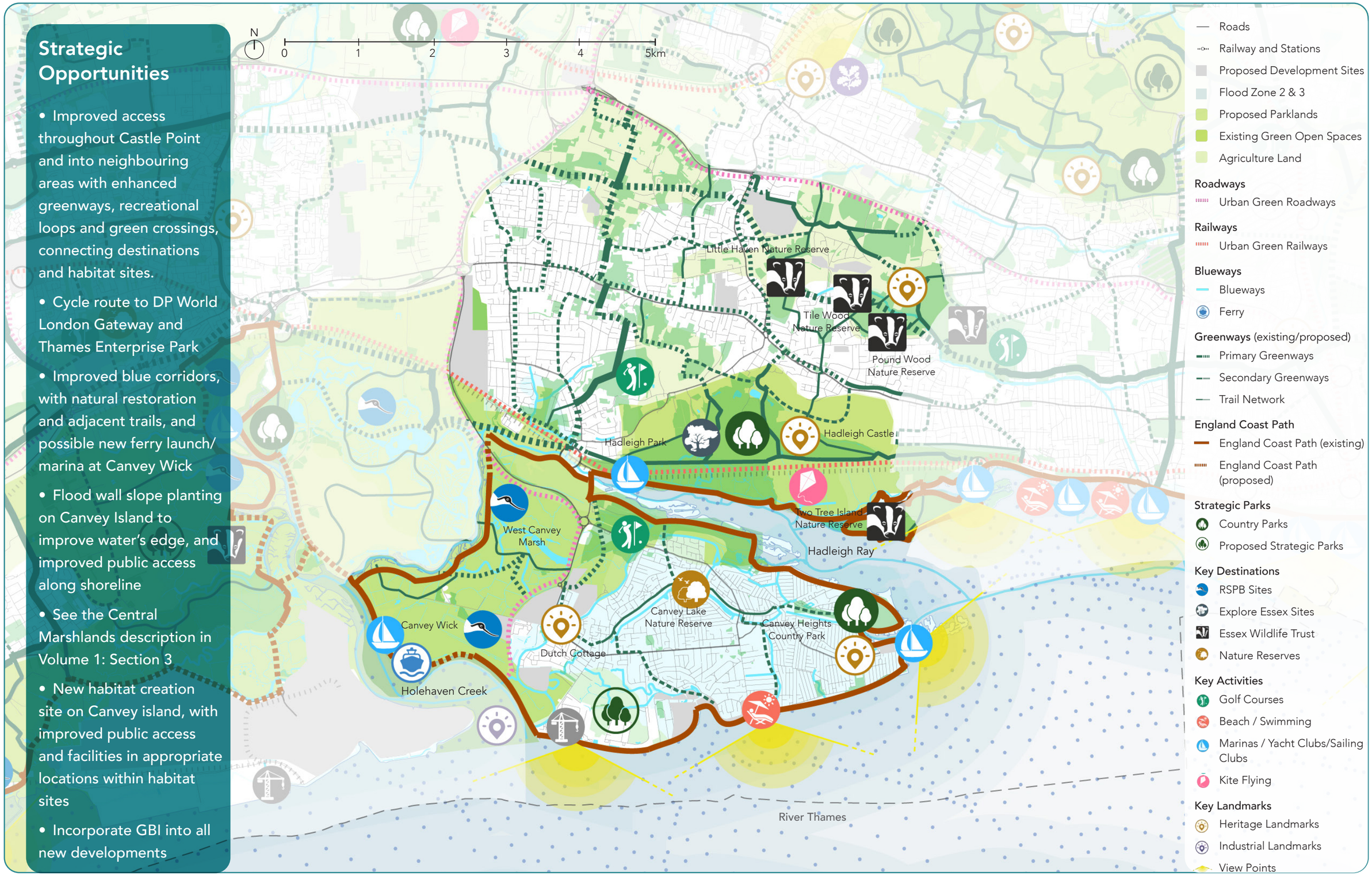


FIG.68 Proposed GBI Layout: Castle Point (Source: GIS Green Spaces and Agricultural Land from ASELA, Development plots from Local Plans)

4.7 Rochford GBI

Rochford Public Open Space

Rochford is a predominantly rural District, with the majority of undeveloped land designated as Metropolitan Green Belt. **A significant proportion of the Green Belt comprises different natural environments which are of local, national and international importance.** The extensive natural environment in the District, allows for some of it, including the open space in the Upper Roach Valley to be considered as green space for nearby areas in neighbouring councils.

Part of the Rochford District falls within the Thames Gateway South Essex Partnership Green Grid Strategy area. This strategy promotes the creation and enhancement of green linkages between areas of open greenspace, which encourage biodiversity while providing accessible green links for the local community and those who work or visit the District.

There are six identified 'Greenways' which are proposed to link southern areas of the District with neighbouring authorities.

Generally, there is an **uneven distribution of open spaces across the District with most natural and semi-natural greenspaces focused around the Hockley/Hawkwell settlement area.** There is a recognised need to manage the requirements to provide leisure and recreational opportunities for the local population and visitors to the area, against the protection of the open character and of the Green Belt and areas of nature conservation importance.

Natural and Semi-natural

There is an abundance of natural and semi-natural land throughout the District. The Open Space Study (2010) identified 20 areas of natural and semi-natural open space that are available to the public. These comprise woodlands, grasslands, nature reserves and other areas within the District which are managed for wildlife conservation. Generally there are no hard surfaced pathways through these sites and many areas are left wild to encourage wildlife and local biodiversity.

Additionally, the Cherry Orchard Jubilee Country Park, a 200 acre wildlife park to the south, considered to be a large area of natural and semi natural greenspace. It comprises woodland, a lake, open grassland and networks of connecting paths/bridleways.

Parks and Gardens

There are no formally laid out parks in Rochford dedicated solely to quiet enjoyment and relaxation, although Cherry Orchard Jubilee Country Park performs some of their functions.

Amenity Green Space

There are 18 identified amenity greenspaces within the District, based on their size, location and perceived functional purpose in relation to residential areas and local communities. In total the sites have a combined areas of 20 hectares. This excludes areas with play equipment as these have been considered play areas.

There are numerous churchyards within the District as well as two council-owned and one privately owned cemeteries

Children and Teenagers

Throughout the District there are 33 identified play spaces of varying sizes, most of which are owned and managed by Rochford District Council.

They comprise of a majority of equipped play spaces but sites with other facilities have also been included, as these are recognised as important local facilities.

In total the play spaces sites have a combined areas of 3.52 hectares.

There are also 17 identified public open spaces throughout the District which provide a variety of youth facilities, such as skateboard, basketball and BMX areas and teen shelters.

Sports Provisions

A total of 48 sites with outdoor sport provisions are identified, these include public facilities, some private facilities and some that are owned and used by educational establishments but are available for community use.

These include 26 football playing fields, 2 rugby playing fields, 7 cricket fields, 8 tennis courts and 4 outdoor bowling greens.

In total the sites have a combined area of 302.42 hectares, which also include three golf courses.

Allotments

The District has eight allotment sites which are managed by the Local Parish and Town Councils. The allotments are spatially distributed throughout the District with half the sites situated in the largest settlement of Rayleigh, while there are currently no allotments within Hockley, Hawkwell and Ashingdon.

In total the allotment sites have a combined area of 9.84 hectares and there is significant local demand with a 274 people on a combined waiting list.

KEY FINDINGS

- Generally, there is an uneven distribution of open spaces across the District with most natural and semi-natural greenspaces focussed around the Hockley/ Hawkwell settlement area;
- There are no formally laid out parks in Rochford, although the 200ha Cherry Orchard Jubilee Country Park perform some of their functions;
- There are six identified 'Greenways' which are proposed to link southern areas of the District with neighbouring authorities;
- Access to Sports facilities is good within the Borough;
- Play and youth provision have a good variety and are fairly well distributed.
- Rochford has a reasonable distribution of POS, with approximately 75% of the urban area being within the ANGSt standard of 300m from a POS;
- The Borough has a high quantity standards for Natural and Semi-natural open space and only just misses the target. However, its accessibility standard of 720 as a maximum distance from open space is more than twice the ANGSt standard;
- The level of Amenity Green Space is reasonably good, just missing the target.

REFERENCES:

Rochford District Council Open Space Study 2009 (2010)

Rochford Gap Analysis

The District has developed the Open Space Study 2009 which recommends appropriate provision and accessibility standards and provides an assessment of current provision of open space across the District.

The Open Space Study reflect the guidance outlined in PPG17 and forms part of the evidence base of the Council's Local Development Framework.

Overall Rochford District Council owns or manages over 300 hectares of public open greenspaces including playing fields, parks and gardens.

Natural and Semi-natural

The recommended local standard for Natural and Semi-natural open space is of 3.00ha per 1,000 population. The current provision is of 2.93ha per 1,000 population, which is almost at target level.

No provision standard is set for Country Parks, however the Borough has a provision of 0.9ha per 1,000 population which when combined to the figure for Natural and Semi-Natural brings this provision above the overall standard level.

Parks and Gardens

The recommended standard for Urban Parks and Gardens is 0.10ha per 1,000 population, while the current provision is 0,001ha per 1,000 population.

Amenity Green Space

The recommended standards for Amenity Green Space is 0.3ha per 1,000 population, while the current provision is of 0.26ha per 1,000 population.

Cemeteries and churchyards' provision meets the demand although not subjected to a specific standard.

Children and Young People

Provisions for children and young people are provided as 0.22 sites per 1,000 population, with a recommended standards of 0.25 sites per 1,000 population.

Allotments

The recommended standard and provision of allotments and community gardens are both as 0.058ha per 1,000 population and are therefore meeting the standard.

Sports Provisions

The recommended standard for outdoor Sports Facilities and the provision of this typology of open space are both 3.22ha per 1,000 population, therefore meeting the standard.

Accessibility

The Open Space Study 2009 recommended accessibility standard for different types of POS are defined as:

- Natural and semi-natural open space: 1,200m or a 15 minutes walk;
- Urban parks: 720m or 15 minutes walk;
- Sports provisions: 2,400m or a 10 minutes drive;
- Amenity open space: 1,200m or a 15 minutes walk;
- Children and young people: 480m or a 10 minutes walk;
- Allotments and community gardens: 2,400m or a 10 minutes drive.

TAB.13 Standards per 1000 population of the various typologies of Public Open Space in Rochford. The colours indicate whether the standard is currently achieved.

AUTHORITY	NATURAL & SEMI-NATURAL	PARKS & GARDENS	AMENITY GREENSPACE	ALLOTMENTS	SOURCE
	Hectares / 1000 POP				
Rochford	3.00	0.10	0.26	0.05	Rochford Open Space Study 2009

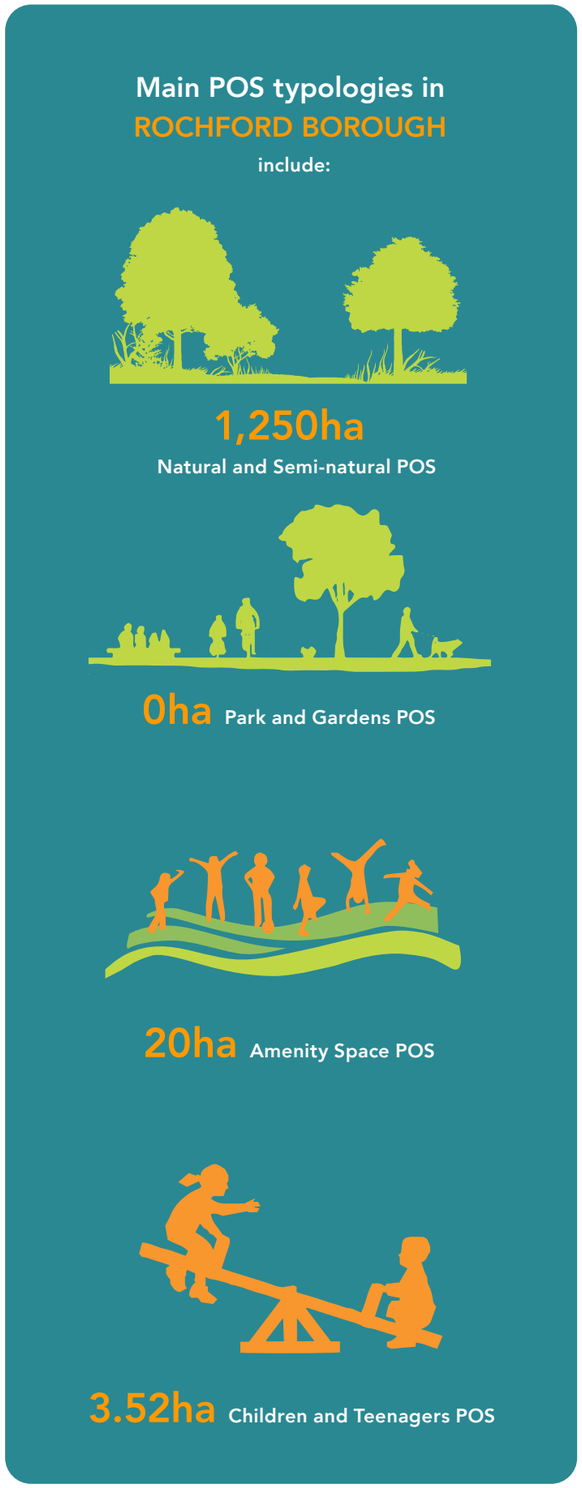
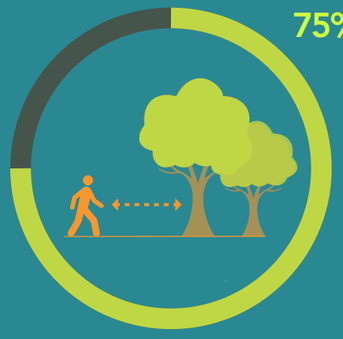


FIG.69 Key POS Index: Rochford

Accessibility to POS provision based on ANGSt Standard

ANGSt recommends that everyone, wherever they live, should have accessible natural greenspace of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home.

Standard for MAXIMUM DISTANCE to a POS (of any typology) is 300m



75% of the Borough's urban area population have access to a POS

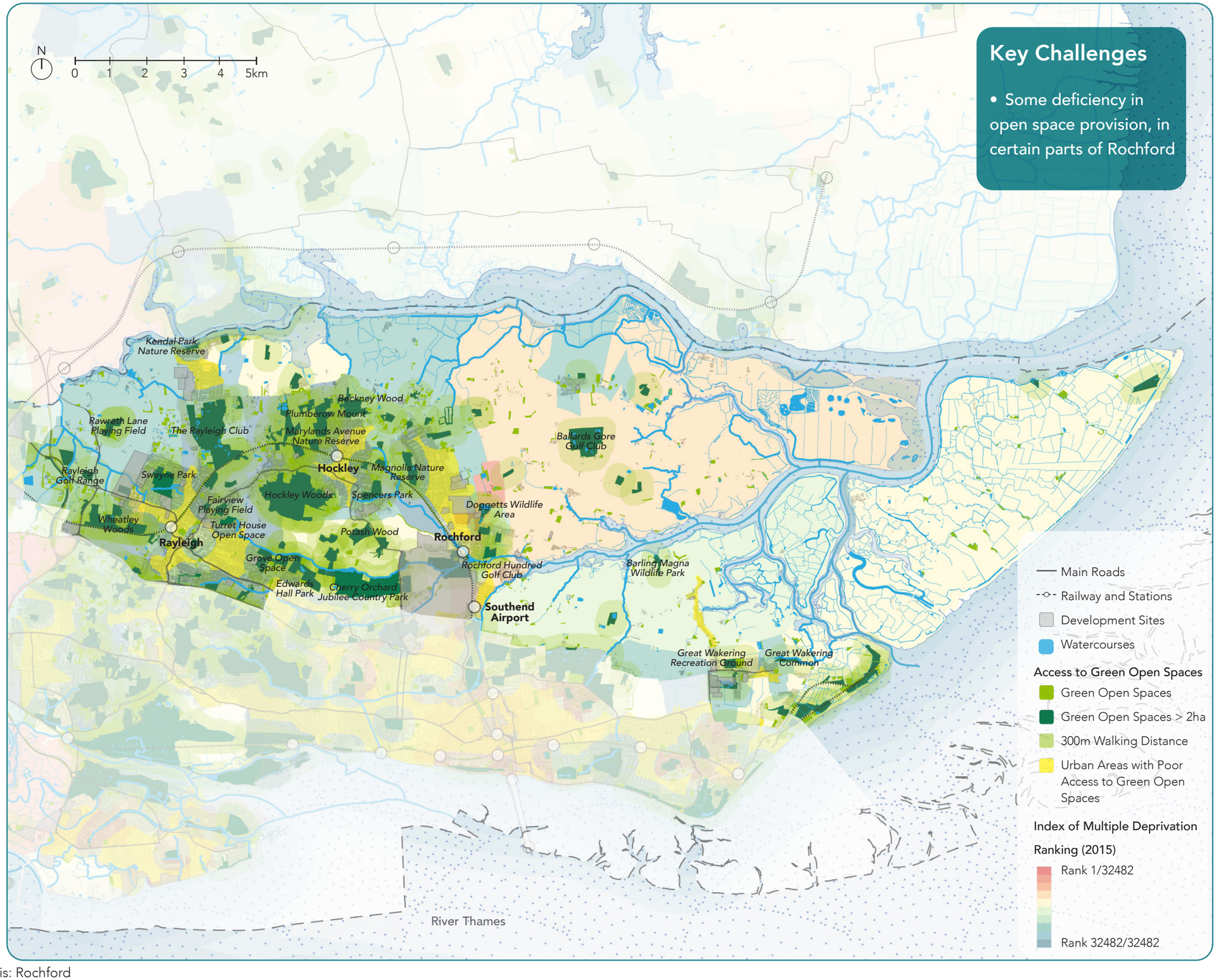


FIG.70 Existing Green Open Space Gap Analysis: Rochford

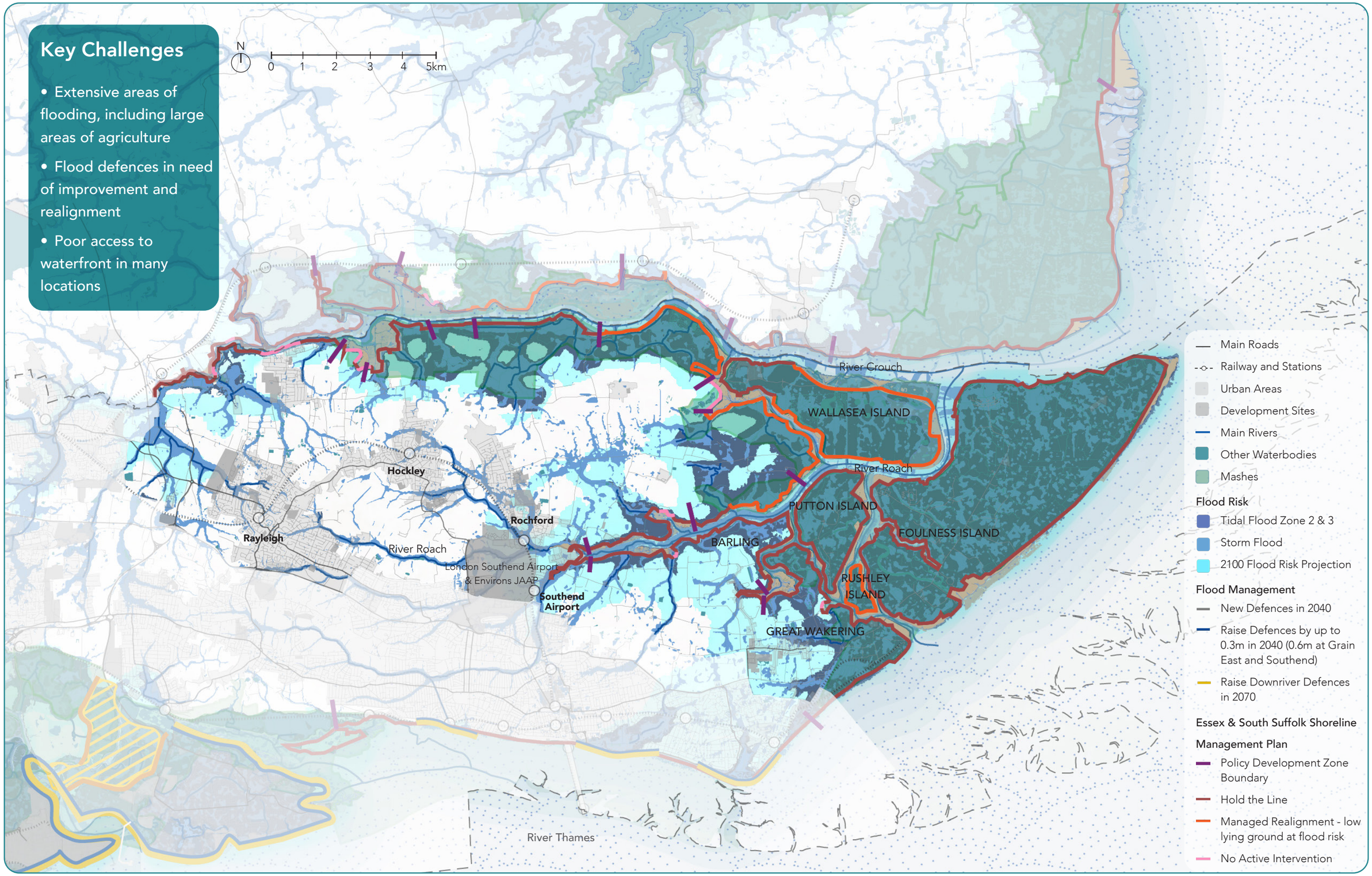


FIG.71 Existing Water Management and Proposed Development Sites: Rochford

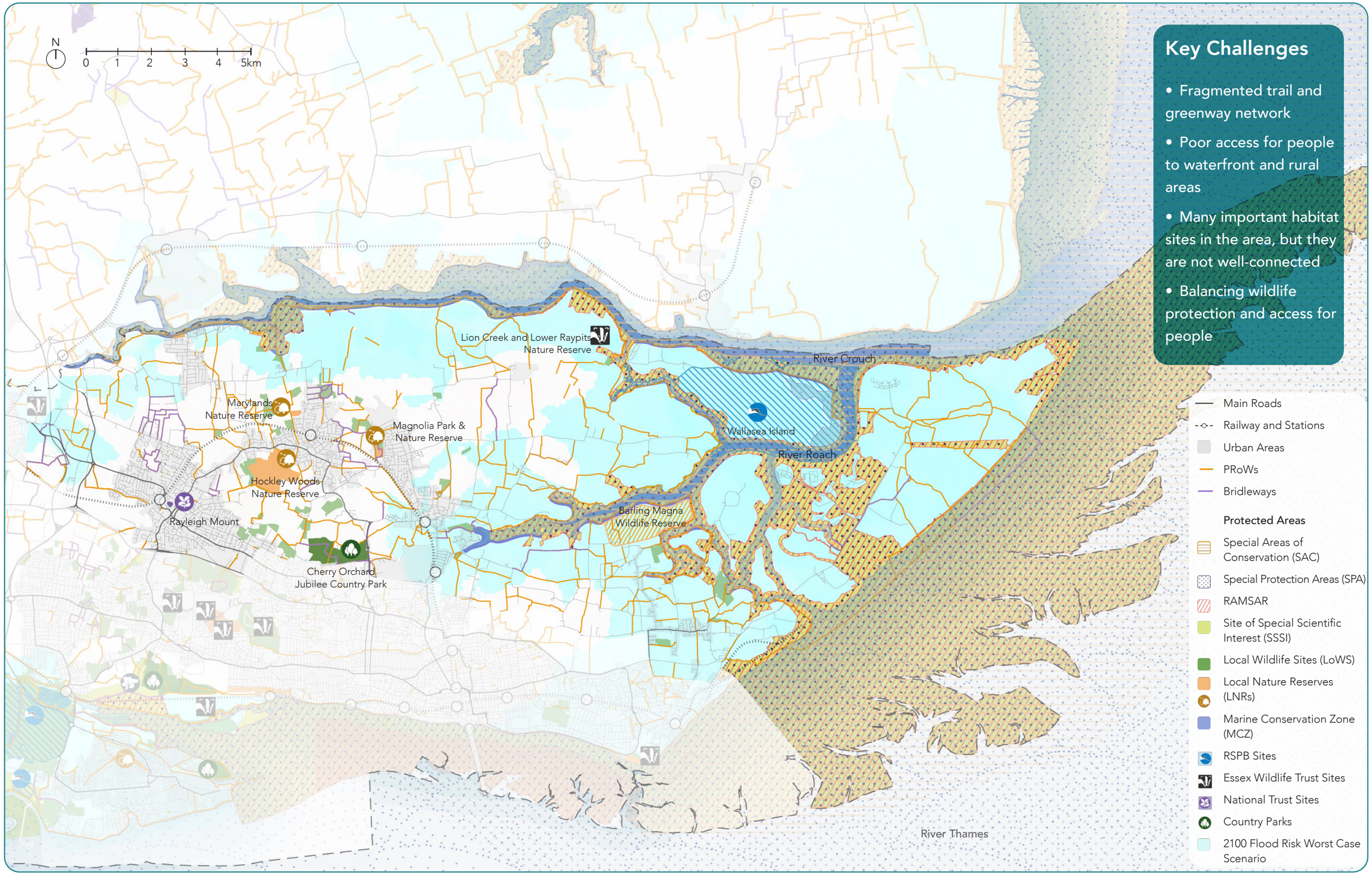


FIG.72 Existing Habitat and Nature Sites, with PRoWs: Rochford

Strategic Opportunities

- Improved access throughout Rochford and into neighbouring areas with enhanced greenways, recreational loops and water crossings, connecting destinations and habitat sites.
- Improved blue corridors, with natural restoration and adjacent trails
- Creation of the Island Wetlands, connecting large areas of realigned shores and intertidal habitats, creating a protective cushion for South Essex, and providing a green link to Southend. See the Island Wetlands description in Volume 1: Section 3
- Creation of the Central Woodland Arc, bridging the Crouch to the Roach rivers. See the Central Woodland Arc description in Volume 1: Section 3
- Stewardships in agricultural areas, and agri-tourism opportunities
- Incorporate GBI into all new developments

FIG.73 Proposed GBI Layout: Rochford (Source: GIS Green Spaces and Agricultural Land from ASELA, Development plots from Local Plans)

4.8 Southend-on-Sea GBI

Southend-on-Sea Public Open Space

Southend is a dense urban area and as a result has limited green or open space, and these are under increasing pressure as the need for development grows. This underlines the need to safeguard current spaces and to incorporate new spaces and facilities in future development schemes.

The Borough has over 577 hectares of green spaces including 8 parks and 14 conservation areas and is home to the longest leisure pier in the world. Natural and Semi-natural

The Borough has 7 miles of award-winning beaches and coastal nature reserves. The nature conservation areas comprise:

- Belfairs Nature Reserve
- Belton Hills
- Leigh Marshes
- Two Tree Island
- Edwards Hall Park
- Waitrose Natural Habitat

The natural and semi-natural open spaces also include 2 woodland sites:

- Owlshall Wood
- Oakwood

Parks and Gardens

Southend has 7 District Parks (more than 20 hectares in size) as well as 18 Local Parks and 13 Neighbourhood Parks (both ranging less than 2 hectares), offering a combination of formal and informal recreation and ornamental features.

Amenity Green Space

A number of sites have been categorised as amenity green space for the purpose of this report, although some may not be strictly 'green' as they range from gardens and courtyards to beeches and walks. They will be reviewed in the course of the green infrastructure study to ascertain their most appropriate classification.

These 40 sites are generally quite small, totalling 17.36 hectares overall.

Children and Teenagers

There are a number of play spaces in Southend, they include:

- 4 Neighbourhood Equipped Area for Play; and
- 32 Local Equipped Area for Play.

Sports Provisions

A number of sports grounds are mentioned in the Southend Borough Council Parks and Green Spaces Strategy 2015-2020, these include football, golf, bowls centre and cricket pitches.

Their combined total area is 103 hectares.

Allotments

There are 19 Allotments in Southend totalling 28.2 Hectares. Allotment sites are well distributed throughout the Borough other than in the central area around Southend town centre and to the south of the A13 in Leigh and Westcliff-on-Sea where there is no provision. The allotment sites provide a valuable recreational resource for the Borough providing opportunities for residents to grow their own produce. The 2004 Open Spaces Study identified an average occupancy rate of 50%. However, this has increased significantly in recent years in line with a national trend of increased popularity of allotment sites and is now understood to be close to 100%.

KEY FINDINGS

- Southend is well provided with Natural and Semi-natural space which includes a number of nature reserves, and 2 woodland sites;
- There are a number of Urban Parks ranging is typology from District to Local Parks, they are fairly well distributed along the periphery of the Borough, with deficiencies identified in the wards of Westborough, Victoria and Kursaal;
- There is no detailed information on location for Amenity Green Space, Children and Teenagers' and Sport Provisions.
- Southend has a good distribution of POS, across the Borough, there are however substantial gaps with areas without access to a POS within 300m.
- The Borough's own standard of 400m catchment area for Local and Neighbourhood Parks is also not met (by approx. 35% of urban area).

REFERENCES:

Southend-on-Sea Borough Council Parks and Green Spaces Strategy 2015 - 2020
Topic Paper on Green and Blue Infrastructure and Climate Change, 2019

Southend-on-Sea Gap Analysis

Southend has developed a Parks and Green Spaces Strategy 2015-2020. The strategy sets out the key standards for public open space in terms of the quantity of space, its accessibility and the quality of these spaces.

The principle standards are:

- Ensure that all residents have easy access to a public open space (of any typology) of at least 0.2 hectares;
- Provide one hectare of POS per 1,000 people.

The strategy recognise that some areas of the town do not currently meet the accessibility standards and aims to improve on this by introducing new open spaces where this is made possible by new developments. It also aims to improve the connections between existing spaces by landscaping and tree planting, including the greening of Southend High Street.

A new Country Park is being considered to the north-east of the Borough (Core Strategy para 9.14) to complement the existing facilities at Hadleigh and Cherry Orchard Jubilee Country Parks in Castle Point and Rochford.

General Quantity Provision

It is estimated that approximately one third of the Borough does not meet the quantity standard of one hectare per 1,000 population, and in particular some areas have less than 0.3 hectares per 1,000 population.

Accessibility Standards

The accessibility standards state that every resident should have access to a public open space of at least 0.2 hectares, although it does not state an appropriate distance or catchment area for this. The assessment has, however, used the following distances:

- District parks: 1.200m radii catchments;
- Neighbourhood parks: 400m radii catchments;
- Local parks: 400m radii catchments.

An accessibility assessment based on these values has shown POS deficiency in some areas. Particularly, the wards of Westborough, Victoria and Kursaal have the most limited provision of open space in the Borough.

TAB.14 Standards per 1000 population of the various typologies of Public Open Space in Southend-on-Sea. The colours indicate whether the standard is currently achieved.

AUTHORITY	NATURAL & SEMI-NATURAL	PARKS & GARDENS	AMENITY GREENSPACE	ALLOTMENTS	SOURCE
	Hectares / 1000 POP				
Southend-on-Sea	1.00	1.00	N/A	0.21	Park & Green Space Strategy 2015-2020

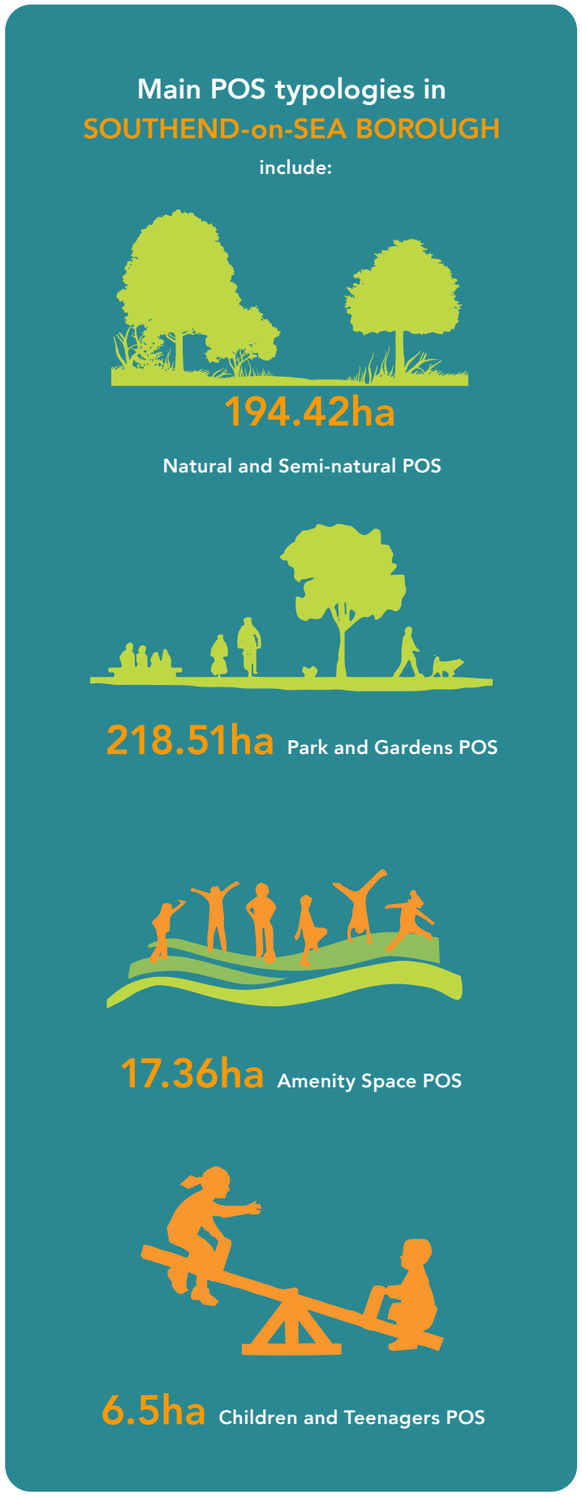


FIG.74 Key POS Index: Southend-on-Sea

Accessibility to POS provision based on ANGSt Standard

ANGSt recommends that everyone, wherever they live, should have accessible natural greenspace of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home.

Standard for MAXIMUM DISTANCE to a POS (of any typology) is **300m**

45%

45% of the Borough's urban area population have access to a POS

Key Challenges

- Deficiency in open space provision, in many urban areas

Oakwood Park
Eastwood Park
Cockethurst Recreation Ground
St Laurence Park
Warners Bridge Park
Sutton Road Cemetery
The Jones Memorial Recreation Ground
Garon Park
Victory Sports Ground
Priory Park
Blenheim Park
Belfairs Woods
Bonchurch Recreation Ground
Westcliff (Springfield Drive)
Prittlewell
Bournes Green Park
Chalkwell Park
Southend Victoria
Southend East
Thorpe Bay
Shoeburyness Park
Belton Hills Nature Reserve
Leigh Cliffs
Leigh-on-Sea
Southend Central
Thorpe Hall Golf Course
Leigh National Nature Reserve
Chalkwell
Westcliff
Prittlewell Square
Southend Cliff Garden
Southchurch Park
Shoeburyness
Southend Pier (Shore)
Thorpe Bay Gardens
Shoebury Common
Gunners Park
Southend Pier (Pier Head)
River Thames

N
0 1 2 3 4 5km

Main Roads
Railway and Stations
Development Sites
Watercourses

Access to Green Open Spaces
Green Open Spaces
Green Open Spaces > 2ha
300m Walking Distance
Urban Areas with Poor Access to Green Open Spaces

Index of Multiple Deprivation Ranking (2015)
Rank 1/32482
Rank 32482/32482

FIG.75 Existing Green Open Space Gap Analysis: Southend-on-Sea

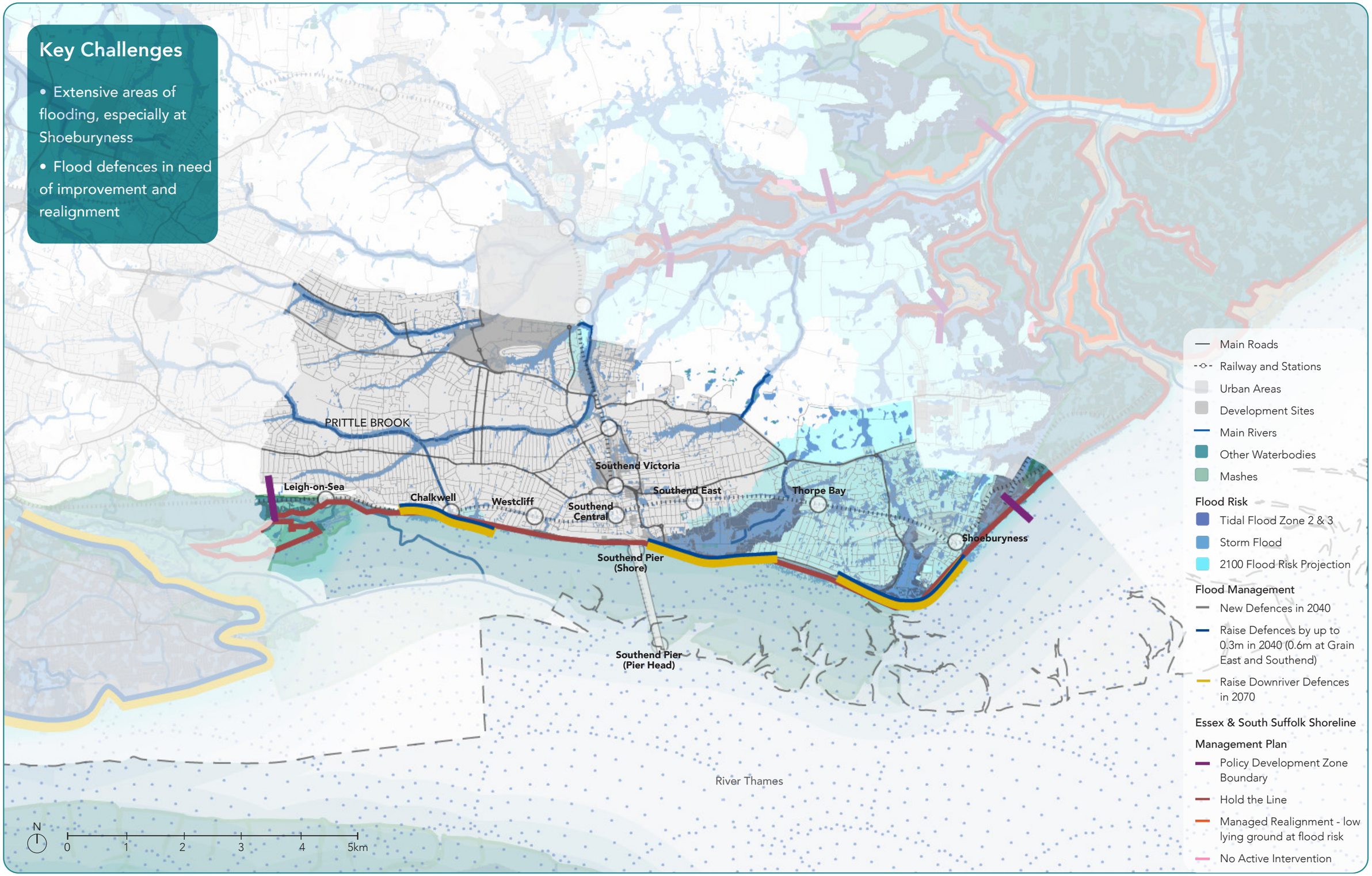


FIG.76 Existing Water Management and Proposed Development Sites: Southend-on-Sea

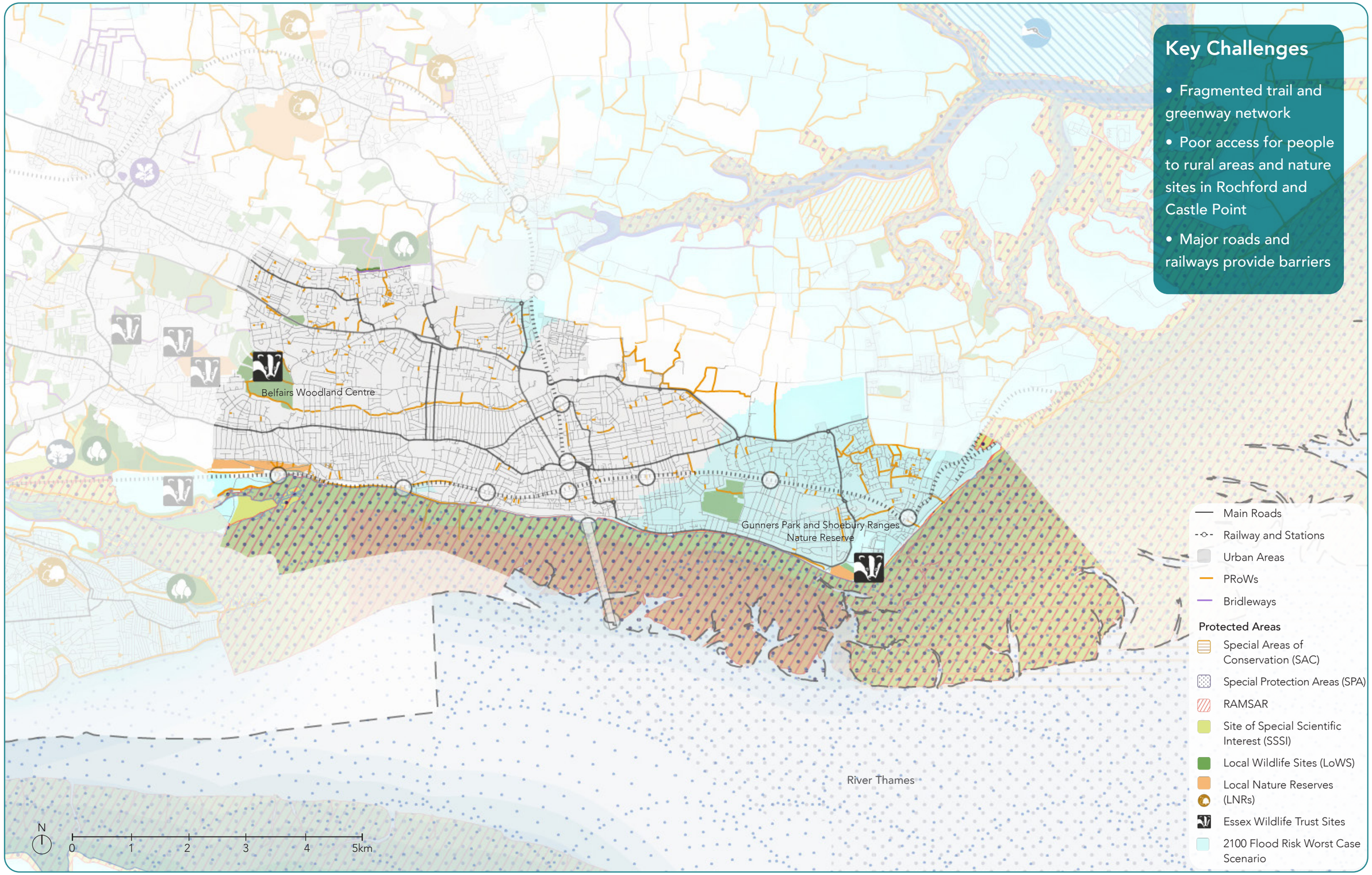


FIG.77 Existing Habitat and Nature Sites, with PRoWs: Southend-on-Sea

Strategic Opportunities

- Improved access throughout Southend and into neighbouring areas with enhanced greenways, recreational loops and green crossings, connecting destinations and habitat sites.
- Improved blue corridors, with natural restoration and adjacent trails
- Linking to the Island Wetlands, with strategic parks and greenways along the northern boundary of Southend. See the Island Wetlands description in Volume 1: Section 3
- Greening the High Street at Central Southend: link linear green spaces to the north; tree-planting and seating towards Southend Cliff Gardens
- Create a series of special destinations along the waterfront promenade with planned resort developments
- Incorporate GBI into all new developments
- Increase urban open space allocation on vacant lots and as land becomes available

FIG.78 Proposed GBI Layout: South-on-Sea (Source: GIS Green Spaces and Agricultural Land from ASELA, Development plots from Local Plans)

4.9 Thurrock GBI

Thurrock Public Open Space

(only for reference as Thurrock has undertaken their own GBI study)

Thurrock is undergoing extensive regeneration and, as population in the District increases in line with the draft Thurrock Local Plan, all types of open space are likely to come under pressure, however, the regeneration is also providing an opportunity to create a network of open spaces within existing and new communities.

Natural greenspace is currently not evenly distributed across the Borough, and the central area is especially deficient. The riverside is an important, but under utilised resource that could address this shortfall.
Natural and Semi-natural

There are 30 natural and semi-natural open spaces within the District and some have specific designations such as SPA and SSSI. The primary purpose of the majority of these sites is nature conservation and therefore facilities are limited.

There are two Country Parks: Langdon Hills Country Park and Belhus Woods Country Park – the latter is also designated a Living Landscape area.

These and Coalhouse Fort and Park have Green Flag status. The Grays Beach Riverside Park previously had Green Flag status, but does not currently. Country parks are very positively regarded, but tend to exclude those who have no independent transport, as there is no alternative means of reaching them.

Parks and Gardens

There are no formally laid out parks in Thurrock dedicated solely to quiet enjoyment and relaxation, although the Country Parks outlined above performs some of their functions.

Amenity Green Space

Sites that have been identified as Amenity Green Space include 96 sites above 0.3 hectares in size and a further 37 that are between 0.2 and 0.3 hectares.

The Open Spaces Strategies 2006-2011 identified opportunities to address deficiencies in provision of open space at the Claudian Way/Brentwood Road, Dickens Avenue, Ruskin Road and Gabborns Crescent sites.

There are 11 churchyards and cemeteries in the District, all managed by Thurrock Council, they provide a tranquil setting and opportunities for wildlife conservation and biodiversity to thrive.

Children and Teenagers

There are a number of play spaces in Thurrock. They are categorised as:

- 19 toddler play spaces, providing localised play provision for children under 6 years old;
- 12 small equipped play spaces suitable for children between 4 and 8 years old, and
- 36 large equipped play spaces that can accommodate facilities such as adventure playground, skate ramps or ball walls and are suitable for young teenagers.

Sports Provisions

There are a number of football, rugby and cricket pitches in the District. The Open Spaces Strategies 2006-2011 has however identified a number of deficiency/shortfall due to increase due to population expansion to 21 adult football pitches, 7 junior football pitches and 17 junior rugby pitches.

Allotments

There are currently 21 allotment sites in Thurrock that are self-managed by allotment associations. The decision to move to self-management of allotments was taken in 2003 and a proactive arrangement has evolved with plot holders, the council and allotment association representatives.

KEY FINDINGS

- Natural and semi-natural open space is not evenly distributed across the Borough, and the central area is especially deficient. The riverside is an important but under utilised resource that could address this shortfall;
- There are two Country Parks which, however, tend to exclude those who have no independent transport, as there is no alternative means of reaching them;
- Thurrock is well provided with Amenity Green Space, with over 130 small and medium sites. With only small deficiencies identified in the Open Spaces Strategies;
- There are a number of deficiencies in sports provisions which are likely to increase due to population expansion;
- Play and youth provision have a good variety and are fairly well distributed.
- Thurrock has a good distribution of POS, across the Borough, there are however, substantial gaps with areas without access to a POS within 300m.

REFERENCES:

Thurrock Council Open Space Strategy, 2006 - 2011
Thurrock Active Place Strategy, 2019

Thurrock Gap Analysis

The Borough Open Space Strategy 2006-2011 is being superceded by the Active Place Strategy at the end of 2019, with the aim to deliver a network of high quality open spaces and strategically plan for their accessibility.

Natural and Semi-natural

The recommended local standard for Natural and Semi-natural open space is of 2.0ha per 1,000 population. The Open Space Strategy does not indicate the current provision although it notes some areas which are nor provided with this typology of open space.

Parks and Gardens

The recommended standard for Parks and Gardens is 0.7ha per 1,000 population. The Open Space Strategy does not indicate the current provision although it notes some areas which are not provided with this typology of open space.

Amenity Green Space

The recommended standards for Amenity Green Space is 0.8ha per 1,000 population. The Open Space Strategy does not indicate the current provision although it notes some areas which are nor provided with this typology of open space.

Cemeteries and churchyards' provision meets the demand although not subjected to a specific standard.

Children and Young People

Recommended standards are for 1.80m2 per childbed space. The Open Space Strategy does not indicate the current provision although it notes some areas which are nor provided with this typology of open space.

Allotments

The recommended standard for allotments and community gardens is 6,25 plots per 1,000 population. Analysis of the distribution indicates provision in some areas of Thurrock is insufficient.

Sports Provisions

The Open Space Strategy does not indicate the current provision although it notes some areas of deficiency in playing pitch provision based on current and projected population.

Accessibility

The Open Space Study 2009 recommended accessibility standard for different types of POS are defined as:

- Natural and semi-natural open space and Country Parks: 300m or a 5 minutes walk;
- Parks and gardens: 400m to 1,000m dependent on size of park;
- Sports provisions: 1,200m or a 15 minutes walk;
- Amenity open space: within 100m of residential dwellings with no roads in between;
- Children and young people: Toddler Play Space 100m, Small Equipped Play Space 400m and Large Equipped Play Space 1,000m;
- Allotments and community gardens: 300m to 1,200m catchment area dependent on number of plots.

TAB.15 Standards per 1000 population of the various typologies of Public Open Space in Thurrock. The colours indicate whether the standard is currently achieved.

AUTHORITY	NATURAL & SEMI-NATURAL	PARKS & GARDENS	AMENITY GREENSPACE	ALLOTMENTS	SOURCE
	Hectares / 1000 POP				
Thurrock	2.00	0.70	0.80	0.16	Thurrock Open Space Strategy 2006-2011

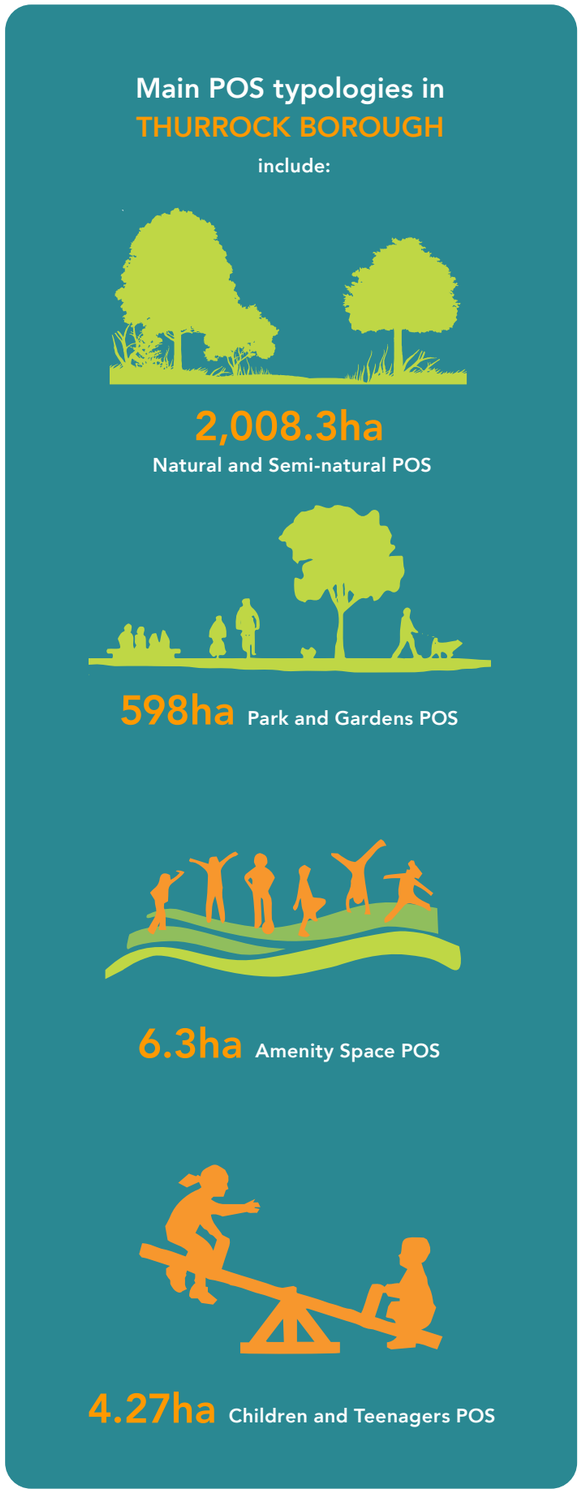


FIG.79 Key POS Index: Thurrock

Accessibility to POS provision based on ANGSt Standard

ANGSt recommends that everyone, wherever they live, should have accessible natural greenspace of at least 2 hectares in size, no more than 300 metres (5 minutes walk) from home.

Standard for MAXIMUM DISTANCE to a POS (of any typology) is **300m**

50%

50% of the Borough's urban area population have access to a POS

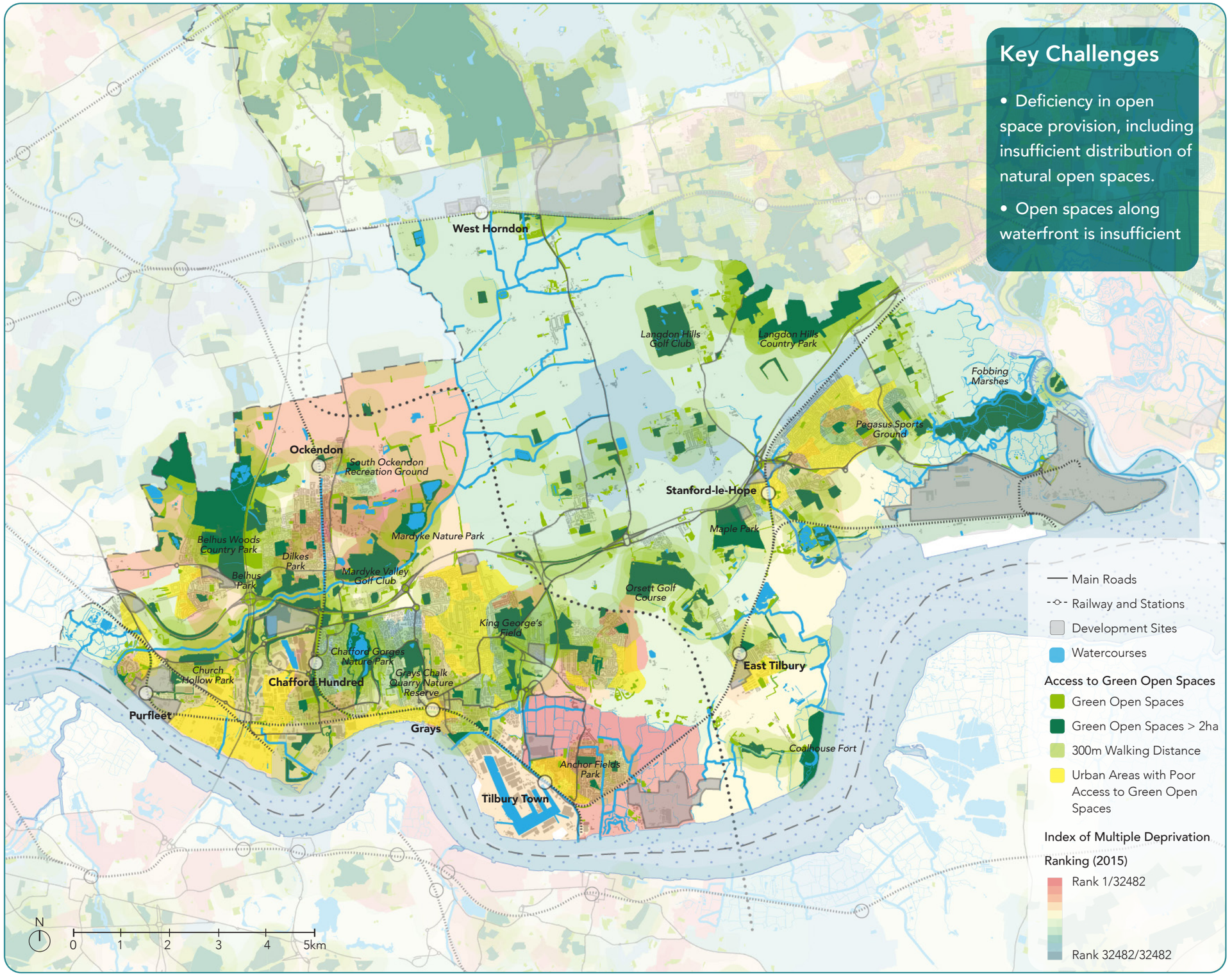


FIG.80 Existing Green Open Space Gap Analysis: Thurrock

Key Challenges

- Extensive areas of flooding, all along the Thames, and within the Mardyke Valley
- Flood defences in need of improvement . Poor wildlife provision and public access within the flood defence scheme
- Industrial waterfront compatibility with nature and people

West Horndon
MARDYKE VALLEY
Ockendon
FOBBING MARSHES
Stanford-le-Hope
East Tilbury
Chafford Hundred
Grays
Purfleet
Tilbury Town

N
0 1 2 3 4 5km

Main Roads
Railway and Stations
Urban Areas
Development Sites
Main Rivers
Other Waterbodies
Mashes

Flood Risk
Tidal Flood Zone 2 & 3
Storm Flood
2100 Flood Risk Projection

Flood Management
New Defences in 2040
Raise Defences by up to 0.3m in 2040 (0.6m at Grain East and Southend)
Raise Downriver Defences in 2070
Habitat Creation/ Replacement
with potential new Defences (in 2020, 2040, 2050, 2065)
Flood Storage in 2070
Improve Thames Barrier in 2070
Proposed EA Defences in 2070 for Flood Storage Sites

Essex & South Suffolk Shoreline Management Plan
Policy Development Zone Boundary
Hold the Line
Managed Realignment - low lying ground at flood risk
No Active Intervention

FIG.81 Existing Water Management and Proposed Development Sites: Thurrock

FIG.82 Existing Habitat and Nature Sites with PRoWs: Thurrock

Strategic Opportunities

- Improved access throughout Thurrock and into neighbouring areas with enhanced greenways, recreational loops and green crossings, connecting destinations and habitat sites.
- Tilbury Cruise Terminal access and Thames Path extension
- Cycle route to DP World London Gateway and Thames Enterprise Park
- Creation of the Mardyke Valley Country Park (part of the Thames Chase), connecting from Rainham Marsh to Brentwood. See the Mardyke Valley description in Volume 1: Section 3
- Creation of Central Marshlands, linking along the waterfront from Tilbury Fort to Fobbing Marshes. See the Central Marshlands description in Volume 1: Section 3
- Restoration of landscape character at the 'Land of Fanns'
- Incorporate GBI into all new developments

- Roads
- Railway and Stations
- Proposed Development Sites
- Flood Zone 2 & 3
- Proposed Parklands
- Existing Green Open Spaces
- Agriculture Land

GBI Layout

Roadways
- Urban Green Roadways

Railways
- Urban Green Railways

Blueways
- Blueways
- Ferries

Greenways (existing/proposed)
- Primary Greenways
- Secondary Greenways
- Trail Network

England Coast Path
- England Coast Path (existing)
- England Coast Path (proposed)

Strategic Parks
- Country Parks
- Proposed Strategic Parks

Key Destinations
- RSPB Sites
- Explore Essex Sites
- Essex Wildlife Trust
- Nature Reserves
- Woodland Trust Sites

Key Activities
- Golf Courses
- Marinas / Yacht Clubs/Sailing Clubs

Key Landmarks
- Heritage Landmarks
- Industrial Landmarks
- View Points

FIG.83 Proposed GBI Layout: Thurrock (Please refer to Thurrock's Green Infrastructure Study, Source: GIS Green Spaces and Agricultural Land from ASELA, Development plots from Local Plans)

5 Case Studies

Marston Vale Community Forest

Background

The Forest of Marston Vale is the 61 square miles between Bedford and Milton Keynes and was historically a very different place than it is today. Massive pits had been dug throughout the countryside to supply Stewartby Brickworks with clay – many were then filled with waste and became landfill. Tree cover was a pitiful 3% - a third of the national average at the time.

To help the area recover from the effects of these industries, the Government made the area a Community Forest – one of 12 in the UK – in the early 90's. The idea was that planting trees and using woodlands would make life better for people, and wildlife.

Now that the area is greener, the key challenge is keeping the balance between the environment and new developments like housing and warehouses. This involves insuring that every time a new development goes ahead, the overall environment benefits from a net environmental gain.

Trustees

The following organisations and individuals are current Members of the Forest of Marston Vale Trust:

- The Trustees
- The Forest Volunteers
- The Forest Team
- Bedford Borough Council
- Central Bedfordshire Council
- The Association of Town and Parish Councils
- Beds Rural Community Charity
- Hanson Building Products Ltd
- The Bedfordshire, Cambridgeshire, Northamptonshire and Peterborough Wildlife Trust

Management

The Forest Centre & Millennium Country Park is wholly owned and operated by the Forest of Marston Vale Trust and receives no revenue funding from the public sector. Capital and revenue budgets are the responsibility of the Trust and are generated through a combination of the commercial activities of the Forest Centre, partnerships with businesses and securing grants/donations.

The Forest of Marston Vale Trust operates as a social enterprise to provide a sustainable financial basis for the ongoing creation of the Forest of Marston Vale, and within the remit the continued successful operation and management of the Forest Centre & Millennium Country Park. The business is wholly owned by the Forest of Marston Vale Trust and any profits made by Marston Vale Services Ltd (e.g. through conferencing, café, gift shop, functions) are returned to the Trust.

FIG.84 Marston Vale Community Forest

London National Park City

A City of 15,000 Species

London is one of the world's most inspirational, distinctive and iconic cities. It is home to 9 million people, nearly as many trees, and 15,000 species of wildlife. Thousands of years of human activity is visible – but London is shaped by its hills, valleys and rivers, too. Home to four World Heritage Sites, London's urban and built heritage sits alongside its conserved natural landscape.

Londoners share a very long and proud tradition of protecting and enjoying natural and cultural heritage. Friends of parks, town planners, the Royal Family, the Corporation of London, the Greater London Authority, councils, government departments, museums, campaigners, allotment keepers, developers, farmers, builders, charities and generations of millions of gardeners – all continue to contribute to making London one of the greenest cities in the world for its size.

A New Kind of National Park

National Parks are inspiring places that capture people's hearts and minds. Traditional National Parks are usually designated by a central or regional government with definitions and criteria that vary between countries.

The International Union for the Conservation of Nature's (IUCN) definition of a National Park is:

"A large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities."

Cities with their distinctive, urban, natural and cultural heritage, historic landscapes and many opportunities for outdoor recreation, can meet many of the requirements for becoming a National Park. The obvious barrier is that they are not the countryside or wilderness that people expect of National Parks.

However, cities are significant and incredibly important habitats that are full of potential – not least because so many of us live in them.

Taking inspiration from the successes of National Parks, National Park Cities are a new kind of "national park" which sit outside of legislation in England but may well fit in the criteria for national park families in other counties.

The term "National Park City" is used to respectfully and necessarily distinguish these citywide national parks from traditional rural National Parks and Urban National Parks. Urban National Parks are found inside or beside cities, but as yet don't include entire cities.

The World's First National Park City

Launched in July 2019, the London National Park City is a place, a vision, a movement and a way of organising.

Becoming a National Park City is not an award, it is the beginning of a journey and a large-scale and long-term challenge to improve life through everyday actions and strategic policy. Working with residents, visitors and partners, London aims to encourage people to:

1. Enjoy London's great outdoors more

2. Make the city greener, healthier and wilder

3. Promote London's identity as a National Park City

The foundations for London to become a National Park City are already in place. London not only has extraordinary natural heritage, but a strong cultural caring for and enjoying life in the city.

There is an incredible amount happening in our cities, much of it unsung, some of it isolated. Much more can be achieved.

A defining quality of a National Park City is to stimulate an atmosphere in which millions of people take everyday actions to improve the quality of their lives and enhance the fabric of the city. Everyone in the city can both benefit and contribute.

Management

A new London National Park City Partnership was formed or groups and organisations before the launch of the London National Park City in 2019. The Partnership is led by a steering group and governed by a London National Park City Charter. An Action Plan is agreed on a regular basis which sets out key activities that need to be delivered and progress is monitored by a State of the National Park City Report.

The National Park City Foundation is an independent charity that has been formed to help make the London National Park City a success and to champion the National Park City concept. It will also support local action by helping to raise and direct funds and investment, helping Londoners scale-up their activities and to fill in gaps where there is a lack of community action or support.

FIG.85 London National Park City

Loch Lomond & The Trossachs National Park

FIG.86 Loch Lomond & The Trossachs National Park

Background

Loch Lomond & The Trossachs National Park is home to some of the most iconic wildlife and landscapes found in Scotland. Across the Park, 67 sites are designated for their special nature conservation value and the Park holds strategically important populations of species such as Atlantic Salmon, golden eagle and native oak woods amongst others.

These landscapes have been created and shaped by both natural and human forces over millennia and are continuously evolving as climate and the use of the land changes. In recent history significant land use changes have included the spread of commercial forestry, the abandonment of grazing land for livestock in some areas and the growth of renewable energy production such as run of river hydro schemes in parts of the Park and wind farm developments just outside the Park boundary.

Managing and protecting the Park's natural heritage, cultural heritage, land and water resources in a sustainable way is central to be a National Park. The National Park Partnership Plan explains how the Park Authority and partners will look after what is special about Loch Lomond & The Trossachs for future generations.

Achievements to Date

Since the birth of the Park in 2002, many organisations and individuals have been involved in delivery benefits to nature conservation and landscape quality:

- native woodland cover has increased, degraded upland peatland habitats have been restored;
- water quality has been improved in some water bodies area;
- vulnerable populations of species such as red squirrel and black grouse are being protected by coordinated action

Conservation

The National Park is valuable and beautiful, home to rich landscapes and wildlife and treasured by millions. However, the natural environment of the Park faces significant threats. The aim is to work towards overcoming these, to achieve positive change and a more sustainable long-term future – for people and nature.

Lochs & Rivers

There are 92 rivers and loch water bodies that fall completely or partially within the Loch Lomond & The Trossachs National Park and the five coastal water bodies which partially border the National Park.

Objective by 2023:

- Improve water quality by reducing point source and diffuse pollution
- Improve habitat quality, particularly focussing on riparian habitats to provide natural flood management, improve ecology and climate change benefits
- Explore opportunities to demonstrate benefits of natural flood management in Strathard
- Enable fish to access rivers by adapting artificial barriers
- Improve quality of water environment by carrying out river bank protection, restoration, re-connecting and re-watering back channels on targeted rivers
- Monitor current health of riparian and aquatic species populations
- Deliver education in schools and communities to highlight aquatic biodiversity and water quality
- Plant riparian woodland to enhance aquatic ecosystems, cooling, strengthen woodland habitat networks, and help manage flooding
- Raise awareness to the health and recreation benefits of improved water quality
- To raise awareness of marine litter and pollution affecting the National Park's coastal environment and communities
- To produce and begin implantation of a strategic plan that addresses how to tackle the problems within marine litter and pollution in the Sea Lochs

Land Management

The aim is to establish and maintain positive and productive relationships with land managers in the National Park, helping them to deliver optimum public benefits from their use of land whilst achieving a viable economic return.

A support service to land managers in accordance with state aid regulations (Articles 21, 22, 38 and 39 of European Commission Regulation 702/2014) is offered. The Land Use team works proactively with land managers to develop Integrated Land Management Plans that deliver a wide range of integrated land use objectives within a business context.

The advisory service is supported by Conservation, Planning and Access teams, as well as external partners such as Forestry Commission Scotland and Scottish Natural Heritage. They have call-off contract arrangements with specialist consultants in conservation and agri-environment, woodland and forestry, farm business, tourism and renewable energy.

Integrated Land Management Plans

The Park Authority owns very little land within the National Park. The land is owned by a number of different landowners, ranging from small farms to extensive estates. Many farms/estates have been in the same family for generations, long before the creation of the National Park.

The land holdings are prioritised, based on their potential to deliver significant results in relation to National Park priorities. Clusters of land managers collaborate, where this increases the potential to deliver results at a landscape scale.

Grants & Funding

Tree Planting Grant Scheme: encourages small scale tree planting in the National Park.

Scottish Rural Development Programme: funds a range of economic environmental and social measures for the benefit of rural Scotland.

Bay Area Challenge, California

Background

In May 2017, the Bay Area Challenge launched with a regional call to action to bring together local residents, community organizations, public officials and local, national, and international experts to develop innovative solutions that will strengthen the region's resilience to sea level rise, severe storms, flooding, and earthquakes. The final design concepts -unveiled on May 17th 2018 - are meant to inspire, catalyze action, and push along the path to a more resilient future.

A series of teams were invited to look at various sites around the Bay. At each site selected, initial design ideas honed in on addressing ongoing climate issues facing the Bay Area, like sea level rise, severe flooding, and seismic risks, alongside other, sometimes more pressing challenges, including lack of housing, displacement, gentrification, limited access to public land and outdated transportation.

One concept provided by the Field Operations team, titled "South Bay Sponge" provides a concept for using nature and natural systems as a primary tool for climate adaptation and resiliency in the South Bay, inspired by both the historic function of the region's inter-tidal marshlands as flood protection, as well as by the remarkable efforts to restore the South Bay Salt Ponds. The potential of a large-scale assemblage of remnant marshlands, newly restored salt ponds and newly constructed wetlands as the core component of a regional flood protection strategy is at once radically innovative, but also resonant with the South Bay landscape today. In addition to addressing climate adaptation, the South Bay Sponge can give the landscapes of the South Bay a powerful and legible identity. (Resilientbayarea.org)

Size: 20 miles of shoreline

Key Features

· San Francisco Bay Area is proactively reimagining a better future by creating a blueprint for resilience;

· The ideas generated by the Bay Area Challenge have inspired, activated, and informed individuals and institutions throughout the region to take seriously the threat of climate change; and

· The Bay Area passed a ground-breaking ballot initiative to generate hundreds of millions of dollars for wetland and habitat restoration, flood control and public access along the shoreline.

FIG.87 South Bay Challenge Birdeye Visual

FIG.88 South Bay Challenge Waterway Visual

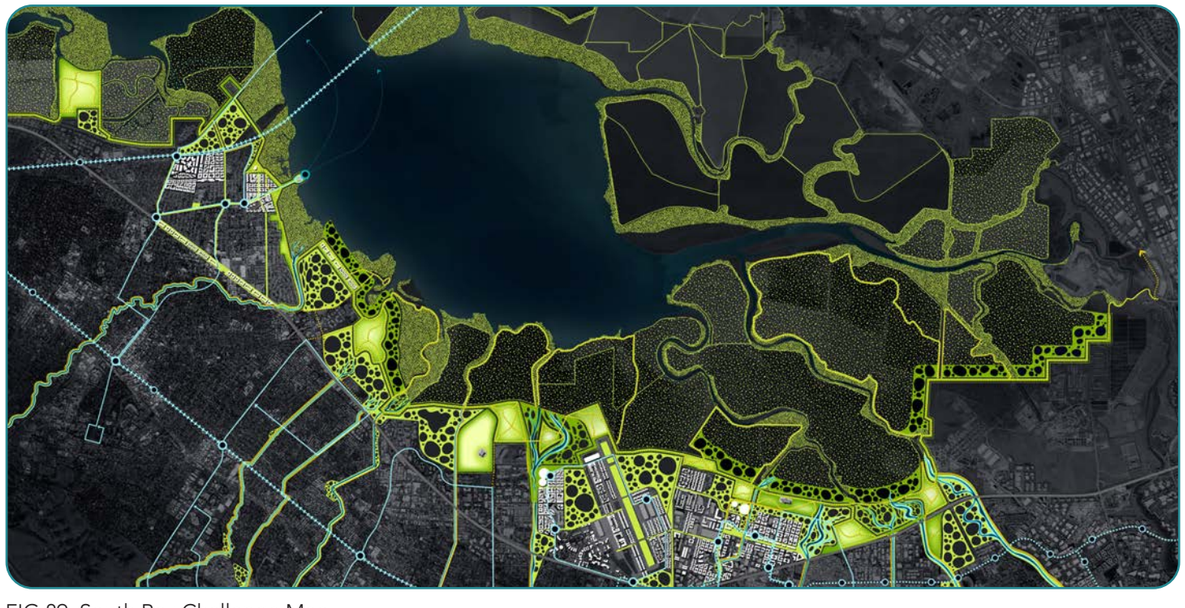


FIG.89 South Bay Challenge Map

Emscher Landscape Park, Essen

Background

The Emscher – a river coursing through time in a region that has been in constant, turbulent flow of change for decades. The history of this aquatic landscape reflects the history of its region as almost no other natural area in Germany does. At the height of industrialisation, the Emscher's original sate was irreversibly altered. Many stretches of this once winding river became a heavily polluted concrete wastewater drain. The Emscher was an element of the regional, industrial infrastructure. Many industrial relics of the smoky old Ruhr area now lie idle. Instead of smoking chimneys, green landscapes predominate in many places.

The Ruhr area is still Germany's industrial centre, but the most energy intensive production has now largely been outsourced to other parts of the world. This economic change has led to a new perception of nature. The Emscher is no longer regarded as just an instrument of industrial production but is seen as a valuable living space that contributes to upgrading the region and enhancing quality of life.

The creation of the Emscher Landscape Park provided an answer for one of the most degraded landscapes in Europe. The Ruhr Valley in Western Germany, historically an area driven by coal mines and steel mills, declined during the 1970s. The former industrial activity led to brownfields in desperate need of restoration.

In the late 1980s there was a call for innovative solutions including:

· Using ecology as the central organizing focus for the regeneration of the region's economy as well as its environment;

· Turning industrial wastelands into a regional network of open space, recreation, and cultural resources; and,

· Being the largest renaturalization project in Europe, and one which is rare in the world for undertaking brownfields restoration on a regional, rather than site- specific, basis.

Size: 45,000 ha + 85 km long

Key Features

· In under 2 decades, dissected and polluted landscapes have been transformed into parkland;

· Industrial relics have been repurposed as intriguing landmarks, facilities and recreational structures;

· A major development theme is the continuation of the ecological improvement of the river Emscher and its tributaries;

· 400 Km of new paths and trails; and

· The networking of different parks into a single park system has been internationally recognised as an outstanding achievement.

Project cost: above 4,000,000 EUR. Funding source: Public national budget, Public regional budget, Public local authority's budget, Corporate investment, Funds provided by non-governmental organization

Key Lessons

The development of technical and natural infrastructure has to be carried out together. Humans have irreversibly changed the natural state of the Emscher system over the past century. Only a comprehensive package of mostly concealed technical and water management measures can establish the prerequisites for ecological development of the former effluent streams. Thus, technology and nature should be considered together today and in the future.

The Emscher conversion has shown that the creation or modernisation of new infrastructure often has a direct effect on nearby eco-systems. Thus, in the case of infrastructure projects, issues concerning the possible generation of ecological improvements that exceed the simple avoidance of negative effects should be included in the planning from the beginning.

The revitalisation of eco-systems creates new ecosystem services and thus considerably contributes to the social, cultural and economic enhancement of an entire region, raising its level of attractiveness for the people and potential investors.

The development of technical and natural infrastructure has to be carried out together. Humans have irreversibly changed the natural state of the Emscher system over the past century. Only a comprehensive package of mostly concealed technical and water management measures can establish the prerequisites for ecological development of the former effluent streams. Thus, technology and nature should be considered together today and in the future.

The Emscher conversion has shown that the creation or modernisation of new infrastructure often has a direct effect on nearby eco-systems. Thus, in the case of infrastructure projects, issues concerning the possible generation of ecological improvements that exceed the simple avoidance of negative effects should be included in the planning from the beginning.

The revitalisation of eco-systems creates new ecosystem services and thus considerably contributes to the social, cultural and economic enhancement of an entire region, raising its level of attractiveness for the people and potential investors.

Creating resilient regions requires a network including all agents and their knowledge. Regions, and consequently also their infrastructures, must be 'resilient' – that is, they must be highly adaptive and robust in times of economic, social and ecological crises. This requires that the knowledge of various agents be connected as well as the development of new management models.

Informal urban planning instruments such as master plans should complement legal planning instruments. In this way, the expertise of many actors becomes utilisable, and the focus shifts from territorial borders to the actual spatial dimensions of infrastructure projects.

Informal planning instruments and processes thrive on the desire of committed stakeholders to actively contribute to the process. Cooperatives

are particularly important in this regard, combining diverse stakeholders whose common goals are responsible, long-term, value-creation.

A variety of innovations as an impetus for regional transformation. Infrastructure is embedded in a regional environment. For this reason, infrastructure has to be adapted to the region's demographic, economic and social conditions. In this regard, the Emscher conversion is exemplary for other infrastructure projects.

Infrastructure modernisation requires not only technical innovation but also a comprehensive process that demands ecological, social and institutional innovations. It therefore requires that the collaboration of many stakeholders and diverse innovations be linked.

Infrastructure should be seen as part of a comprehensive system that has facilitated the creation of a new culture of innovation in the Ruhr metropolis. In subsequent decades the infrastructure will have to continuously adapt to the dynamically changing conditions, both local and global.

Infrastructure conversion can become a driver for improved quality of life. Quality of life cannot be measured one-dimensionally using economic metrics. Instead, it is influenced considerably by additional factors such as social setting, security and an intact environment, which planning, and infrastructure processes should take into account.

New thinking in urbanistic, architectural and cultural processes is key to upgrading the Ruhr area. For a key infrastructural project such as the Emscher conversion the enhancement of regional quality of life is one of the most important quality criteria and thus should be a substantial element of the project planning.

Positive effects on the population's quality of life raise the acceptance of infrastructure projects. Conversely, negative effects can undermine acceptance. The potential of social conflicts with regard to infrastructure projects must be identified at an early stage and reduced by intensively involving those affected.

Acceptance requires participation. Citizen participation in infrastructure projects should be regarded as an opportunity. The benefit of infrastructure projects can often only be seen in the mid to long-term, while lengthy construction phases directly affect the local population. It is particularly important to involve the population at an early stage in order to gain its continuous support for the lengthy realisation of infrastructure projects despite the initial burden.

There is no 'blueprint' for participation. Rather, the participating concepts must be specifically tailored to match the corresponding construction project and the local population's requirements. Thus, participation processes are 'laboratory processes' that continuously develop further over the course of infrastructure projects.

Participation is not an instrument to attract participation and is not a one-way street. This means that changes should be possible during the realisation and ideally also for the goals of larger infrastructure projects.

FIG.90 Emscher Park Waterway

FIG.91 Emscher Park Climbing Wall

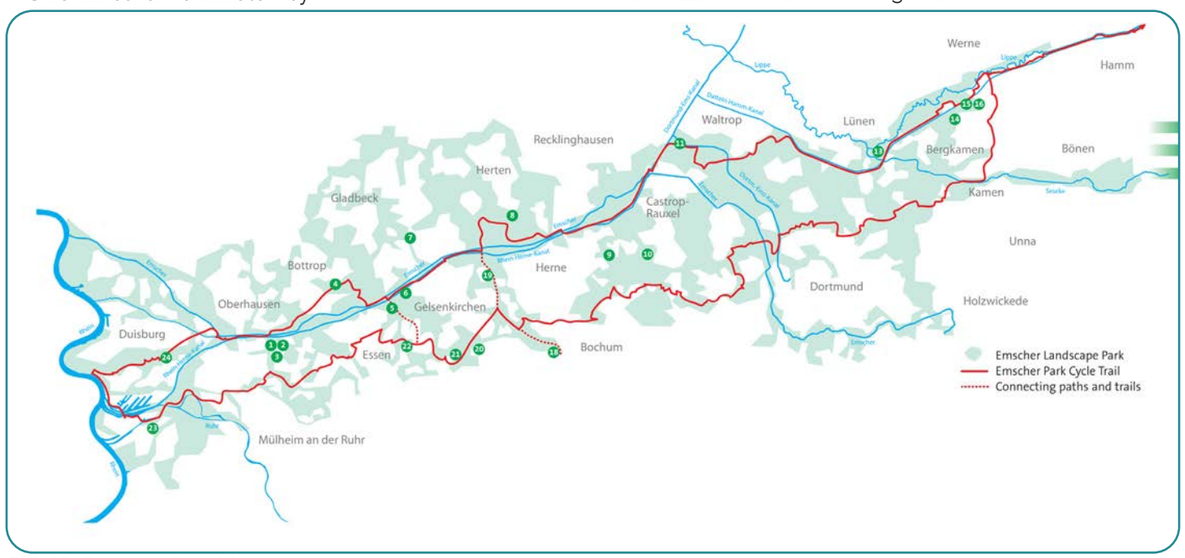


FIG.92 Emscher Park Map

River Ijssel, The Netherlands

Background

The Netherlands is one of the most densely populated countries in the world and more than half of it is below sea level. Flood protection is therefore a very high priority for the Dutch Ministry of Infrastructure and the Environment within the compass of water management.

The cadence of Dutch history has been punctuated by sea floods and the response to these. For the most part the danger stemmed from the sea. In 9993 and 1995, however, flooding hit the Netherlands from behind its defences. The Dutch rivers swelled to unprecedented levels, with catastrophic results. In 1995 large tracts of farmland were inundated and 250,000 people were evacuated. As a consequence, the Dutch government implemented anti-flooding measures in the region of the rivers. The 'Room for the River' approach was born

Natural Floodplain Restored

Room for the River restores the river's natural floodplain in places where it is least harmful in order to protect those areas that need to be defended. By means of a series of more than 30 measures, the floodplain has been lowered and broadened with new river diversions and temporary water storage areas. The marshy riverine landscapes once again serve as natural 'water storage' sponges safeguarding biodiversity as well as aesthetic and recreational values.

Local and Global

Provinces, municipalities, regional water authorities and Rijkswaterstaat are cooperating on the implementation of the Room for the Rivers Programme. Furthermore, within the compass of the Room for the River programme there is close collaboration at international level on flood protection.

Keeping One Step Ahead of Disasters

The Afsluitdijk, the Delta Works, Room for the River – all of these flood defence projects have been reactive in nature, responding to specific threats. In the opinion of Dutch government this needs to change. The Netherlands would like to be one step ahead of disasters, implementing measures in a timely fashion. This is being effectuated by means of the Delta Programme, which sees the country preparing itself for climate change in the lead up to the year 2100.

Deepening Summer Bed:

The riverbed is deepened by excavating the surface layer of the riverbed. The deepened riverbed provides more room for the river.

Water Storage:

The Volkerak-Zoommeer lake provides for temporary water storage when exceptional conditions result in the combination of a closed storm surge barrier and high river discharges to the sea.

Dyke relocation:

Relocating a dyke land inwards increases the width of the floodplains and provides more room for the river.

Strengthening Dykes:

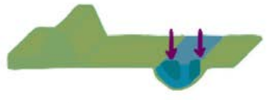
Dykes are strengthened in areas in which creating more room for the river is not an option.

High-Water Channel:

A high-water channel is a dyked area that branches off from the main river to discharge some of the water via a separate route.

Lowering of Floodplains:

Lowering (excavating) an area of the floodplain increases the room for the river during high water levels.



Lowering Groynes:

Groynes stabilise the location of the river and ensure that the river remains at the correct depth. However, at high water levels groynes can form an obstruction to the flow of water in the river. Lowering the groynes increases the flow rate of the water in the river.

Depoldering:

The dyke on the river side of a polder is relocated land inwards and water can flow into the polder at high water levels.

Removing Obstacles:

Removing or modifying obstacles in the riverbed where possible, or modifying them, increases the flow rate of the water in the river.

FIG.93 Flood Mitigation Measures

XiXi National Wetland Park

Background

Located in the west of Hangzhou, and 5km away from the West Lake, Xixi National Wetland Park is a farmland and wetland in China that covers 7,088,86 square metres. Here you can find many ancient buildings and garden relics from the Ming and Qing Dynasties. The total area of the wetland is about 11.5 square kilometres. 70% of the wetland is a water area, including a river harbour, pool, lake and moor. Six rivers flow through the park, interspersed with many branching streams and fishponds in the confluence. All of these contribute to the unique landscape of Xixi wetland.

Usually, tourist groups only visit the central part, as souvenir shops and restaurants are central in this part, leaving the eastern and western parts as silent places. The eastern part is a natural scenic spot, while the western part is comparatively an artificial spot.

The formation of Xixi wetland can be dated back to the Liangzhu culture, four or five thousand years ago. At this time, the land of Xixi was waterlogged into a big lake by the flood from Tianmu Mountain during spring and summer; when the flood receded, the wetland was formed

Transportation in XiXi Wetland

You have three choices: walk along the paths, take a motorboat on the outer river way, or take a gondola on the inner river way.

Character of XiXi Wetland Park

Water - the soul of Xixi. The unique wetland scene is formed by pools, rivers and lakes. Sic rivers are crossing over and countless pools are dotted here and there which can be described as “a Chinese melody played by rivers”.

Ecology – the theme of Xixi. Xixi wetland set three ecological protection areas. An ecological sightseeing garden is open for the public. Xixi has another mane called “the heaven of birds”. Many pavilions in this park are provided for visitors to appreciate the splendid scene of thousands of birds flying.

Civilization – the spirit of Xixi. Xixi is a fairyland since it existed in the ancient time. This is a Shangri-La to clean one’s heart. Many scholars left their works in Xixi. It is said that the stage near the hundred-year-old Zhang tree in Shentankou had welcomed the first show of Yue opera.

Folk customs – the essence of Xixi. The Dragon Boat Match held annually is a historical festival with unique celebration. The stories about silk and embroideries represent the busy scene of the native residences. From these folk customs, one can totally experience the real Watertown flavours.

FIG.94 XiXi National Wetland Park

Emerald Necklace, Boston

Background

The historic Emerald Necklace park system in Boston was designed by the legendary Frederick Law Olmsted through almost twenty years of work. In this urban park system, Olmsted created special retreats, places for both active and passive recreation, and green spaces offering relief and refreshment from the pressures and tensions of everyday life.

The Emerald Necklace consists of a chain of parks linked by parkways and waterways. This linear system of parks, once a polluted and marshy area, now offers opportunities for recreation in a wooded environment, ecologically important urban wilds that provide nesting places for migratory birds, and improved air quality of the city. It stretches from Back Bay to Dorchester connecting people and nature.

Olmsted's greatest legacy with the Emerald Necklace was his belief and achievement that parks can serve as meeting grounds for people of different backgrounds and economic means.

Size: 450 ha.

Key Features

- Parkways and waterways network;
- Recovered polluted marshland;
- Ecological urban hub for migratory birds; and
- Improves air quality of the city.

FIG.95 Emerald Necklace Birdview

FIG.97 Emerald Necklace View

FIG.96 Emerald Necklace Map

Green and Blue Ways, Vancouver

Background

Year after year, the City of Vancouver sits in the top ranks of the Liveable City Index. One of the main reasons for this is the long-term commitment that has been made to the creation of a green environment for its population. In early days of city planning, large swathes of land in the city centre, and at the university grounds, were put aside for parkland. Furthermore, access along the waterfront was dedicated as public space.

The city has benefitted widely from these early planning decisions, and it continues to invest in its green and blue infrastructure, as it recognises the incredible value it has brought to the success of the city. To carry on this legacy, Vancouver has a department dedicated to Greenways and Blueways, and every year continues to develop more green and blue assets for citizens and visitors to enjoy. This department mainly focusses on the planning, design and implementation of city-wide pedestrian and cycle corridors; these knit Vancouver together, allow continuous access along all waterfronts, and connect regional parks, including Stanley Park (a 405 ha public park that borders the downtown centre), and Pacific Spirit Regional Park (a 874 ha park located at the city's western point).

Size: 405 ha Stanley Park + 874 ha Pacific Spirit Regional Park

Key Features

· Pedestrian and cycling network

· A city-wide system of 14 interconnected greenways and cycle routes that knit Vancouver together

· Continuous public access along the waterfront

· Regional parks seamlessly connected

· Huge areas of parkland left forested for habitat value

· Stanley Park draws vast numbers of visitors/ tourists

FIG.98 Green and Blue Ways Vancouver Promenade

FIG.99 Green and Blue Ways Vancouver Cycling

FIG.100 Green and Blue Ways Vancouver Map

6 References and Sources

Figure List

SECTION	FIGURE NUMBER		IMAGE CREDIT	REFERENCE/SOURCE
2. Summary of Baseline by Theme				
2.1 Climate Change	FIG.1 South Essex Mean Temperature and Precipitation 2019		URBAN	https://www.ncdc.noaa.gov/
	FIG.2 Possible Climate Change Effects in South Essex		URBAN	-
		Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
2.2 Water Management	FIG.3 Tewkes Creek		URBAN	-
	FIG.4 Thames Marshes		URBAN	-
	FIG.5 Waterbodies		URBAN	-
		Main rivers	-	GIS Data Source: OS Open Data
		Other Waterbodies	-	GIS Data Source: OS Open Data
		Marshes	-	GIS Data Source: hlc zones (https://archaeologydataservice.ac.uk/archives/view/essex_hlc_2013/)
		Indicative Marshland Areas	-	Data Source: Greater Thames Marshes, Association of South Essex Local Authorities (ASELA)
		Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
	FIG.6 North Sea Surge in Thames Estuary		URBAN	Thames Estuary 2100 Plan, Environment Agency, 2012
	FIG.7 Flood Risk		URBAN	-
		Flood Risk	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
		Flood Management	-	Thames Estuary 2100 Plan 2012
		Essex & South Suffolk Shoreline Management Plan	-	"Essex and South Suffolk Shoreline Management Plan 2 "
		Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
2.3 Landscape Identity	FIG.8 Regional Character Areas		URBAN	-
		Regional Character Areas	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
		Basemap	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	FIG.9 South Essex and Thurrock Landscape Character Areas		URBAN	GIS Data Source: Association of South Essex Local Authorities (ASELA)

SECTION	FIGURE NUMBER	IMAGE CREDIT	REFERENCE/SOURCE
	Landscape Character Areas	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
	FIG.10 River Crouch View	URBAN	-
	FIG.11 Hadleigh Castle Vista	URBAN	-
	FIG.12 Views and Vistas	URBAN	-
	Waterfront Views, Vistas	-	URBAN proposal + Thames Gateway South Essex Green Grid Strategy 2005
	Existing Strategic Landmarks	-	Thames Gateway South Essex Green Grid Strategy 2005
	Strategic Destinations	-	Thames Gateway South Essex Green Grid Strategy 2005
	Topography	-	GIS Data Source: OS Open Data
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
	FIG.13 Coal House Fort: Schedule Monument	https://www.thurrock.gov.uk/coalhouse-fort-park/overview	-
	FIG.14 Red Sands Sea Fort, Thames Estuary, North Sea	https://www.discoveringbritain.org/activities/east-of-england/aerial-2/britain-from-the-air-redsands-sea-fort.html	-
	FIG.15 Heritage Landscapes	URBAN	-
	Conservation Areas, Listed Buildings, Scheduled Monuments,Historic Parks & Gardens,Ancient Woodland	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Heritage Landscape Character	-	MAGIC Maps - https://magic.defra.gov.uk/MagicMap.aspx
	Castles + Forts	-	English Heritage
	HLC Zones	-	GIS Data Source: https://archaeologydataservice.ac.uk/archives/view/essex_hlc_2013/
	WWII Fortresses	-	Atlasobscura
	WWII Defencing Lines	-	https://www.wattylercountrypark.org.uk/wwii-trail
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
2.4 Natural Resources	FIG.16 Agricultural Land at Sutton Hall, Rochford	URBAN	-
	FIG.17 Wind Farm	UNEP DTU Partnership	-
	FIG.18 Productive Landscapes	URBAN	-
	Industrial Areas	-	MAGIC Maps - https://magic.defra.gov.uk/MagicMap.aspx
	Agriculture (Grade 1-5, non-Agricultural Land)	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Minerals (Brickearth + Sand Gravel)	-	GIS Data Source: OS Open Data
	Waste	-	GIS Data Source + Other Information (comments) from ASELA
	Renewal Energies	-	UK Renewable Energy Map, MYGRID GB, https://www.mygridgb.co.uk/map/
	Industrial Water Activities	-	MAGIC MAPS (Data from: Cefas, information 2011+2014)
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)

SECTION	FIGURE NUMBER	IMAGE CREDIT	REFERENCE/SOURCE
2.5 Connectivity	FIG.19 Footpath along top of sea defense, Wallasea Island	URBAN	-
	FIG.20 Active Travel, Southend-on-sea	URBAN	-
	FIG.21 Active Travel Map	URBAN	-
	Public Rights of Ways (PRoWs)	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
2.6 Conservation	FIG.22 Skylark	https://www.claus-futter.com/Was-uns-bewegt/Vogel-des-Jahres-2019/	-
	FIG.23 Stag Beetle	https://www.pennlive.com/wildaboutpa/2018/06/15_common_bugs_in_your_backyar.html	-
	FIG.24 Water Vole	SAMUEL BAYLIS /The Mammal Society	-
	FIG.25 Oxlip	Marjatta Caján - Dreamstime.com	-
	FIG.26 Priority Habitats and Targeted Species found in South Essex	URBAN	-
	FIG.27 Two Tree Island: SSSI and LoWs	URBAN	-
	FIG.28 Crouch River: SPA, SSSI, SAC, RAMSAR, LoWS and MCZ	URBAN	-
2.7 Health and Wellbeing	FIG.30 Children's Play Area at Hannakins Farm Park, Basildon	URBAN	-
	FIG.31 Warley Park, Brentwood	URBAN	-
	FIG.32 Community Allotment, Southend-on-sea	URBAN	-
	FIG.33 Belton Hills, Southend-on-sea	URBAN	-
	FIG.34 Open Space Typology	URBAN	-
	Green Open Space Typologies	-	GIS Data Source: OS Open Data
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
	FIG.35 Thorney Bay Beach, Castle Point	URBAN	-
	FIG.36 Wackering Boatyard, Rochford	URBAN	-
	FIG.37 Recreational Activities	URBAN	-
	Ports	-	Google Map + MARINE TRAFFIC: https://www.marinetraffic.com/en/ais/home/centerx:0.4/centery:51.5/zoom:11
	River Routes	-	https://www.marinetraffic.com(Marine Live Map 200203_14:00)
	Community Forests	-	The Thames Chase Plan 2014
	Indicative Parkland Projects	-	Thames Gateway Parklands by Farrells, 2010 + GIS Data Source: OS Open Data
	Beaches / Swimming	-	Google Map + MAGIC MAPS + https://www.thebeachguide.co.uk/south-east-england/essex/swimming
	Marina / Yatch Club / Sailing Club	-	Google Map
	RSPB sites	-	https://www.rspb.org.uk/

SECTION	FIGURE NUMBER	IMAGE CREDIT	REFERENCE/SOURCE
	Essex Wildlife Trust Sites	-	https://www.wildlifetrusts.org/
	Woodland Trust Sites	-	https://www.woodlandtrust.org.uk/
	National Trust sites	-	https://www.nationaltrust.org.uk/
	Explore Essex Sites	-	https://www.explore-essex.com/
	Vineyards	-	The Great British Vineyards Guide, https://www.gbvg.uk/
	Golf Courts	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Kite Flying	-	Site: Essex Kite Park
	Kite Surfing	-	The Beach Guide https://www.thebeachguide.co.uk/south-east-england/essex/kitesurfing
	Airfields and Airports	-	Airfields of Britain Conservation Trust: http://www.abct.org.uk/airfields/airfield-finder/ AND UK Airfields: http://www.ukairfields.org.uk/essex.html
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
	FIG.38 Queen Elizabeth II Field, Basildon	URBAN	-
	FIG.39 Hardy Park, Thurrock	URBAN	-
	FIG.40 Access to Green Open Space	URBAN	-
	Green Open Spaces >2ha	-	GIS calculation based on ANGSt: 300m-2ha standard using all the Open Space Typologies
	300m Walking distance	-	Results from URBAN Analysis
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
	FIG.41 Belton Hills, Southend-on-sea	URBAN	-
	FIG.42 Church Hill, Thurrock	URBAN	-
	FIG. 43 Access for All	URBAN	-
	Deprived areas with good POS provision	-	Results from URBAN Analysis
	Deprived areas with poor POS provision	-	Results from URBAN Analysis
	Green Open Spaces, imd Ranking 2015	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
2.8 Growth and Development	FIG.44 Projected Flood Risk and Proposed Development	URBAN	-
	Development Plots	-	Local Plans
	Present Flood Risk	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Flood Management	-	Thames Estuary 2100 Plan 2012
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
2.9 Sustainability	FIG.45 Twilight View of Canvey Island	URBAN	-
3. Stakeholder's Workshop	FIG.46 Questionnaires Are Adopted to Gather Feedbacks	URBAN	-
	FIG.47 URBAN Presenting GBI Maps	URBAN	-
	FIG.48 Group Discussion in the Workshop	URBAN	-
	FIG.49 Ideas Exchanging Around Tables	URBAN	-
	FIG.50 Printed Maps for Clearer Presenting	URBAN	-

SECTION	FIGURE NUMBER	IMAGE CREDIT	REFERENCE/SOURCE
	FIG.51 Iconic Opportunity Wheel Printed on Postcards	URBAN	-
4. Local Open Spaces			
4.1 Local Open Space Typologies	FIG.52 Green Open Space Typology	URBAN	-
	Green Open Spaces Typologies	-	GIS Data Source: OS Open Data
	Watercourses	-	GIS Data Source: OS Open Data
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
4.3 Local Open Space Gap Analysis	FIG.53 Green Open Space Gap Analysis [...]	URBAN	-
	Country Parks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	1.2km & 2.4km Driving Distance	-	Results from URBAN Analysis
	Public Open Space	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
4.4 Basildon GBI	FIG.54 Key POS Index: Basildon	URBAN	Urban research based on GIS data from ASELA + OS Open Data
	FIG.55 Existing Green Open Space Gap Analysis: Basildon	URBAN	-
	Watercourses	-	GIS Data Source: OS Open Data
	Green Open Spaces, imd Ranking 2015	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Green Open Spaces >2ha	-	GIS calculation based on ANGSt: 300m-2ha standard using all the Open Space Typologies
	300m Walking Distance, Urban Areas with Poor Access to Green Open Spaces	-	Results from URBAN Analysis
	IMD Ranking 2015	-	Association of South Essex Local Authorities (ASELA)
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
	FIG.56 Existing Water Management, with Proposed Development Sites: Basildon	URBAN	-
	Development Plots	-	Local Plans
	Flood Risk	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Flood Management	-	Thames Estuary 2100 Plan 2012
	Essex & South Suffolk Shoreline Management Plan	-	"Essex and South Suffolk Shoreline Management Plan 2 "
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
	FIG.57 Existing Habitat and Nature Sites, with PRoWs and Active Travel Routes: Basildon	URBAN	-
	PRoWs, Bridleways	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Protected Areas - SAC, SPA, RAMSAR, SSSI, LoWs, LNRs, MCZ	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Protected Areas - RSPB	-	https://www.rspb.org.uk/
	Protected Areas - Essex Wildlife Trust Sites	-	https://www.wildlifetrusts.org/
	Protected Areas - National Trust Sites	-	https://www.nationaltrust.org.uk/
	Protected Areas - Woodland Trust Sites	-	https://www.woodlandtrust.org.uk/

SECTION	FIGURE NUMBER	IMAGE CREDIT	REFERENCE/SOURCE
	Protected Areas - Explore Essex Sites	-	https://www.explore-essex.com/
	Protected Areas - Country Parks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	2100 Flood Risk Worst Case Scenario	-	https://coastal.climatecentral.org/map/
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
	FIG.58 Proposed GBI Layout: Basildon	URBAN	-
	Development Sites	-	Local Plans
	Proposed Parklands	-	URBAN proposal
	Flood Zone 2&3, Existing Green Open Spaces, Agriculture land	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Roadways- Urban Green Roadways	-	URBAN proposal
	Railways- Urban Green Railways	-	URBAN proposal
	Primary & Secondary Green Crossings		Thames Gateway South Essex Green Grid Strategy 2005
	Blueways- Blueways	-	GIS Data Source: OS Open Data
	Greenways (existing/proposed)	-	URBAN proposal + AllTrails Map https://www.alltrails.com/
	Strategic Parks (proposed)	-	URBAN proposal
	Strategic Parks - Country Parks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Key Destinations - RSPB	-	https://www.rspb.org.uk/
	Key Destinations - Essex Wildlife Trust Sites	-	https://www.wildlifetrusts.org/
	Key Destinations - Nature Reserves	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Activities - Golf Courses, Hot Air Balloon Sites	-	GIS Data Source: Association of South Essex Local Authorities (ASELA) + Google Map
	Activities - Kite flying	-	Essex Kite Park
	Key Landmarks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	View Points	-	URBAN research + Information from ASELA
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
4.5 Brentwood GBI	FIG.59 Key POS Index: Brentwood	URBAN	Urban research based on GIS data from ASELA + OS Open Data
	FIG.60 Existing Green Open Space Gap Analysis: Brentwood	URBAN	(Layer Sources please refer to FIG.55)
	FIG.61 Existing Water Management and Proposed Development Sites: Brentwood	URBAN	(Layer Sources please refer to FIG.56)
	FIG. 62 Existing Habitat and Nature Sites, with PRoWs: Brentwood	URBAN	(Layer Sources please refer to FIG.57)
	FIG.63 Proposed GBI Layout: Brentwood	URBAN	-
	Development Sites	-	Local Plans
	Brentwood GI - Opportunities for Children's Play Area, Existing Space to Improve Access and Facilities, Opportunities for Semi-natural and Amenity, Allotments, Park + Ride	-	Brentwood Green Infrastructure Strategy, 2015
	Proposed Parklands	-	URBAN proposal
	Flood Zone 2&3, Existing Green Open Spaces, Agriculture land	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Roadways- Urban Green Roadways	-	URBAN proposal
	Railways- Urban Green Railways	-	URBAN proposal

SECTION	FIGURE NUMBER	IMAGE CREDIT	REFERENCE/SOURCE
	Primary & Secondary Green Crossings		Thames Gateway South Essex Green Grid Strategy 2005
	Blueways- Blueways	-	GIS Data Source: OS Open Data
	Blueways- Ferry Crossings	-	URBAN research + proposal
	Greenways (existing/proposed)	-	URBAN proposal + AllTrails Map https://www.alltrails.com/
	Strategic Parks - Country Parks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Key Destinations - Essex Wildlife Trust Sites	-	https://www.wildlifetrusts.org/
	Key Destinations - Explore Essex Sites	-	https://www.explore-essex.com/
	Key Destinations - Nature Reserves	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Activities - Golf Courses, Hot Air Balloon Sites	-	GIS Data Source: Association of South Essex Local Authorities (ASELA) + Google Map
	Key Landmarks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	View Points	-	URBAN research + Information from ASELA
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
4.6 Castle Point GBI	FIG.64 Key POS Index: Castle Point	URBAN	Urban research based on GIS data from ASELA + OS Open Data
	FIG. 65 Existing Green Open Space Gap Analysis: Castle Point	URBAN	(Layer Sources please refer to FIG.55)
	FIG.66 Existing Water Management and Proposed Development Sites: Castle Point	URBAN	(Layer Sources please refer to FIG.56)
	FIG. 67 Existing Habitat and Nature Sites, with PRoWs: Castle Point	URBAN	(Layer Sources please refer to FIG.57)
	FIG.68 Proposed GBI Layout: Castle Point	URBAN	-
	Development Sites	-	Local Plans
	Proposed Parklands	-	URBAN proposal
	Flood Zone 2&3, Existing Green Open Spaces, Agriculture land	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Roadways- Urban Green Roadways	-	URBAN proposal
	Railways- Urban Green Railways	-	URBAN proposal
	Primary & Secondary Green Crossings		Thames Gateway South Essex Green Grid Strategy 2005
	Blueways- Blueways	-	GIS Data Source: OS Open Data
	Blueways- Ferry Crossings	-	URBAN research + proposal
	Greenways (existing/proposed)	-	URBAN proposal + AllTrails Map https://www.alltrails.com/
	Strategic Parks (proposed)	-	URBAN proposal + Thames Gateway South Essex Green Grid Strategy 2005
	Strategic Parks - Country Parks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Key Destinations - RSPB	-	https://www.rspb.org.uk/
	Key Destinations - Essex Wildlife Trust Sites	-	https://www.wildlifetrusts.org/
	Key Destinations - Explore Essex Sites	-	https://www.explore-essex.com/
	Key Destinations - Nature Reserves	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Activities - Marinas / Yacht Clubs / Sailing Clubs/River Crossing, Golf Courses	-	GIS Data Source: Association of South Essex Local Authorities (ASELA) + Google Map
	Activities - Beach / Swimming	-	Google Map + MAGIC MAPS + https://www.thebeachguide.co.uk/south-east-england/essex/swimming

SECTION	FIGURE NUMBER	IMAGE CREDIT	REFERENCE/SOURCE
	Activities - Ferries	-	URBAN research + proposal
	Activities - Ports	-	Google Map + MARINE TRAFFIC: https://www.marinetraffic.com/en/ais/home/centerx:0.4/centery:51.5/zoom:11
	Activities - Kite flying	-	Essex Kite Park
	Key Landmarks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	View Points	-	URBAN research + Information from ASELA
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
4.7 Rochford GBI	FIG.69 Key POS Index: Rochford	URBAN	Urban research based on GIS data from ASELA + OS Open Data
	FIG.70 Existing Green Open Space Gap Analysis: Rochford	URBAN	(Layer Sources please refer to FIG.55)
	FIG.71 Existing Water Management and Proposed Development Sites: Rochford	URBAN	(Layer Sources please refer to FIG.56)
	FIG.72 Existing Habitat and Nature Sites, with PRoWs: Rochford	URBAN	(Layer Sources please refer to FIG.57)
	FIG.73 Proposed GBI Layout: Rochford	URBAN	-
	Development Sites	-	Local Plans
	Proposed Parklands	-	URBAN proposal
	Flood Zone 2&3, Existing Green Open Spaces, Agriculture land	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Roadways- Urban Green Roadways	-	URBAN proposal
	Railways- Urban Green Railways	-	URBAN proposal
	Primary & Secondary Green Crossings		Thames Gateway South Essex Green Grid Strategy 2005
	Blueways- Blueways	-	GIS Data Source: OS Open Data
	Blueways- Ferry Crossings	-	URBAN research + proposal
	Greenways (existing/proposed)	-	URBAN proposal + AllTrails Map https://www.alltrails.com/
	Strategic Parks (proposed)	-	URBAN proposal + Thames Gateway South Essex Green Grid Strategy 2005
	Strategic Parks - Country Parks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Key Destinations - RSPB	-	https://www.rspb.org.uk/
	Key Destinations - Essex Wildlife Trust Sites	-	https://www.wildlifetrusts.org/
	Key Destinations National Trust Sites	-	https://www.nationaltrust.org.uk/
	Key Destinations - Nature Reserves	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Activities - Marinas / Yacht Clubs / Sailing Clubs/River Crossing, Golf Courses	-	GIS Data Source: Association of South Essex Local Authorities (ASELA) + Google Map
	Activities - Ferries	-	URBAN research + proposal
	Activities - Airfields & Airports	-	Airfields of Britain Conservation Trust: http://www.abct.org.uk/airfields/airfield-finder/ AND UK Airfields: http://www.ukairfields.org.uk/essex.html
	Activities - Kite flying	-	Essex Kite Park
	Key Landmarks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	View Points	-	URBAN research + Information from ASELA
	Indicative Dark Sky Discovery Site	-	URBAN proposal

SECTION	FIGURE NUMBER	IMAGE CREDIT	REFERENCE/SOURCE
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
4.8 Southend-on-Sea GBI	FIG.74 Key POS Index: Southend-on-Sea	URBAN	Urban research based on GIS data from ASELA + OS Open Data
	FIG.75 Existing Green Open Space Gap Analysis: Southend-on-Sea	URBAN	(Layer Sources please refer to FIG.55)
	FIG.76 Existing Water Management and Proposed Development Sites: Southend-on-Sea	URBAN	(Layer Sources please refer to FIG.56)
	FIG.77 Existing Habitat and Nature Sites, with PRoWs: Southend-on-Sea	URBAN	(Layer Sources please refer to FIG.57)
	FIG.78 Proposed GBI Layout: South-on-Sea	URBAN	-
	Development Sites	-	Local Plans
	Proposed Parklands	-	URBAN proposal
	Flood Zone 2&3, Existing Green Open Spaces, Agriculture land	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Roadways- Urban Green Roadways	-	URBAN proposal
	Railways- Urban Green Railways	-	URBAN proposal
	Primary & Secondary Green Crossings		Thames Gateway South Essex Green Grid Strategy 2005
	Blueways- Blueways	-	GIS Data Source: OS Open Data
	Blueways- Ferry Crossings	-	URBAN research + proposal
	Greenways (existing/proposed)	-	URBAN proposal + AllTrails Map https://www.alltrails.com/
	Strategic Parks (proposed)	-	URBAN proposal + Thames Gateway South Essex Green Grid Strategy 2005
	Strategic Parks - Existing Parks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Key Destinations - RSPB	-	https://www.rspb.org.uk/
	Key Destinations - Essex Wildlife Trust Sites	-	https://www.wildlifetrusts.org/
	Key Destinations National Trust Sites	-	https://www.nationaltrust.org.uk/
	Key Destinations - Explore Essex Sites	-	https://www.explore-essex.com/
	Key Destinations - Woodland Trust Sites	-	https://www.woodlandtrust.org.uk/
	Key Destinations - Nature Reserves	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Activities - Marinas / Yacht Clubs / Sailing Clubs/River Crossing, Golf Courses, Hot Air Balloon Sites	-	GIS Data Source: Association of South Essex Local Authorities (ASELA) + Google Map
	Activities - Beach / Swimming	-	Google Map + MAGIC MAPS + https://www.thebeachguide.co.uk/south-east-england/essex/swimming
	Activities - Kite Surfing	-	The Beach Guide https://www.thebeachguide.co.uk/south-east-england/essex/kitesurfing
	Activities - Ferries	-	URBAN research + proposal
	Activities - Ports	-	Google Map + MARINE TRAFFIC: https://www.marinetraffic.com/en/ais/home/centerx:0.4/centery:51.5/zoom:11
	Activities - Airfields & Airports	-	Airfields of Britain Conservation Trust: http://www.abct.org.uk/airfields/airfield-finder/ AND UK Airfields: http://www.ukairfields.org.uk/essex.html
	Activities - Kite flying	-	Essex Kite Park
	Key Landmarks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)

SECTION	FIGURE NUMBER	IMAGE CREDIT	REFERENCE/SOURCE
	View Points	-	URBAN research + Information from ASELA
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
4.9 Thurrock GBI	FIG.79 Key POS Index: Thurrock	URBAN	Urban research based on GIS data from ASELA + OS Open Data
	FIG.80 Existing Green Open Space Gap Analysis: Thurrock	URBAN	(Layer Sources please refer to FIG.55)
	FIG.81 Existing Water Management and Proposed Development Sites: Thurrock	URBAN	(Layer Sources please refer to FIG.56)
	FIG.82 Existing Habitat and Nature Sites with PRoWs: Thurrock	URBAN	(Layer Sources please refer to FIG.57)
	FIG.83Proposed GBI Layout: Thurrock	URBAN	-
	Development Sites	-	Local Plans
	Proposed Parklands	-	URBAN proposal
	Flood Zone 2&3, Existing Green Open Spaces, Agriculture land	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Roadways- Urban Green Roadways	-	URBAN proposal
	Railways- Urban Green Railways	-	URBAN proposal
	Primary & Secondary Green Crossings		Thames Gateway South Essex Green Grid Strategy 2005
	Blueways- Blueways	-	GIS Data Source: OS Open Data
	Blueways- Ferry Crossings	-	URBAN research + proposal
	Greenways (existing/proposed)	-	URBAN proposal + AllTrails Map https://www.alltrails.com/
	Strategic Parks (proposed)	-	URBAN proposal + Thurrock GBI Strategy, 2019
	Strategic Parks - Country Parks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Key Destinations - RSPB	-	https://www.rspb.org.uk/
	Key Destinations - Essex Wildlife Trust Sites	-	https://www.wildlifetrusts.org/
	Key Destinations National Trust Sites	-	https://www.nationaltrust.org.uk/
	Key Destinations - Explore Essex Sites	-	https://www.explore-essex.com/
	Key Destinations - Woodland Trust Sites	-	https://www.woodlandtrust.org.uk/
	Key Destinations - Nature Reserves	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	Activities - Marinas / Yacht Clubs / Sailing Clubs/River Crossing, Golf Courses, Hot Air Balloon Sites	-	GIS Data Source: Association of South Essex Local Authorities (ASELA) + Google Map
	Activities - Ports	-	Google Map + MARINE TRAFFIC: https://www.marinetraffic.com/en/ais/home/centerx:0.4/centery:51.5/zoom:11
	Activities - Kite flying	-	Essex Kite Park
	Key Landmarks	-	GIS Data Source: Association of South Essex Local Authorities (ASELA)
	View Points	-	URBAN research + Information from ASELA
	Basemap	-	GIS Data Source: OS Open Data + Association of South Essex Local Authorities (ASELA)
5. Case Studies	FIG.84 Marston Vale Community Forest	BlueskyUKTreeMap,https://www.geospatialworld.net/news/bluesky-uk-tree-map-assists-community-forest-rebuilding-environment/	-

SECTION	FIGURE NUMBER	IMAGE CREDIT	REFERENCE/SOURCE
	FIG.85 London National Park City	https://www.nationalgeographic.co.uk/environment-and-conservation/2019/07/london-becomes-worlds-first-national-park-city-what-does-mean)	-
	FIG.86 Loch Lomond & The Trossachs National Park	https://coolcamping.com/campsites/uk/scotland/loch-lomond-and-the-trossachs	-
	FIG.87 South Bay Challenge Birdeye Visual	2019 Multiplier/Bay Area Resilient by Design	-
	FIG.88 South Bay Challenge Waterway Visual	2019 Multiplier/Bay Area Resilient by Design	-
	FIG.89 South Bay Challenge Map	2019 Multiplier/Bay Area Resilient by Design	-
	FIG.90 Emscher Park Waterway	LATZ+PARTNER	-
	FIG.91 Emscher Park Climbing Wall	https://www.landschaftspark.de/freizeitangebote/uebersicht/	-
	FIG.92 Emscher Park Map	http://www.produkte24.com/cy/metropole-ruhr-7031/erlebnisfuehrer-emscher-	-
	FIG.93 Flood Mitigation Measures	Adapted by Jam Consult) (https://www.tandfonline.com/doi/abs/10.1080/15715124.2011.607824	-
	FIG.94 XiXi National Wetland Park	https://www.chinadiscovery.com/assets/images/travel-guide/hangzhou/xixi-national-wetland-park/	-
	FIG.95 Emerald Necklace Birdview	https://tclf.org/landscapes/emerald-necklace	-
	FIG.96 Emerald Necklace View	http://ttnotes.com/museum-of-science.html#gal_post_49152_museum-of-science-boston-5.jpg	-
	FIG.97 Emerald Necklace Map	Emerald Necklace Conservatory	-
	FIG.98 Green and Blue Ways Vancouver Promenade	LeonWang, Shutterstock	-

SECTION	FIGURE NUMBER	IMAGE CREDIT	REFERENCE/SOURCE
	FIG.99 Green and Blue Ways Vancouver Cycling	https://www.cbc.ca/news/canada/british-columbia/stanley-park-seawall-restoration-to-impact-bike-and-foot-traffic-through-summer-1.4616885	-
	FIG.100 Green and Blue Ways Vancouver Map	https://www.tripsavvy.com/vancouver-location-map-1482169	-

Table List

SECTION	TABLE NUMBER
1.1 Local and Regional Funding Schemes	TAB.1 Thames Estuary Growth Fund - Government Commitments
1.2 National Funding Schemes	TAB.2 Carbon Offset Scheme
4.2 Local Open Space Capacity Assessment	TAB.3 Basildon Local Open Space Capacity Assessment
	TAB.4 Brentwood Local Open Space Capacity Assessment
	TAB.5 Castle Point Local Open Space Capacity Assessment
	TAB.6 Rochford Local Open Space Capacity Assessment
	TAB.7 Southend-on-Sea Local Open Space Capacity Assessment
	TAB.8 Thurrock Local Open Space Capacity Assessment
4.3 Local Open Space Gap Analysis	TAB.9 Standards per 1000 population of the various typologies of Public Open Space [...]
4.4 Basildon GBI	TAB.10 Standards per 1000 population of the various typologies of Public Open Space in Basildon [...]
4.5 Brentwood GBI	TAB.11 Standards per 1000 population of the various typologies of Public Open Space in Brentwood [...]
4.6 Castle Point GBI	TAB.12 Standards per 1000 population of the various typologies of Public Open Space in Castle Point [...]
4.7 Rochford GBI	TAB.13 Standards per 1000 population of the various typologies of Public Open Space in Rochford [...]
4.8 Southend-on-Sea GBI	TAB.14 Standards per 1000 population of the various typologies of Public Open Space in Southend-on-Sea [...]
4.9 Thurrock GBI	TAB.15 Standards per 1000 population of the various typologies of Public Open Space in Thurrock [...]

Alexandra Steed URBAN

75 Cowcross Street
EC1M 6EL
London
England

T +0203 757 5432

M +07833 206398

info@alexandrasteedurban.com
www.alexandrasteedurban.com