

Green Essex

Executive Summary

A strategy that advocates for high quality green space and green infrastructure in Essex

2019

Introduction

The purpose of this strategy is to take a positive approach to enhance, protect and create an inclusive and integrated network of high-quality green infrastructure in Greater Essex. The aim is to guide and shape planning and other services through setting principles that can inform plans and strategies, that will enable a coherent approach and partner collaboration in the delivery of multi-functional natural assets, which will provide environmental, social and economic benefits for Greater Essex.

By integrating high quality, well-maintained green infrastructure as part of wider plans for residential growth, improving health and wellbeing, attracting businesses and increasing tourism, green Infrastructure will provide the following benefits through:

Facilitating the delivery of multiple objectives

Providing a multi-functional network of open spaces and ecological networks at all scales, from regional to neighbourhood scale.

Shaping the growth of sustainable communities- social and economic.

Forming an integral part of the planning system; and

Plan to meet the existing and future needs of our communities.

Chapter 2 Objectives of the Strategy

2.1 Vision

The following vision reflects the Essex Green Infrastructure Partnership's (Steering Group and Partners) position regarding the important future role of green infrastructure within Greater Essex:

We will protect and grow a high quality connected Green Infrastructure network that extends from our city and town centres to the countryside and coast and which; is designed for people and wildlife, whilst being self- sustaining.

The Green Infrastructure Strategy aims to deliver the vision through the seven objectives specified right:

The vision and objectives set out what this strategy is aiming to achieve, recognising that good infrastructure is not an end, but an enabler of better social, economic and environmental outcomes.

2.2 Green Infrastructure Objectives

Protect existing green infrastructure, especially the most valuable
Improve existing green infrastructure so it is better functioning
Create more high-quality green infrastructure, especially in areas of deficiency
Improve the connectivity of green infrastructure for people and wildlife
Increase use and inclusivity of green infrastructure across all social groups and abilities
Provide green infrastructure facilities to promote health and wellbeing
Secure funding for new and existing green infrastructure to ensure their sustainability

Chapter 3 What is Green Infrastructure?

3.1 Green Infrastructure Assets of Greater Essex

Green infrastructure is made up of natural and semi-natural assets and habitat types, of green and blue spaces, and of other environmental features that maintain and enhance ecosystem services. It provides multi-functional benefits integral to the health and wellbeing of our communities and to the ecology and economy of the county. Green infrastructure is often referred to as a network of these natural and semi-natural assets and spaces, which are joined together connecting urban and rural areas and are habitually strategically planned.

Green infrastructure for this strategy includes the following assets:

Parks and gardens
Natural and semi-natural open spaces
Ancient Woodlands
Reservoirs, lakes and ponds
Coastal features
Waterways (watercourses)
Greenways (Public Rights of Way, footpaths, cycleways and tracks, byways, bridleways)
Outdoor Sport Facilities (Sport pitches)
Amenity green space (provision for play facilities etc.)
Open spaces around premises (Educational premises open space and sport pitches)
Cemeteries and churchyard
Allotments, community gardens and city farms
Productive spaces (agricultural land and meadows.)
Public Realm/Civic spaces (urban greening – Urban and street trees, road verges, green walls, Sustainable Urban Drainage and Natural Flood Management)
Productive spaces (agricultural land and meadows.)
Green corridors (verges)

Key Elements of Essex's Green Infrastructure

This section outlines the green infrastructure and environmental character of Greater Essex, with further details set out in Appendix 3.

Landscape

Greater Essex has a rich and varied historic landscape of expansive plateaus, wooded hills and one of the longest coastlines in the country, much of which is of international significance for wildlife. Table 1 summarises the composition of the land area in Greater Essex.

Table 1: Summary of the total land area composition in Greater Essex

Total Area of Green Infrastructure

782 km²

21%

Total Area of Agricultural Land Outside Green Infrastructure

2,497 km²

68%

Remaining Land (e.g. Built-Up Areas)

397 km²

11%

Total Land Area in Greater Essex

3,676 km²

100%

Natural Environment

Greater Essex hosts a variety of important habitats, of which 13.4% of the total area (49,560 hectares) receive some level of protection through national and international designations. There are 1,908 designations.

Trees and Ancient Woodlands

The Forestry Commission's Inventory of Trees and Woodlands (2002) estimates the woodland cover of Greater Essex is 5.3% (19,455 hectares) of total land area, of which 3.5% (12,774 hectares) is defined as ancient woodlands over 2 hectares in size, of which 7,200 hectares is Ancient Semi Natural Woodlands (ASNW). 1.5 million trees are outside woodlands in rural areas (including street trees) and a total of 12,500 km of hedgerow in Essex.

Historic Environment

The historic environment has played an important role in shaping the landscape, wildlife and economy of the County developed through a history of human activity such as:

the pattern of fields,
hedges,
grazing marsh,
woodlands,
farm woods, and
tracks

The 'built' part of the historic environment is equally rich, with the character of towns, villages, hamlets, farms, roads and ports having been shaped by their historic buildings.

Green Spaces

There is a wide and varied amount of green space in Greater Essex (as shown in figure 1) that represents a network of green, blue and sometimes brown components that lie within and between towns and villages and can cross Local Authority areas.

Water

Essex has:

Five river catchments.

Three coastal streams with protection of SSSI's and Ramsar sites.

Estuaries with floodplains, alluvial marshland and large wetland areas.

Three reservoirs, which serve millions of households and also provide habitats for wetland wildlife, two of which are successfully managed by the Essex Wildlife Trust.

Agricultural reservoirs that have been developed all over the eastern part of the county and that have the added commercial use benefit of fishing lake provision.

Public Rights of Way

The Public Rights of Way network in Essex comprises approximately 6300km of footpaths (84%), bridleways (12%), restricted byways (0.01%) and byways (4%).

Chapter 4 Understanding Our Drivers

4.1 National

National Planning Policy Framework promotes the use of green infrastructure to delivery multiple functions and benefits, for example, adapting to climate change; to improve air quality and pollution; secure biodiversity and environmental net gains, to enable healthy lifestyles and the creation of inclusive and safe places.

Natural Environment White Paper, The Natural Choice: Securing the value of nature (2011) sets out a framework to protect and enhance the natural environment and advocates that green spaces should be factored into the development of all communities.

25 Year Environment Plan, 'A Green Future: Our 25 Year Plan to Improve the Environment' sets out a framework to maintain and improve the environment for the next generation.

Healthy Lives, Healthy People: sets out the Government's long-term vision for the future of public health in England and recognises the relationship between the environment and good public health to tackle health inequalities.

4.2 Local and Regional

Essex Growth Infrastructure Framework (GIF) estimated that new development will generate a demand for 1,585 hectares of green infrastructure, which will cost £251,860,000 including ongoing management. It identified a funding gap of £241,990,000.

ECC's Essex Organisation Strategy Strategic Priority states that we will aim to "Improve the quality of life for Essex residents, by continuing to improve our open

green space and making the most of the Essex countryside for the wider benefit of all”.

Essex Rights of Way Improvement Plan is a statutory document for improving the provision of access to the countryside through a Rights of Way network. Local Transport Plan (Policy 15 -Walking and Public Rights of Way, encourages a move towards sustainable travel and healthier lifestyles. Active Essex Strategy promotes physical activity across all age groups and abilities, including to get more people using open green spaces for exercise and health reasons.

Local Plans (including Minerals and Waste Plans) in Essex take a strategic approach to planning for the creation, protection, enhancement and management of biodiversity and Green Infrastructure networks. Each of the Local Authorities has taken a different approach to managing, protecting and enhancing their green infrastructure network through green infrastructure strategy, Infrastructure Delivery Plans, Open Spaces, Sport and Recreational strategy or Recreational Access Management Strategy (RAMS).

There are several other national and local plans and strategies that also have an influence on planning for green infrastructure. Figure 2 below illustrates the relationship between the Green Infrastructure Strategy and other plans and strategies in Essex not covered in this section.

Chapter 5 The Essex Context

Essex is a large and varied county where the majority is rural in character, covering approximately 3,670km². It also has significant urban settlements. It borders to the north the counties of Suffolk and Cambridgeshire, to the west the county of Hertfordshire and the Greater London area to the South-west.

People and Projections

1,820,900 people in 2017 for Greater Essex. The county's population is expected to increase to 2,133,100 by 2041.^a

Development Growth

179,657 homes needed across Greater Essex by 2036.^b

Walking and cycling infrastructure across Greater Essex varies with a good level of provision in the larger settlements but fewer formal facilities in the smaller towns and villages.

Economic Growth

79,000 additional jobs needed forecasted by the East of England Forecasting model.^b

Social and Health

Essex, two-thirds (66.3%) of adults aged 16+ are either overweight or obese (2013-15).^c

Some of the most deprived one per cent of nearly 33,000 areas in England, are within Essex: six in Tendring and two in Basildon.

In Essex in 2014, 57.9% of people had the recommended amount of physical activity (2.5hours a week).^c

Environment

In 2017, 18 % of population in Essex has accessible woodlands, while 36% inaccessible woodlands at least 2 ha within 500 meters of where they live.^e

Data Source: a: From an ONS 2016-based subnational population projections; b: Greater Essex Growth Infrastructure Framework (2017); c: Joint Strategic Needs Assessment (2016) & Joint Health & Wellbeing Strategy for Essex; d: UK Climate Projections 2009; e: Space for people (2017).

Chapter 6 Why Invest in Green Infrastructure?

A major challenge for Essex is to maintain a healthy natural environment in line with the development and population growth in Essex and the creation of a green infrastructure network, while allowing for meaningful connections between people and nature – particularly in urban areas. A spatial analysis of the green infrastructure undertaken by UEA as part of the GIS green infrastructure data layer mapping found that there is a tendency for values of green infrastructure to be higher in the south of the county, suggesting that investment of Green Infrastructure could be focused in areas of lower green infrastructure value in the north.

6.1 Multi-functions and Benefits from our Green Infrastructure Assets

A comprehensive mapping of green infrastructure of Essex was carried out by UEA to improve our understanding of the types of green infrastructure, its distribution, what it can do (how it functions) and the benefits it provides. Using a GIS computer programme, a mapping methodology developed by the Business and Local Government Data Research Centre at the University and an adapted approach developed by the North West Green Infrastructure Unit in Liverpool (Butlin, 2011), they were able to categorise the green infrastructure assets in Essex utilising the UK Habitat Classification (2018) into a green infrastructure typology, such as Parks and gardens and Natural and Semi-natural open spaces.

Figure 3 shows a map of the total number of functions performed by each green infrastructure typology.

Environment Benefits

Maintains/Restores habitat

Improves watershed health/water quality

Improves air quality

Enhances biodiversity

Flood alleviation and water management mitigates storm water/flooding

Regulates climate i.e. reduce heat in urban areas

Sequesters carbon

Improves more sustainable modes of transport and transport links

Increasing environmental quality and aesthetics

Heritage preservation

Increasing habitat area

Increasing populations of some protected species

Increasing species movement;

Economic Benefits

- Attracts businesses and workers
- Generates revenue
- Provides access to local businesses
- Increases land and property values
- Lowers energy costs
- Lowers health care costs
- Promotes renewable energy
- Increases local food production & other products from land i.e. biofuel, timber, chip board and sources of raw materials such as lignin and cellulose.
- Increased tourism
- Attracts inward investment
- Promotes local economic regeneration
- Enables regeneration of previously developed land

Social Benefits

- Enhances the quality of the place
- Enables recreation and Leisure – Relaxation/ play benefits
- Improves public health
- Promotes equity and access
- Fosters stronger communities: Social interaction, inclusion and cohesion
- Connects people with nature
- Educates people about nature's role
- Climate Change mitigation and Adaptation – community resilience
- Increasing life expectancy and reducing health inequality
- Improving levels of physical activity and health
- Improving psychological health and mental well-being - Eco therapy
- Boosts educational abilities

Chapter 7 Delivery of the Strategy's Objectives

The following proposals in table 2 have been identified in response to the issues for each objective and are targeted at areas or activities where “need” is greatest or relatively simple and cost effective to deliver. These proposals form the basis for getting agreement and support to take forward actions, as they will require partner collaboration to successfully implement.

Broadly, these proposals can be categorised into the following key project themes:

- Marketing, branding and promotion (MBP).
- Re-designation of green infrastructure (Rd).
- Environment net gain and offsetting (ENG).
- Improve, repurpose and create new multi-functional green infrastructure (IRC).
- Natural flood management techniques (NFM).
- Connect people and wildlife to green infrastructure through active travel (CPW)
- Delivering environmental therapies and activities (ETA).

Objective: Protect existing green infrastructure, especially the most valuable

Proposals:

MBP - Highlight the most valuable green infrastructure in Essex in terms of their multi-functionality and benefits – through rebranding Essex as Green Essex with 1,908 designations.

Rd - Encourage and support the review of existing designations to ensure their currency and maintain the accuracy of site information.

Rd - Support the recognition and appropriate designation of new green infrastructure, e.g. Local Wildlife Site, Local Nature Reserve.

ENG - Embed an 'environmental net gain' principle for development, including housing and infrastructure.

IRC - Coordinate the protection of internationally designated green infrastructure through the Recreational disturbance Avoidance and Mitigation Strategy (RAMS).

Objective: Improve existing green infrastructure so it is better functioning

Proposals:

MBP - Create a green Essex network to develop, improve and promote Green Essex.

IRC - Support the development of new Visitor Centres and facilities

MBP - Better marketing & promotion of green infrastructure to increase use and income.

IRC - Public realm green infrastructure improved to reduce pollution and improve character and sense of place.

NFM - Create water gardens, green roofs and bio retention areas to absorb urban water.

NFM - Continue creating green spaces which also function as natural flood management and SuDs schemes.

IRC - Encourage better management of green infrastructure to benefit locally native species, focussing on recognised nature conservation priorities.

Objective: Create more high-quality green infrastructure, especially in areas of deficiency

Proposals:

CPW/MBP - Develop the coast path in Essex.

IRC - Increased access to the Outdoor Pursuits Centres.

IRC - Create green infrastructure in new developments such as Garden Communities.

IRC - Develop green infrastructure as part of Minerals and Waste restorations e.g. Pitsea Landfill.

CPW - Create town or village circular walks especially in areas of green infrastructure deficiency.

IRC - Strategically identify priority areas for the creation or improvement of green

infrastructure that could provide most benefit for locally native species of recognised nature conservation priority.

IRC/ENG - Use planning policy to secure multi-functional green spaces within and beyond development site boundaries through the application of biodiversity net gain, biodiversity off-setting and the creation of compensation habitat.

IRC - Where possible, use new green infrastructure provision to buffer or extend existing designated sites.

CPW - Create town or village circular walks especially in areas of green infrastructure deficiency

Objective: Connectivity improvements connecting green infrastructure, people and wildlife.

Proposals:

CPW/MBP - Develop the coast path in Essex.

CPW - Develop inter connecting paths between green infrastructure.

CPW - Restore and Promote Essex promoted paths.

1. The Forest Way
2. The St Peter's Way
3. The Essex Way
4. The Roach Valley Way
5. The Coast Path (once designated as National Trail)
6. The Stour Valley Path
7. The Thames Estuary Path,
8. The Flitch Way
9. The Saffron Way
10. Blackwater Rail Trail
11. John Ray Walk

Objective: Increase use and inclusivity of green infrastructure across all social groups and abilities

Proposals:

ETA - Explore environmental therapies and challenges aimed at developing young people.

MBP - Promote youth orientated activities in green spaces e.g. mountain biking, Go Ape, Geocaching, etc.

Objective: Provide green infrastructure facilities to promote health and wellbeing

Proposals:

ETA - Explore environmental therapies delivered through mental health services.

MBP - Develop and promote Healthcare and wellbeing through green infrastructure activities.

Objective: Secure funding for new and existing green infrastructure to ensure their sustainability.

Proposals:

IRC - Develop new facilities that will generate revenues.

IRC - Create a Green Essex Fund for endowments, fund raising bids, donations etc.

Chapter 8 Delivering the Green Infrastructure Themes

The proposals and actions for each of the seven key themes will help ensure tangible improvements to green infrastructure are made against the strategy's objectives.

8.1 Marketing, branding and promotion (MBP)

There is a need to develop a marketing strategy which maximises existing marketing resources to its full potential and deliver a coordinate approach and a recognisable pan Essex branding to successfully promote and raise awareness of our green infrastructure across Essex. Whilst taking into consideration the monitoring, management and mitigation of visitor impacts to our protected and designated sites.

8.2 Re-designation of Green Infrastructure

Regular review of Local Wildlife Sites within each Local Planning Authority area will ensure that newly created or enhanced green spaces that meet selection criteria as a result of their habitats or species populations can be recognised and protected within the planning system. Designation of green space as a Local Wildlife Site should be seen by developers as an aspiration, adding value to the communities that they establish.

In order to achieve this, the focus of green space design and creation should be on habitats that compliment those of biodiversity value in the surrounding landscape, focussed on recognised nature conservation priorities, including the Priority Habitats listed under section 41 of the Natural Environment and Rural Communities Act 2006.

8.3 Environment net gain off setting (ENG)

Further work is needed to develop the Essex Biodiversity Validation Checklist'1 , into an environmental net gain principle for Essex. By working with Place Services and partners to create the methodology of the environmental net gain principle in line with the Government's 25 Year Environment Plan proposals.

8.4 Improve, repurpose and create new multi-functional green infrastructure (IRC)

8.4.1 Coastal Green Infrastructure Protection (RAMS)

The Essex Coast Recreational disturbance and Avoidance Mitigation Strategy (RAMS) project aims to collect funds from the development of new homes in order to, adequately protect Essex coastal important lowland habitats and national and international designation sites from recreational harm. Developers within identified

areas of risk are expected to make on-site provision for recreation within the development site as well as contributing a sum determined by the number of new dwellings to off-site measures, such as rerouting or screening paths and signage.

8.4.2 Green Spaces Facilities Improvement and Creation

People are more likely to use green spaces and other green infrastructure, if they are well maintained. For example, the case study in figure 4 demonstrates the value of improving an under-used site.

8.4.3 Public Realm Green Infrastructure Improvements

Opportunities to increase access to green spaces, secure environmental net gain and to improve sustainable transport connections between green spaces should be pursued by reviewing the highways policies and maintenance plans along with developing and coordinating cycling and walking strategies, thereby aiding the reduction of air pollution.

By also exploring and implement for example a scheme similar to Paris in figure 5 as an Essex Green Permit scheme to actively engage people to adopt, green up and manage land within the public realm (excluding private owned land).

8.4.4 Create Green Infrastructure as Part of New Developments

Local planning policies will play an integral role in the delivery of quality green infrastructure through new development. Local Plans and policies can provide detail on the vision and standards for green infrastructure in terms of quantity and quality, the protection and improvement to existing, and the provision of new green infrastructure, to ensure it can be factored in from the beginning of all development proposals.

8.4.5 Minerals and Waste Green Infrastructure Restoration

The key to planning and managing green infrastructure in minerals and waste restoration is to consider the site in its context. This includes considering the features of the site and the networks of habitats, sustainable transport routes and water courses that surround it, which could be safeguarded or enhanced.

Figure 4: Case Study: Oakwood Pond, Harlow

Oakwood Pond and the surrounding wooded area in Harlow lie to the west of Princess Alexandra Hospital. The pond and surrounding area have a rich history, dating back as far as the 1100s as a stew pond for the Canons Brook monastery and later forming part of the grounds of Upper House in the 1700s. Unfortunately, over recent years, the area had been neglected, fallen into a state of disrepair and plagued with problems from unsociable behaviour. This coupled with the loss of the ponds spring water inlet led to sever silting, dropping water levels and loss of aquatic life. The woodland characterised by many mature trees and scrub, surrounding the pond had also become overgrown, with scrubs and weeds taking hold of the less trafficked areas. Many local people avoided it.

IMPACT OF IMPROVEMENTS

This project has revitalised a forgotten and dilapidated area of Harlow. It is now a much-improved and loved amenity for the local community. Providing flood alleviation, educational and recreational benefits to the local area and has enhanced the biodiversity of the site. The water quality has improved through the restoration of aquatic plants and reinstating the pond thereby creating a popular fishing facility for the local community. The pond and surrounding areas have become more inclusive by ensuring disabled access and providing a safe space for the local community to use to walk, sit and reflect, fish and observe wildlife. Therefore, creating an identity for the area and foster a sense of place.

HOW WAS THE GREEN SPACE IMPROVED?

The pond and the surrounding area were transformed by a combination of efforts by Essex County Council, Harlow District Council and local volunteers who have helped to unearth this beautiful area once again. The improvements to the ponds involved;

Clearing the silt and reinstating entirely lost areas of the pond for local flooding prevention for homes downhill from the site.

Reintroducing the water supply to the pond by reconnecting the spring water source. Introducing and creating a diverse range of water, vegetation- and wood-based habitats to add to the biodiversity and filter the incoming water supply.

Clearing scrub, brambles and excess trees which opened up the area.

Installation of a new accessible fishing platform, paths, boardwalk, benches and interpretation panels around the pond. Creation of disabled access points and circular routes.

All improved access for the local community to and through the site to the town centre and the hospital and the general environment for both wildlife and local people.

Figure 5: Case Study: “Vegetalisons Paris!” The Greening Permit of Paris

The aim is to create urban gardens, green roofs, mini orchards, keyhole gardens, living walls, and other green spaces adding up to a total of 100 hectares of new greenery by 2020.

By greening the area and making streets more attractive and biodiverse, the initiative builds community and sense of place. It gives people a role in public space, enhancing a sense of ownership and pride.

Paris has turned to its citizens with an invitation to green up their city to address air pollution and inadequate green space.

Locals are encouraged to be “gardeners of the Parisian public space”. Upon receiving a 3-year permit (that can be renewed), gardeners receive a starter pack of seeds and materials and can be creative, as long as they use sustainable methods, avoiding pesticides and promoting biodiversity in the city

Since 2015 achievements include:

1,227 projects realised

30 additional hectares of accessible green space

100 hectares of vegetation on walls and roofs, one third of which is dedicated to urban agriculture

20,000 new trees planted

Renovation of parks and gardens

Figure 6: Case Study: Thaxted, Uttlesford & Kingsmoor, Harlow

Felled trees and other woody debris were pinned into the river bank allowing water to flow freely when levels are normal. In times of flooding, the flow of water is slowed, reducing pressure on the dam by still allowing water through. Leaky dams also prevent flood water from washing away soil and silt from eroded river banks. An earth bund was created in a playing field directly upstream of the residential area in Kingsmoor to provide larger floodwater storage. Over time the leaky dams will improve local biodiversity by creating new and diverse habitats and restoring pond flora and fauna, such as newts. Kingsmoor scheme in October 2018 won 'Small Project of the Year' at the British Construction Industry Awards.

Place Services worked in partnership with Essex County Council's Floods Services, Harlow District Council, the Environment Agency and Thames Water to devise and construct the leaky dams and pond de-silting works within local woods. The dams were constructed by hand from logs sourced directly from the wood (or for Thaxted, felled trees were extracted from Garnetts Wood, Dunmow) as part of its ongoing management plan. The felled timber and woody debris were sustainably harvested as part of Place Services' Essex Woodland Project. These were moved across the woodlands and into position using heavy horses (known as Suffolk Punch) traditional to logging to minimise the impact on the trees and local wildlife and negate the need for heavy machinery.

Properties in both these areas were prone to surface water flooding and roads were often cut off. Through investigation of the areas a proposed scheme to reduce local flood risk was put forward. However, the woodland areas of these sites were ancient woodlands and in the case of Parndon and Ridden Woods were SSSIs so it was essential that the proposals minimised ecological impacts.

8.5 Natural flood management techniques (NFM)

Delivery of strategic flooding solutions through SuDS, incorporating more natural flood management techniques² such as woodland creations and leaky dams (figure 6), could provide clear opportunities to deliver benefits including creation and restoration of wetland habitat.

8.6 Connect people and wildlife to green infrastructure through active travel (CPW)

To ensure that access to green spaces is as easy as possible for all and to improve the character and sense of place, it is essential that greater connection with public realm, developments and transport planning is established.

8.7 Delivering environmental therapies and activities (ETA)

The evidence strongly suggests that high quality green spaces can help reduce health and social inequalities and can be a cost-effective way of addressing many social and wellbeing needs. Improving access and raising awareness of the green spaces, facilities and activities available has a role to play in encouraging people to incorporate more green exercise and nature contact into daily routines helping to improve wellbeing and social inclusion through nature-based solutions. As a result, high quality green space and nature-based solutions could be used to a greater extent as a treatment for mental and physical health through referrals to environmental therapy such as green exercise programme run by Active Essex and High Woods Big Garden in Colchester.

Chapter 9 Implementation of the Green Infrastructure Strategy by Sector

It is the intention of this strategy to embed green infrastructure requirements within new development and for green infrastructure to become an integral part of the day-to-day considerations in other key sectors and services to ensure that future planning and design is coherent, structured and focused.

The following sectors have the potential to make a significant contribution to protect, improve, create and sustain our green infrastructure:

- Planning
- Minerals and Waste
- Highways and Transport
- Flood and coastal Management
- Energy
- Health
- Education
- Agriculture

The following sections relates to majority of the green infrastructure objectives:

Protect, Improve, Create, Connectivity, Inclusivity, Health

9.1 Planning

The planning system is one of the most important means of delivering green infrastructure. It can ensure that development respects, enhances and expands the existing green infrastructure network. While the quality of green infrastructure has the potential to improve and enhance most developments and it should be a key consideration for any other sector such as highways and utilities.

One of the key issues facing Essex is the relationship between its urban environment, settlements and with the wider natural and man-made landscape. Green infrastructure should, therefore, be thought about at every scale of planning, from the strategic framework (allowing cross boundary issues to be considered) right down through the city, towns and villages and within streets to the individual home.

9.1.1 Supporting Large and Small developments

Local Plans have identified the need for housing and employment growth in Essex to be delivered through small and large developments, including new ‘Garden Community’ settlements. If high quality, sustainable and multifunctional green infrastructure and the environment net gain principle is considered early in the design process and master planning of development sites it will not only provide enjoyable and healthy environments for its future residents and employees but can improve developers financial return. Green infrastructure can be incorporated on any scale and should be integral to planning the layout and design of new buildings and developments from the outset, the important aspect is determining the right design.

9.1.2 Green Infrastructure in Cities, Towns and villages

As population increases there is a need for developments to utilise every space better. Green infrastructure is widely known as a sustainable and cost-effective way of managing key environmental issues in our settlements. Therefore, more imaginative use and adaptation of space within the layers of exiting city, towns and villages with green infrastructure to cater for the present and future needs of society will be necessary.

Green infrastructure can be introduced on any site, even if it’s a small rain garden as shown in figure 7, or a green roof on an outbuilding. By reviewing existing spaces and green infrastructure within our settlements creates the potential to improve the overall sustainability and performance of places and highlight any deficiencies and opportunities. Gaps in the rights of way and greenways network around towns and villages, including possible circular routes should be targeted as a potentially simple solution to improving and creating good multi-users local access to green spaces, the countryside and coast. As well as opportunities to “green” the grey infrastructure as a means to improve its performance and benefits in terms of environment, social and economic values.

9.1.3 Mineral Extraction and Waste Restoration

Mineral and waste development and mineral extraction are a temporary operation; however, it can have a long-term impact on the character of an area. Once the extraction or waste operations have been completed, the land needs to be restored to an appropriate after-use - either to its former use or an alternative use. Restoration of mineral and waste sites offers unique opportunities for the creation of high-quality green infrastructure, especially where they are located in close proximity to communities and beneficial to biodiversity and habitat creation. For this to be achieved, it is important when planning and managing green infrastructure in minerals extraction, waste operations and their restoration to consider the site in its context. This includes considering the features of the site and the networks of habitats, sustainable transport routes and water courses that surround it.

Figure 7: Case Study: Sponge 2020 – Hospital Rehabilitation Rain Garden

Basildon University Hospital is located in a Critical Drainage Area within South Essex, an area within the top 10 at risk from pluvial flooding nationally. In order to increase the resilience to surface water flooding Basildon and Thurrock University Hospital worked with Essex County Council and other stakeholders to retrofit Sustainable Drainage Systems (SuDS) in the hospital as part of the EU Interreg 2 Seas project Sponge 2020, which is part-financed by the European Regional Development Fund.

Through the installation of SuDS allows areas to be adapted to slow down the rate of water entering conventional drainage systems and reducing the flood risk. However, by incorporating more natural flood management techniques through the use of green infrastructure within the design and delivery of SuDS enabled the creation of a rain garden on the grounds of the hospital. This rain garden provides multiple functions and benefits of not only alleviating flooding, but a place for staff, visitors and patients to enjoy and relax, improve recovery rates, promote nature and adapt to climate change.

This project provides a great example of how green infrastructure can be implemented alongside other infrastructure such as SuDS and demonstrates:

Adaptation of critical infrastructure to utilise existing space to improve the overall sustainability and performance of a place to provide a wider range of uses with multiple benefits for people and wildlife.

Retrofitting of SuDs and green infrastructure in an urban environment.

Size doesn't matter – green infrastructure can be introduced on any site to alleviate flooding and encourage biodiversity.

Co-benefits and dual functionality of SuDs.

9.2 Highways

There are over 5,000 miles of roads within the public realm in Essex, together with a footway network of 4,000 miles (including footways shared with cycleways), and 4,000 miles of public rights of way.

There are many areas of green space along the highway network and other linear routes that are not necessarily accessible but are nevertheless of visual importance. In some cases, these play an important role in creating visual separation between roads, housing and the surrounding countryside, as well as providing habitat value and improve air quality. Road and railway verges and waterway banks form important wildlife corridors and play a key part in the tourism appeal of the landscape for many recreational activities.

Roads also impact on the local connectivity and accessibility of the landscape severing links between places. It is important to consider the user hierarchy when considering how people access green spaces. This is a well-established concept as shown in figure 8. The objective is not to give priority for pedestrians and cyclists in every situation, but to ensure that the needs of vulnerable road users are considered first.

9.2.1 Greenways

Essex green infrastructure network can be used as a viable and sustainable transport option. In support of the Health and Wellbeing and Transport authorities

promotion of active travel through walking, cycling and other physical activity. Greenway routes can be creatively designed to encourage leisure use, a method for accessing recreational activities, as well as providing attractive through route that links places and communities for work and school travel.

There is a number of public rights of way, cycle routes and other greenways that networks across Essex; in which a few of the routes are promoted, such as The Essex Way, Flich Way and Thames Estuary Path. However, more work can be done on connecting these routes and allowing for multi-user accessibility such as bridleways. Within urban areas, consideration should be given how the routes can be made more attractive so, they are used by residents more frequently for their daily trips. Whilst opportunities should be taken to add to and improve the promoted paths and the emerging coast path to encourage more active use of the network through more targeted promotion and improved signage particularly on the urban fringes.

9.3 Coast

Essex has one of the country's longest coastlines stretching for over 300 miles. The many different uses of the Essex coast all exert varying pressures on this sensitive and highly valued natural resource. By using coastal green infrastructure such as plants, sand, salt marshes and natural barriers will reduce erosion and flooding. It also can lessen the associated impacts on human health and property. Restoring affected wetlands can reduce wave heights and property damage. In contrast to hard structures such as bulkheads and sea walls, vegetative shorelines provide multiple ecosystem benefits, including improved water quality, aquatic habitat, and carbon sequestration. Managed coastal improvements also provides potential sites for renewable energy and creates connected habitats for wildlife.

9.4 Flooding

Flooding remains one of the most frequent natural hazards in Essex and is predicted to experience an increase in winter flooding events and summer droughts through climate change. Green infrastructure provides significant opportunities to deliver space for water and natural options for flood alleviation and water management.

The implementation of SuDs is becoming an integral part of best management practices within the public realm, new and existing developments and is widely applied as a planning condition. Its end design solution can become attractive amenity features with the development, provide opportunities for biodiversity enhancement, recreational corridors and deliver multi functions and benefits to a community. Especially when natural flood management techniques are considered within the flood management schemes design. SuDS may become a key driver for green infrastructure. Consideration for green infrastructure measures to improve water quality and alleviate flooding could be encourage through the delivery mechanisms, such as the SuDs Design Guide and Local Plans

9.5 Energy

The energy sector - the burning of coal, natural gas and oil for electricity and heat - is the largest single source of global greenhouse gas emissions and is responsible for over 2,897 kt CO₂ which equates to over a quarter of all Greater Essex greenhouse gas emissions (Gov.UK, 2018). Energy transmission infrastructure, such as power

stations also generally leads to fragmentation of natural habitats, ecosystem destruction and depletion of ecosystem services. Green Infrastructure can play a role in reducing the negative impacts of the energy sector. For example, green areas such as urban parks, and tree-lined streets can play a role in reducing an area's overall energy demand and thus contribute to the moderation of the 'urban heat island' effect. There are also quite simple actions and interventions involving the integration of green infrastructure into the energy transmission infrastructure as a way of helping to address the increasing pressure on this sector to mitigate some of the deleterious effects that such development has on the environment, through the production of bioenergy (biofuels) and bio-solar farms etc.

9.6 Health

In addition to the important role green infrastructure plays in providing healthy and comfortable urban environments, access to green infrastructure also provides general health benefits. It not only provides clean air and clean water, its natural places to play while serving as health-improving green space. Protecting, enhancing, and expanding natural and open areas; planting street trees in paved areas; creating bioswales in road, rights of ways and parking lots; adding green roofs and living walls to buildings; and increasing tree canopy can potentially make a significant difference on disease prevention, health promotion, equity, and ultimately, health care cost savings.

Health professionals working with providers of green spaces, sport activities and communities are well placed to use the natural environment as a resource, delivering green care and social prescribing. Make it possible for people to participate in therapeutic nature-based activities, wherever they live and giving people a greater choice of ways to get active in the outdoors. Figure 9 provides examples of where there are opportunities to work in partnership to coordinate delivery of green care.

Figure 9: Case Study: Essex Local Delivery Pilot

Essex is just one of 12 Local Delivery Pilots selected by Sport England nationally and all the pilots are deliberately focused on whole system change – the need for strong vision and leadership at the highest level and with the collaboration of all stakeholders, at all levels, being key. The aim is to create innovative partnerships that make it easier for people in these communities to access sport and physical activity, including use of green spaces.

The pilot is led by The Essex Health and Wellbeing Board and supported by Active Essex, Basildon Borough Council, Colchester Borough Council, Tendring District Council, the University of Essex and other partners. Basildon, Colchester and Tendring are three areas that represent 37% of all inactive people in Essex and by using them as the focus for the Delivery Pilot

Some of the findings from the test and learn pilots included:

Success factors identified for example:

An accessible location which is safe, friendly, and welcoming.

Strong and passionate leadership, typically comprising a paid leader supported by trained volunteers.

A collaborative approach with a range of engaged partners.

Effective use of community insight and engagement to understand the place and people and to co-produce projects and activities.

Factors that limit the success for example:

Individual barriers faced by residents (e.g. long-term physical condition, child care needs, lack of confidence).

Referral processes are currently not successful in introducing new participants to the projects

There is a lack of knowledge and awareness by residents and providers of existing physical activity programmes.

(www.activeessex.org/essex-local-delivery-pilot/)

9.7 Education

Green Infrastructure provides learning opportunities as an ‘outdoor classroom’ relevant to both the National Curriculum and lifelong learning (e.g. forest schools and Continuing Professional Development). It is a valuable educational resource and has the potential to improve educational achievement, through improved concentration and self-esteem. By exploring the wider environment such as woodlands, ponds, wildlife areas help children and young people to learn a variety of skills through play and social interaction –stimulating the imagination and testing boundaries. These are essential for our children and young people to grow and learn.

By greening learning facilities means educational establishments with green outdoor environments allow children and young people to have safe, ready-made access to green places and opportunities for outdoor learning and engagement with nature, whilst providing other benefits such as mitigating flood risk, air pollution and improved energy efficiency.

9.8 Agriculture

Agricultural practices have had a significant impact on shaping the landscape character of Essex and is an important industry in rural communities. The agricultural system can play a significant role in protecting and enhancing our natural and cultural heritage (highly valued landscapes, structures and biodiversity influenced by natural processes and a long history of land management). Engaging farmers, therefore, in delivering green infrastructure can offer substantial social and environmental benefits, to meet the needs in areas where opportunities for access and recreation are limited. It is important to encourage and build on farmers ethos of caring for the environment. There is a need to take into account their local context to work out how best to engage with the agricultural community. Especially with the potential opportunities that could be presented from the withdrawal from the European Union’s Common Agricultural Policy (CAP), that originally decided how the land is farmed, food is grown and the state of the natural environment. As well as the emerging new agricultural bill that would offer farmers environmental land management contracts, requiring them to sign up to specified measures to safeguard the natural environment (Defra, 2018).

Chapter 10 Implementation and Delivery of the Strategy

The green infrastructure approach provides opportunities to add value to existing programmes, by highlighting more sustainable solutions, making optimum use of existing budgets and resources to achieve multifunctional outcomes. This will help achieve the sustainability objective of the strategy.

10.1 Stakeholder engagement

The purpose of the Essex Green Infrastructure Partnership is to optimise partnership working with a wide range of stakeholders, planning and delivery of green infrastructure in Essex. The partners represent a diverse range of interests, all focused on enhancing the natural and historic environment, whilst encompassing sustainability, health and wellbeing and the economy.

10.2 Funding

Whilst there are traditional funding pots for green infrastructure such as Lottery, Section 106, Charity Funding etc, this strategy has shown that green infrastructure meets the objectives of many other sectors, and as such, there are a variety of potential projects and funding sources which can potentially fund green infrastructure, such as:

- Governments High Street Fund,
- Programmes Landfill restoration,
- Surface Water Amelioration and Natural Flood Management schemes,
- RAMS,
- Active Essex,
- Coast Path in Essex,
- Social prescribing.

Much can be achieved with existing resources including invaluable volunteer efforts. This is especially important since public sector finances continuing to be constrained and across the county, therefore, there will be a need to work more efficiently with the resources that are available. This means identifying opportunities to deliver across outcomes, working in partnership and accessing external funding wherever possible to deliver our priorities.

Funding for maintain green infrastructure, figure 10 are two examples where ECC has created financially self-sustaining green infrastructure; namely the Essex Country Parks and Essex Woodlands project.

10.3 Timelines for Delivery

The strategy sets the framework for delivery but needs to be monitored and reviewed on an ongoing basis.

Figure 10: Case Study: Essex Parks & Woodlands

Essex County Council manages 7 Country Parks to provide recreation, allow flora and fauna to flourish and protect history. The parks' maintenance and development

are funded mainly through car parking costs, making the parks self-sustaining an important resource for today and the future. <http://www.visitparks.co.uk/>

Case Study: Essex Woodland Project

The Essex Woodlands Project is an innovative and sustainable approach to the management of Essex County Council's woodland estate. It aims to sustainably manage remote (unstaffed) areas of woodlands in a way that minimises financial burdens on the Council. With little or no active management over the past ten years, the woodlands have suffered from overgrown paths, unmanaged habitats and historic features and outdated interpretation materials.

Under a Countryside Stewardship agreement with the Forestry Commission and Natural England, Place Services will implement woodland management plan for 32 sites and a total area of 300 hectares. This includes 3 sites which are designated Sites of Special Scientific Interest (SSSI) and 22 areas of ancient woodland (over 400 years old). Maintenance work will be undertaken in a sensitive way with the use of Suffolk Punch horses and will be supported by rangers, volunteers and partner organisations such as The Conservation Volunteers.

<http://www.essexwoodlandproject.org/>

Chapter 11 Actions and Outcomes

A future action plan will set out a programme of proposed actions for implementation of the Green Infrastructure Strategy to achieve the green infrastructure objectives. It is primarily intended to provide a framework for coordination of green infrastructure planning and delivery as well as facilitating coordinated action by local partnerships and stakeholders in the public, private and voluntary sectors.

The following action plan is broken down into the key themes aligned to the objectives and the proposals mentioned in chapter 7:

Objective: Protect

Theme: Marketing, Branding & Promotion

Proposal: Highlight the most valuable green infrastructure in Essex in terms of their multi-functionality and benefits – through rebranding Essex as Green Essex with 1,908 designations.

Action: Working with Visit Essex, Essex Communications and partners to develop a pan Essex Marketing Strategy to create a brand for Green Essex.

Theme: Re-designation of Green Infrastructure

Proposal: Encourage and support the review of existing designations to ensure their currency and maintain the accuracy of site information.

Proposal: Support the recognition and appropriate designation of new green infrastructure, e.g. Local Wildlife Site, Local Nature Reserve.

Action: Discuss with Local Planning Authorities, Natural England and Place Services regarding re-designating the new green infrastructure as new designations e.g. Wallasea, South Essex Marshes, Thames Chase etc.

Theme: Environment Net Gain & Offsetting

Proposal: Embedding an 'environmental net gain' principle for development, including housing and infrastructure

Action: Create the methodology of the 'environmental net gain' principle using the UEA green infrastructure functions and benefits mapping so it can be used in the following guides/plans:

Essex Design Guide

Highways Plans and

Local Development Plans

Garden Communities and villages proposals

Walking strategy, Cycle & walking Improvement Plans, Cycle Action Plan

Rights of Way Improvement Plan

Essex Planning Officers' Association (EPOA) Healthy places guidance notes

Work with EPOA, Place Services and partners to develop the 'environmental net gain' methodology.

Coordinate the protection of coastal green infrastructure through the Recreational disturbance Avoidance and Mitigation Strategy (RAMS).

Theme: Improve, Repurpose and Create new Multi-Functional Green Infrastructure

Proposal: Coordinate the protection of coastal green infrastructure through the Recreational disturbance Avoidance and Mitigation Strategy (RAMS).

Action: Engage with Place Services and partners to develop the RAMS schemes to protect important nature conservation sites in Essex.

Objective: Improve

Theme: Marketing, Branding & Promotion

Proposal: Create a Green Essex Network to develop, improve and promote Green Essex

Action: Contact the Green Infrastructure Knowledge hub group to liaise about the establishment of the Green Essex Network. The GE Network would comprise of the main green infrastructure managers and would coordinate the development of Green Essex.

Theme: Improve, Repurpose and Create new Multi-Functional Green Infrastructure

Proposal: Support the development of new Visitor Centres and facilities

Action: Liaise with ECC Country Parks and partners to support new Visitor Centre improvements and facilities in the Country Parks.

Theme: Marketing, Branding & Promotion

Proposal: Better marketing & promotion of green infrastructure to increase use and income

Action: Working with Visit Essex, ECC Comms and partners to develop a pan Essex Marketing Strategy to:

Promote new Visitor Centres and facilities

Creation of a Green Essex promotion – a network for pan Essex green space and facilities marketing.

Theme: Improve, Repurpose and Create new Multi-Functional Green Infrastructure

Proposal: Public Realm green infrastructure improved to reduce pollution and improve character and sense of place

Actions: Working with health and flood partners to seek funding to create a Green Infrastructure Pilot project to support people to lead healthier lives.

Reviewing the highways policy and maintenance plans - researching into the environmental impacts from our maintenance work to adjust our practices for ecological and economic benefits.

Development and coordination of cycling and walking strategies to delivery green infrastructure with its projects.

Explore and Implement an Essex Green Permit Scheme, allowing locals to adopt and green up areas within the public realm.

Theme: Natural Flood Management techniques

Proposal: Create Water Gardens, Green roofs and Bio retention areas to absorb urban water

Action: Liaise with Essex Highways and Floods teams to seek funding for the provision of green infrastructure and SuDS (Sustainable Drainage Systems).

Proposal: Continue creating green spaces which also function as Natural Flood Management and SuDS schemes

Action: Seek funding from partners to address flooding but also create green spaces with multiple benefits and provide environment net gains.

Theme: Improve, repurpose and create new multi-functional green infrastructure

Proposal: Encourage better management of green infrastructure to benefit locally native species, focussing on recognised nature conservation priorities.

Action to be confirmed

Objective: Create

Theme: Connect people and wildlife to Green Infrastructure through active travel

Proposal: Develop the Coast Path in Essex

Actions: Liaise with Highways about the opening of the first section of the Coast Path in Essex.

Market and promote the Coast Path through Visit Essex, Comms and other partners. Improve access to the coast path in Essex using sustainable transport, signage etc utilising innovative funding such as the Coastal Communities Fund.

Collaborate with Visit Essex and Culture to develop events on the coast increasing the cultural offer of the coast.

Theme: Marketing, Branding & Promotion

Proposal: Increased access to the Outdoor Pursuits Centres

Action: Liaise with Outdoor Pursuits Centres, Active Essex and Country Parks to explore extending the Outdoor Pursuits offer.

Theme: Improve, Repurpose and Create new Multi-Functional Green Infrastructure

Proposal: Create green infrastructure in new developments such as Garden Communities, with best practice guidance on its design and management for multiple benefits.

Action: Continue to consult on green infrastructure on key documents, such as:

Essex Design Guide

Highways Plans

Local Development Plans

Garden Communities and villages proposals

Health Impact Assessments.

Proposal: Develop green infrastructure as part of Minerals and Waste restorations with reference to nature conservation priorities e.g. Pitsea Landfill

Actions: Consult on green infrastructure after use with Mineral and Waste Planners

Liaise with Mineral and Waste Planners as minerals and waste sites are prepared for restoration and after care being made ready as green space to maximise green infrastructure value.

Explore opportunities to create a Green Discovery Park, showcasing green Infrastructure, Solar energy, SuDS, climate resilient planting, Waste and Recycling and Electric vehicle charging and sustainable visitor centre as a multi-functional and educational site.

Provide green infrastructure training for Minerals and Waste planners

Theme: Connect people and wildlife to Green Infrastructure through active travel

Proposal: Create Town or village circular routes especially in areas of green infrastructure deficiency

Action: Seek sponsorship for a pilot circular village route(s) competition. Liaise with Parish Councils, District, City and Borough Councils, Active Essex, Local Health and Wellbeing teams and/ or Village group to deliver circular route.

Theme: Theme: Improve, repurpose and create new multi-functional green infrastructure/ Environment Net Gain & Offsetting

Proposal: Strategically identify priority areas for the creation or improvement of green infrastructure that could provide most benefit for locally native species of recognised nature conservation priority.

Action to be confirmed

Proposal: Use planning policy to secure multi-functional green spaces within and beyond development site boundaries through the application of biodiversity net gain, biodiversity off-setting and the creation of compensation habitat.

Action: Work with EPOA, Place Services and partners to develop the 'environmental net gain' methodology.

Proposal: Where possible, use new green infrastructure provision to buffer or extend existing designated sites.

Action: Discuss with Local Planning Authorities, Natural England and Place Services (Environmental consultancy to lead) regarding re-designating and the approach to buffer or extend existing designated sites.

Objective: Connectivity

Theme: Connect people and wildlife to Green Infrastructure through active travel

Proposal: Develop the Coast Path in Essex

Action: See Above

Proposal: Develop Inter connecting paths between green infrastructure
Using the UEA mapping to identify routes which realise most multiple benefits by connecting green infrastructure.

Action: Seek funding from various benefit funders to create inter connecting paths.

Proposal: Restore and Promote Essex promoted paths:

The Forest Way

The St Peter's Way

The Essex Way

The Roach Valley Way

The Stour Valley Path

The Thames Estuary Path,

The Flitch Way

The Saffron Way

Coast Path in Essex

Blackwater Rail Trail

John Ray Walk

Actions: Liaise with Public Rights of Way team and Country Parks to assess condition and prioritise promotion.

Seek funding (local and national) to fund promotion and infrastructure.

Objective: Inclusivity

Theme: Delivering environmental therapies and activities

Proposal: Explore Environmental therapies and challenges aimed at developing young people

Action: Liaise with Education service, Children's services, health partners, Outdoor pursuits and Country Park to build upon existing programmes.

Theme: Marketing, Branding & Promotion

Proposal: Promote youth orientated activities in Green spaces e.g. mountain biking, Go Ape, Geocaching, etc

Action: Promote activities in Country Parks, Outdoor Pursuits centres, Active Essex and partner sites to develop youth orientated activities.

Objective: Health and Wellbeing

Theme: Delivering environmental therapies and activities

Proposal: Explore Environmental therapies delivered through mental health services

Actions: Liaise with Mental Health Agencies, wider health partners and community voluntary sector to develop Green Activities such as green gym, eco-therapies, guided walks.

Better promoted and tailor Green Therapies to mental health service users.

Proposal: Develop and Promote Healthcare and wellbeing through Green Infrastructure activities

Actions: Liaise with Public Health and Health and Wellbeing Boards in District,/ Borough and City to assess health deficiency areas and propose green activities such as walking and other physical activities.

Work with Active Essex on their projects to better use green spaces to encourage more people to be active.

Objective: Sustainability

Theme: Improve, Repurpose and Create new Multi-Functional Green Infrastructure

Proposals: Develop new facilities that will generate revenues

Create a Green Essex Fund for endowments, fund raising bids, donations etc

Actions: Liaise with green space managers to identify potential income generation facilities, including a creation of a Green Discovery Park.

Identify the relevant funding streams to create new facilities.

Set up a fund in conjunction with Essex Finances and steered by the Green Essex Partnership.

Chapter 12 Strategy Review

To ensure that the vision, objectives and actions proposed by this strategy continue to be met, evaluation and monitoring will be undertaken as shown in figure 11. This strategy is intended to be a 'live' document that is regularly reviewed so that it can maintain the essential characteristics of the county's environment into the future.

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