Landscape and Visual Impact Assessment
for
Airport Business Park Southend
on behalf of
Henry Boot Developments Ltd (South)

October 2015
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1 INTRODUCTION

1.1 The Landscape Partnership has been commissioned by Henry Boot Developments Ltd (South) to undertake a Landscape and Visual Impact Assessment (LVIA) of a proposed new business park in Rochford District, north of London Southend Airport, with an associated access road off the B1013 Cherry Orchard Way, and, to facilitate the development, the relocation of the existing Westcliff Rugby Football Club. The location of the site is shown on Appendix 4, Figure 1 Location plan.

1.2 The proposed development would comprise two parts:

1/ ABPS development

The development of a new business park at land east of Cherry Orchard Way, Rochford, falling within the Rochford District Council boundary. Specifically, the proposed description of development is:

“Outline application with all matters reserved other than access for the development of land at Cherry Orchard Way to create a business park to comprise use classes B1, B2 and ancillary uses to include A1, A3, A4, C1 and B8, landscaping of access road, and demolition of the existing rugby club.”

The application is submitted on behalf of Henry Boot Developments Ltd (South) (HBD), which is a JV partner with Southend-on-Sea Borough Council.

The application site comprises 55 acres of predominantly greenfield land in agricultural use. The land is allocated in the recently adopted London Southend and Environ Joint Area Action Plan (2014) (hereafter the JAAP) for a business park. The JAAP is one of a number of plans prepared jointly by Rochford District Council (RDC) and Southend on Sea Borough Council (SBC). The JAAP has been developed in accordance with the Local Development Framework of both RDC and SBC and conforms to the provisions of the National Planning Policy Framework which seeks to support sustainable economic development, such as now proposed.

The site is in a strategic location, in immediate vicinity of a regional airport and situated 1.2 km south-west of Rochford town centre and 3.6 km north of Southend-on-Sea town centre. The Site is bounded by Cherry Orchard Way to the west, a principal route out of Southend-on-Sea, and Aviation Way to the south.

2/ Westcliff Rugby Club development

The relocation of the existing Westcliff Rugby Football Club (WRFC), currently located on the western portion of the ABPS site, to land east of Cherry Orchard Way, Rochford and immediately to the north of the ABPS site. The application is submitted on behalf of HBD, which is a JV partner with Southend-on-Sea Borough Council. Specifically, the proposed description of the development is:
“Hybrid application: Full planning permission for re-provision of rugby pitches and Outline planning permission for the erection of club house, provision of car parking, floodlighting and landscaping with all matters reserved.”

The application site comprises greenfield land allocated in the JAAP for the new sports facility.

1.3 The JAAP is one of a number of plans prepared jointly by RDC and SBC. It has been developed in accordance with the Local Development Framework of both RDC and SBC and conforms to the provisions of the National Planning Policy Framework which seeks to support proposals that would enable sustainable economic development.

1.4 The LVIA assesses the landscape and visual effects of the proposed development. This process includes consideration of the effects of the proposals upon the landscape of the site itself, the local and wider landscape character and any changes to views. The LVIA provides a description of the existing landscape and built features within the site and its immediate vicinity. It considers the relationship of these features to the local and wider landscape characteristics; the contribution that these features have in views; and the presence of statutory or local landscape-related designations. In defining ‘landscape’, reference is made to the adopted definition agreed by the European Landscape Convention (Florence: Council of Europe 2000), which states that the landscape is “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”.

1.5 The LVIA will also assess:

- any loss or damage to landscape and built features, and the perceived change to the character of the landscape, likely to result from the proposed development;
- the capacity of the landscape to accommodate the proposed type of development;
- the extent to which the development would be visible; and
- how views would change from a variety of visual receptors.

1.6 This report details the results of the LVIA, taking into account a landscape strategy that mitigates any adverse effects on the character of the surrounding landscape and its visual amenity, as arising from the development.
2 METHODOLOGY AND ASSUMPTIONS

2.1 In order to understand how landscape features, landscape character and views would be affected, the assessment uses an objective approach based on the Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA). The detailed application of these Guidelines, the criteria and categories used, and the assumptions and limitations applied are set out at Appendix 1: Methodology. The assessment approach determines the significance of the changes to the landscape and views, should the proposed development proceed. This is achieved by first understanding the relative sensitivity of the character of the landscape and the view, and then combining this with the magnitude or extent of change that would result from the proposed development. Changes can be experienced as an adverse, beneficial or neutral influence. Other considerations are also taken into account such as seasonal variation, direct or indirect effects and comparison of effects in the first year following completion and after a period of 10 years once any planting has established. The GLVIA advises that the level of detail provided should be to a reasonable level and sufficient to determine the likely significant effects. This should be ‘appropriate and proportional to the scale and type of development and the type and significance of the landscape and visual effects likely to occur’.

2.2 The methodology used to conduct this landscape and visual impact assessment, and the locations of receptors and representative viewpoints that the proposal is assessed against, was agreed with the Rochford District Council’s planning officer.

Assumptions and limitations

2.3 The following reference drawings have been used, and assumptions made, in respect of the assessment of effects:

- the indicative scheme layout is as shown on the Indicative Layout drawing as prepared by Jefferson Sheard Architects;
- the indicative building heights are as shown on the Indicative Layout Building Heights drawing as prepared by Jefferson Sheard Architects; for the purposes of the LVIA, the following assumptions are made:
  - single storey buildings would have a maximum ridge height of 15m
  - two storey buildings would be a maximum of 9m high
  - three storey buildings would be a maximum of 13m high
  - four storey buildings would be a maximum of 17m high

• the indicative landscape proposals are as shown on the Illustrative Landscape Masterplan, as prepared by LDA Design;
• the assessment Baseline Year is 2015;
• existing vegetation will continue to grow at rates typical of the location, species and maturity of the vegetation;
• the proposed tree and shrub planting would grow at a rate of approximately 250mm/year and the proposed hedge planting at approximately 200mm/year, based on the average expected growth rates for the selected species growing on free-draining, slightly acid loamy soils. Predicted growth is also based on the assumption that no growth will take place in the first year, as the plants adjust to their new growing environments;
• for a view from a public rights of way, public open space and within a residential property, the receptor is an standing adult with an eye height of 1.6m;
• visual effects are assessed on the basis of good visibility. Visual effects can be expected to vary, e.g. poor visibility at times of low cloud, rainfall and dusk. At these times a reduction in visual clarity, colour and contrast would be experienced. Reduced visibility would limit the extent of view possible particularly in mid to long distance views. Consequently, the assessment of effects is based on the worst case scenario, where the proposed development would be most visible;
• extent of use of public rights of way is based on: known information (e.g. if the right of way forms part of a promoted route at a local or national level), signage, and circumstantial evidence at the time of the survey such as recent disturbance of grass and crops, a clearly defined path, extent of wear, and the number of people/horses using the right of way at the time of the survey. The extent of use of a road is based on the number of vehicles observed using the road at the time of the survey and as could reasonably be expected for the class of road.

2.4 In undertaking the assessment, other than the site, private property has not been accessed, as it is generally considered impracticable to seek approval to gain access to residential properties or other buildings to assess the effect on views from each window in a property or adjoining land. Assessment is therefore based on extrapolation from the nearest publicly accessible location, which will usually be a road or public right of way, or on views within the site looking outwards. Professional judgement is used to extrapolate what the likely effect on views would be from windows, making allowances for changes in height, e.g. from a first floor window.

2.5 The methodology for the LVIA and the location of the representative visual receptors were agreed with Rochford District Council on 28th July 2015.
3 SITE LOCATION

3.1 The proposed Airport Business Park Southend (ABPS) would be located in Rochford District, immediately north of the existing Aviation Way Industrial Estate and c.450m north-west of the main runway at London Southend Airport. Access to the site is proposed via a new roundabout and access road from the B1013 (Cherry Orchard Way). To facilitate the proposed development, the Westcliff Rugby Football Club (WRFC) grounds, currently located in the south-western portion of the site, would be relocated immediately north of the proposed business park. The WRFC’s clubhouse and car park would be located in the southern portion of the WRFC site close to the site’s boundary, and accessed via the business park’s site access from the B1013.

3.2 The ABPS site is roughly rectangular in shape and comprises an arable field in its eastern portion (approximately two-thirds of the total area) and WRFC’s rugby football pitches, clubhouse and carpark in the western portion. A mature treed hedgerow and a change in ground levels divide these two areas. The site excludes the property of Cherry Orchard Farmhouse located within the site’s western portion, with the site boundary following its garden hedges and wall. The site also encompasses a section of the B1013 and Cherry Orchard Lane. The vegetation between them and on their embankments forms a strong buffer between the development area of the site and Cherry Orchard Jubilee Country Park to the west.

3.3 The ABPS site is bounded to the north by a former brickworks, and to the east of that, by an arable field which is the proposed relocation site for the Westcliff RFC. Earth bunding with sparse vegetation separates the former brickworks from the ABPS and WRFC sites. The ABPS site and the former brickworks form the WRFC site’s southern and western boundaries. The boundary between the ABPS and WRFC sites is a field track which, when viewed from the sites’ boundaries is not easily perceptible and the two sites appear as a single large field. The WRFC site’s northern boundary is the river Roach and associated vegetation. Beyond this are further arable fields. Rochford Hundred Golf Club and a single line of houses that extend westwards from Rochford along the southern side of Hall Road.

3.4 The ABPS and WRFC eastern boundaries follow an extension of the same line, with a public footpath and adjacent field boundary hedgerow separating the WRFC site from an arable field to its east, and an area of trees and shrubs outside of the site (with associated informal horse grazing) marking the ABPS site’s eastern boundary. Southend Airport is located beyond this vegetated area. A public footpath follows both sites’ eastern boundary, within the sites.

3.5 ABPS site’s southern boundary is Aviation Way, a road providing access to the existing Aviation Way Industrial Estate and the existing Westcliff RFC. The greater part of the southern boundary is open to the road. The Aviation Way Industrial Estate presents as a mix of structures including industrial sheds, office blocks and brick buildings that are generally two to three storeys high. Kent Elm Tennis Club at the site’s south-western corner has a conifer hedge that screens views between it and the site.
3.6 The ABPS and WRFC sites lie within the valley of the River Roach on the south side of its wide, gently sloping valley bottom. The topography generally falls from south-west to north-east between 16m AOD at the ABPS site’s south-western corner and below 8m AOD at the WRFC’s north-western corner, with some internal level changes around the edges of the rugby pitches. The river valley sides rapidly steepen to the west of the B1013 to high points of 60m-65m AOD along a rounded ridge between Hockley Woods and Gustedhall Wood on south facing slopes, and 50m AOD on north facing slopes within the urban areas of north-west Southend. See Appendix 4, Figure 2 Topography.

3.7 Outside of the site, residential units and commercial premises in the vicinity include:

- Residential housing accessed from Cherry Orchard Lane: Cherry Orchard Farmhouse and its property is excluded from the site area, but would be surrounded by the proposed business park. The building is set back approximately 9.5m from the site boundary. Brickfield Cottages, a single row of two-storey terraced houses, is located c.75m north of the proposed ABPS site.

- Aviation Way Industrial Estate and Kent Elms Tennis club, immediately south of the site.

- Comet Way Industrial Estate is located to the south-west of the site with residential areas of northern Southend-on-Sea located beyond this. The closest residential property to the site in this area is c.350m.

- Stroud Green, Hawkwell and Hockley urban areas: the village of Stroud Green is largely clustered west of the B1013/Hall Road roundabout, some 600m north of the site’s north-western corner. Beyond this, c.1.6km north-west of the site, are the urban areas of Hawkwell and Hockley.

- Rochford Hundred Golf Club is located north-west of the site, sharing a portion of its boundary with the WRFC site. The private golf club’s clubhouse, c.750m north-east of the ABPS site, is within Rochford Hall, a portion of which is recognised as a Scheduled Monument, and other parts Grade I and II listed buildings.

- The Church of St Andrews, Rochford, a Grade II* listed building, is located c.830m north-west of the ABPS site.

- Residential properties on Hall Road present as a linear urban form extending west from the main area of Rochford. The dwellings are separated from the site by Rochford Hundred Golf Club and are approximately 600m north of the ABPS site and 230m north of the WRFC site.

- The Rochford’s main urban area, east of the Chelmsford-Southend Victoria railway, is separated from the site by Rochford Hundred Golf Club and London Southend Airport.

- London Southend Airport and associated buildings, runways and hard standings.
4 LANDSCAPE-RELATED DESIGNATIONS

4.1 The assessment includes landscape-related designations at a national, regional and local level, including public rights of way and landscape-related policies within the Local Development Frameworks. See Appendix 4, Figure 3 Landscape-related designations. Assessments of potential effects on other designations in the vicinity of the site and/or features, including the Metropolitan Green Belt, any ecological designations, cultural and historical assets (e.g. Scheduled Monuments, Conservation Areas, and Listed Buildings), and Tree Protection Orders are not within the scope of this Landscape and Visual Impact Assessment. Refer to the relevant report accompanying the planning application for further details.

4.2 Except for public rights of way (PRoW), neither the ABPS site nor the WRFC site fall within any other landscape-related designation at either the national or local level.

4.3 Public footpath (FP)36 runs east-west across the ABPS site, from Cherry Orchard Lane at Cherry Orchard Farmhouse, to the south-eastern corner of the site. From this point it takes a diverted route to follow Aviation Way westwards through the northern edge of the existing industrial estate, immediately south of the ABPS site. FP40 follows the eastern boundaries of both the WRFC and ABPS sites and connects footpaths from Rochford with FP36 in the south-eastern corner of the site. Bridleway (BR)48 is part of a series of bridleways that lead north-south along the B1013 between Stroud Green and Southend’s northern urban edge. Within the extent of the ABPS site, the bridleway is immediately west of the B1013. At the junction with other PRoW this bridleway links with BR10 and provides public access between Noble’s Green, to the west of the site, and the B1013.

4.4 There are a number of vegetation blocks designated as Ancient Woodland to the west of the site, with the closest at 1.1km to the site. These are generally located on the slopes of the Roach Valley and along the ridge between the Roach and Crouch rivers. Closest to the sites are Potash Wood, The Scrubs and Gustedhall Wood. These contribute to the background setting of the sites.

4.5 In the vicinity, Cherry Orchard Jubilee Country Park lies immediately west of the B1013 on land following the southern side of the River Roach valley. This a 200 acre public open space is set in rolling countryside and is managed as open grassland and woodland. It provides unique recreational facilities for residents and visitors to the area and provides a habitat for many plant and animal species. The first stage of the project opened in 2003. This is allocated for and protected as Existing Open Space by Policy OSL1 of the Rochford District Allocations Plan 2014.

4.6 There are two principal landscape designations noted in the Rochford District Allocations Plan 2014. Policy ELA3 recognises and allocates the Upper Roach Valley as an area to be protected and enhanced in accordance with Policy URV1 of the Core Strategy. It calls it a ‘green lung’ with “important landscape characteristics which deserve continued recognition” and “as an area providing informal recreation opportunities for local residents. The designation of this area presents opportunities for enhancing
access to this potentially substantial recreational resource." The Upper Roach Valley extends across the river valley between Rayleigh and Hockley and eastwards to the B1013, within 150m approximately of the north-east corner of the ABPS site at its closest point.

4.7 Policy ELA2 Coastal Protection Belt identifies open and undeveloped areas to be protected and enhanced in accordance with Policy ENV2 of the Core Strategy. The management approach address to "not permitting any development in areas that are at risk from flooding, erosion and land instability and ensuring that exceptionally permitted development will not have adverse impacts on the open and rural character, historic features and wildlife of the coast". The proposed site is some 1.7km to the west and inland of the designated Coastal Protection Belt. Due to intervening development, protection and topography, there are no visual connections between the site and the designation.

4.8 As well as public rights of way (PRoW) FP36, FP40 and BR48 which are located within or adjacent to the site and discussed previously, there are several other PRoW in the vicinity of the site, including:

- The Roach Valley Way, a promoted long distance footpath. This follows the routes of FP4 and FP5 beside the River Roach from Blatches Farm to the B1013 where it then crosses an arable field immediately north of the WRFC from south-east to north-west, to Hall Road.
- BR10 provides public access between the B1013, in the vicinity of the Comet Way Industrial Estate, and the Noble's Green area of Southend, as well as to areas north of the site via the wider PRoW network.
- A number of short sections of PRoW which link longer lengths of public rights of way together.

Table 4.1: Landscape-related designations

<table>
<thead>
<tr>
<th>Designation</th>
<th>Importance</th>
<th>Distance (closest point)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancient Woodland</td>
<td>National</td>
<td>1.1km to WRFC site</td>
</tr>
<tr>
<td>Roach Valley Way</td>
<td>Regional</td>
<td>20m to WRFC site</td>
</tr>
<tr>
<td>Public Rights of Way</td>
<td>Local</td>
<td>FP36 and BR48 within ABPS site, FP40 adjacent to ABPS and WRFC sites</td>
</tr>
<tr>
<td>Cherry Orchard Jubilee Country Park – Existing Open Space (OL1)</td>
<td>Regional / Rochford DC LDF</td>
<td>Adjacent to ABPS site</td>
</tr>
<tr>
<td>Upper Roach Valley (ELA3)</td>
<td>Rochford DC LDF</td>
<td>150m to ABPS site</td>
</tr>
<tr>
<td>Coastal Protection Belt (ELA2)</td>
<td>Rochford DC LDF</td>
<td>1.7km to both sites</td>
</tr>
</tbody>
</table>
5 **LANDSCAPE FEATURES AND LANDSCAPE CHARACTER**

**Site Features**

5.1 The ABPS site comprises two gently sloping fields divided by a steep change in slope with a hedgerow along it which crosses the site from north to south. The eastern portion is currently under arable cultivation. The western portion consists of amenity grass maintained for rugby, a floodlit pitch, a car park, and clubhouse.

5.2 The proposed location of Westcliff RFC, referred to as the WRFC site, is adjacent and to the north of the ABPS site. It is currently an arable field. The River Roach marks the site’s northern boundary.

5.3 The landform generally slopes very gently from south-west to north-east across the two sites, from 16m down to 7.8m AOD. Internal earthworks within the ABPS site have formed sharp changes in level around the edges of the rugby pitches, with them at a level 2.0 to 2.3m lower than the surrounding ground to their west and south, and 1.5 to 2.3m below the level of the arable field to the east of the pitches. A ditch of an additional depth of 1.5m runs between the pitches and the slope up to the arable field. A hedgerow runs along the top edge of the embankment, north to south across the ABPS site.

5.4 As well as the hedgerow along the change in level between the rugby pitches and arable field, within the ABPS site there is a dense buffer of vegetation along the east and west of the B1013 and Cherry Orchard Lane. The western edge of this vegetation marks the site’s western boundary. There are further vegetation lines to the north and east of the site and around the Cherry Orchard Farmhouse property which form the site’s boundaries.

5.5 Details of site features and their sensitivity to change are set out in Table 5.1 below. Historic and cultural heritage features and the quality and condition of site vegetation are assessed in the relevant report accompanying the planning application. They are assessed here only in terms of their contribution to landscape character.

**Table 5.1: Site features**

<table>
<thead>
<tr>
<th>Site Feature</th>
<th>Description</th>
<th>Landscape Sensitivity: Value of receptor (features)</th>
<th>Landscape Sensitivity: Susceptibility to change (large scale / commercial)</th>
<th>Overall Landscape Sensitivity</th>
</tr>
</thead>
</table>
| Landform     | - Overall there is a gentle gradient across the two sites, from west to east and from south to north: from 16m AOD at the south-west corner to below 8m at the north-east corner of the WRFC site.  
              - There are sharp 1.5-2.3m level changes along the western, southern and eastern edges of the existing | Medium | Medium | Low |
rugby pitch area which is at a level lower than the surrounding ground.

<table>
<thead>
<tr>
<th>Vegetation</th>
<th><strong>ABPS site</strong></th>
<th><strong>WRFC site</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• B1013 road side vegetation on embankments to east and west of road. Although there are gaps within vegetation along the east of B1013, it reads as a single block. Additional hedgerow to east of Cherry Orchard Lane on embankment to rugby ground.</td>
<td>• Sparse vegetation on earthworks within former brickworks on the site's eastern boundary.</td>
<td>• Trees and scrub along the northern boundary on edge of the river Roach.</td>
</tr>
<tr>
<td>• Cherry Orchard Farmhouse property boundary includes dense, tall conifer hedges and mature trees.</td>
<td>• A block of scrub, trees and pasture adjacent to the eastern site boundary, outside of the site.</td>
<td>• Shrub boundary hedge on eastern boundary.</td>
</tr>
<tr>
<td>• A dense conifer hedge surrounds the Kent Elms Tennis Club on the site side, including a TPO tree. No other vegetation on southern boundary to soften interface with the existing Aviation Way Industrial Estate.</td>
<td>• Sparse vegetation on earth works within former brickworks adjacent to the western portion of the northern site boundary.</td>
<td>• No vegetation along its southern, shared boundary with the ABPS site.</td>
</tr>
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</table>

<table>
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<th>Historic assets</th>
<th><strong>ABPS site</strong></th>
<th><strong>WRFC site</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Grade II listed Cherry Orchard Farmhouse in western portion of ABPS site (private property, excluded from site)</td>
<td>• Four WWII pill boxes, two of cantilever design.</td>
<td></td>
</tr>
</tbody>
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<th><strong>WRFC site</strong></th>
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<td>• Eastern portion of the site is currently arable. A public footpath follows the field's edge inside the site.</td>
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<td>• Arable with river along its northern boundary and public footpath linking from the Rochford Hundred Golf Club to Aviation Way.</td>
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<td>• Western portion contains the amenities of the Westcliff RFC clubhouse, car park and sports pitches.</td>
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<td>• B1013, Bridleway (BR) 48 and Cherry Orchard Lane both run north-south in the western portion of the site. The B1013 and BR48 links Southend with areas to the north. Cherry Orchard Lane provides access to Cherry Orchard Farmhouse and properties north of the site.</td>
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### Public Access

- B1013, BR48, and Cherry Orchard Lane link areas north and south of the site and Cherry Orchard Lane also provides access to Cherry Orchard Farmhouse.
- Footpath (FP) 36 crosses the ABPS site from Cherry Orchard Lane beside Cherry Orchard Farmhouse to the site’s south-eastern corner where FP40 joins it.
- FP40 runs along the eastern boundary of both sites.
- These footpaths and bridleway are part of the wider PRoW network that link the site with Rochford, Cherry Orchard Jubilee Country Park, Hawkwell via the Roach Valley Way and Southend-on-Sea.

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<thead>
<tr>
<th>High</th>
<th>High</th>
<th>High</th>
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### Landscape Character

5.6 There are two relevant landscape character assessments that encompass the site. These are considered below.

5.7 Effects on landscape character are both direct i.e. on the character area/landscape type that the site is located within, and indirect i.e. changes to characteristics that occur beyond the boundary of a character area/landscape type.

### National Character Areas

5.8 Natural England divided England into 159 distinct National Character Areas (NCAs) that define the landscape at a national scale. The site is located within NCA 81: Greater Thames Estuary. In the vicinity of the site, it is encompassed by higher ground within 1km of the site to the north and south, which is identified as NCA 111: Northern Thames Basin. See Appendix 4, Figure 4 Landscape character typology.

5.9 NCA 81 forms the eastern edge of the London Basin and the coastlines of south Essex and north Kent. It encompasses the "predominantly remote and tranquil landscape" between the North Sea and the rising inland ground of, in the vicinity of the site, NCA 111: Northern Thames Basin. In the vicinity of the site, NCA 81 extends inland along the lower elevations of the River Roach valley to Rayleigh, approximately north of the Southend Arterial Road (A127) and south of Ashington. NCA 111 follows the ridges between the Rivers Blackwater, Crouch, Roach, and the Thames.

5.10 The profile of NCA 81 notes that “there is a marked contrast between the wild and remote coastal marshes, and the industrial and urban developments which are highly visible in the low-lying landscape.” It recognises that rising sea levels due to climate change are a threat to the coastal areas of the NCA, and thus identifies a key challenge to the area as being the “accommodation of increasing development pressure in the area with the protection and enhancement of the natural landscape and its internationally important coastal habitats and species”
5.11 Key characteristics of NCA 81, as relevant to the landscape in the vicinity of the site, include (refer to Appendix 2 for the full profile):

- Predominantly flat, low-flying coastal landscape where extensive open spaces are dominated by the sky.
- Open mosaic habitats on brownfield sites support nationally important invertebrate assemblages and key populations of rate invertebrate species.
- Distinctive landscapes of coastal military heritage including Napoleonic military defences and 20th century pillboxes.
- Highly urbanised areas within London and on marsh edges subject to chaotic activity of various major developments including ports, waste disposal, marine dredging, housing regeneration, mineral extraction and prominent power stations plus numerous other industry related activities.
- Increasing development pressures around major settlements and especially towards London, with urban, industrial and recreational sites often highly visible within the low lying marshes.
- Lack of major settlements with the result that there are no particular local vernacular styles and building materials associated with this NCA.

5.12 The sites are located towards the inland edge of NCA 81. For this reason, while the topography of the sites exhibit the relatively flat characteristics of the NCA, especially when considered in the context of the rising ridges of NCA 111: Northern Thames Basin, there is weaker evidence of a coastal influence on the sites. The landscape in the vicinity of the site is more typical of developed areas already existing in NCA 81 (such as Rochford, the Aviation Way Industrial Estate and Southend Airport) rather than the more remote, tranquil areas of the coast and marshland areas of this NCA. This is especially true of the ABPS site that is adjacent to Aviation Way Industrial Estate and includes the existing rugby club and pitches. The WRFC site has more rural characteristics as it is bounded to the north by the river Roach and surrounded by arable fields to the north, east and south. The sites’ landscape character is also strongly influenced by its setting in relation to the rising ground of NCA 111: Northern Thames Basin which, in the wider vicinity of the site, are well-wooded ridges.

5.13 The profile for NCA 81 a number of environmental and landscape opportunities, several of which apply to the sites and proposals. One of the Statements of Environmental Opportunities include, “Encourage a strategic approach to development that is informed by and makes a positive contribution of local character, incorporates green infrastructure which provides ecosystem services where they are needed most, and promotes recreation and addresses climate change, while maintaining important open mosaic and coastal habitats, and historic and geological features.” Examples given to achieve this include:
- Sustainable management of water resources and measures to reduce adverse impacts on water quality in the future, including the use of sustainable urban draining systems.
- Planting sustainably managed broadleaved woodland, and potentially miscanthus, to screen new and existing urban and industrial developments.
- Incorporating features making a positive contribution to biodiversity and climate change, and increasing the areas of green space in more developed parts of the estuary through initiatives such as Green Grids.
- Limiting development, including increases in light and noise pollution, in more remote parts of the NCA that currently score highly for tranquillity.

5.14 Landscape opportunities are also identified. These include:
- Protect the open spaces and expansive skylines from intrusive development
- Protect the area's rich historic and archaeological associations, including 20th-century pillboxes, and improve interpretation and promotion of these assets.
- Protect key open mosaic habitats and species on brownfield sites through site protection, mitigation and habitat creation.
- Plan to create new landscapes that include sustainably managed broadleaved woodlands that provide a setting to urban areas, to significantly enhance landscape character and help to protect the tranquil and open character of the estuary.
- Plan strategic and local networks of green infrastructure as part of ongoing development to make a positive contribution to climate change, biodiversity, geodiversity and recreation within urban areas of the NCA.

5.15 Climate change is identified as a main ‘driver for change’ in this NCA due to sea level changes affecting coastal, estuary and marsh habitats, geomorphology and increased pressure on coastal defences. Climate change may also affect arable landscapes, enabling new species and/or double cropping. Most applicable to this application’s proposals is how climate change will affect the areas within the NCA with an urban nature, by “increasing demands on flood management and water supply. Green infrastructure plays an important part in planning for this and other factors such as cooling the urban heat island effect.” Other key drivers include:
- New industrial complexes and their ancillary structures put growing pressures on the landscape, and would be particularly visible within flat estuary landscapes.
- Major port developments and other nationally important infrastructure projects, especially in the London area.
- New planting to re-establish tree and shrub cover around farmsteads and other sites on areas of higher ground may help to conserve the open character of the estuary.

5.16 **NCA 111: Northern Thames Basin** is a diverse area extending from Hertfordshire eastwards to the Essex coast. It includes the suburbs of North London and towns and cities including St Albans, much of Southend-on-Sea, and Colchester. It is separated from the North Sea and Thames Estuary by a narrow band of land of NCA 81: Greater Thames Estuary. There are four distinct areas identified within the NCA. ‘Essex wooded hills and ridges’ is most applicable to the areas in the vicinity of the site. Other areas are the Hertfordshire plateau and river valleys, London Clay lowlands and Essex heathland.

5.17 Key characteristics of NCA 111 as relevant to the landscape in the vicinity of the site include: (refer to Appendix 2 for the full profile)

- The landform is varied with a wide plateau divided by river valleys.
- A layer of thick clay producing heavy, acidic soils, resulting in retention of considerable areas of ancient woodland.
- The diverse range of semi-natural habitats include ancient woodland, lowland heath and floodplain grazing marsh and provide important habitats for a wide range of species including great crested newt, water vole, dormouse and otter. The pattern of woodlands is varied across the area and includes considerable ancient semi-natural woodland. Significant areas of wood pasture and pollarded veteran trees are also present. Grasslands are characteristic of the river valleys throughout.
- The medieval pattern of small villages and dispersed farming settlement remains central to the character of parts of Hertfordshire and Essex. Brick-built dwellings are characteristic from the late 17th century onwards. Prior to this dwellings and farm buildings tended to be timber built with weatherboarding, now mainly painted white but traditionally back or tarred, and whitewashed plaster walls.

5.18 The commutability between this NCA and London has put increased pressure on the area in terms of extra housing developments, schools, etc., with a consequential reduction in tranquillity. However, tranquil areas can still be found in areas, including Essex, where the more dispersed settlement pattern is broken by arable land and semi-natural habitat. Arable agriculture is a large industry. Better quality soil is found in areas that contain alluvial deposits from the Thames and other rivers in the area as they formed and changed position over time.

5.19 The ridges to the north and south of the Roach, to the west of the site, are typical of NCA 111, particularly of the areas described as ‘Essex Hills and Ridges’ which are characteristically well wooded. These characteristics are demonstrated on the ridges in the vicinity of the sites, for example the higher elevations of the northern ridge includes Primrose Wood, The Scrubs and Gustedhall Wood. The
contrast in topography and elevations of these two NCAs mean they have a strong connection with one another and their topographical characteristics, which are exhibited particularly strongly by the site and its surrounding areas, rely on the contrast with the adjacent NCA. For this reason, proposals which affect the landscape character of one area and thus the setting of the other could have an indirect impact.

5.20 While recognising the pressure for continued urban expansion and regeneration including industrial development, the NCA identifies opportunities that these could bring relating to green infrastructure. These including: maintaining the diverse habitats and appearance of the landscape while shielding the wider landscape from future developments and infrastructure, improving the well-being conditions and recreation for local communities such as improving green space quality, provision and public access to them and the sense of tranquillity that it brings, and increasing tree cover and new planting to establish a coherent and resilient network of trees and habitats. The NCA also identifies the challenges that climate change may bring, including pressure on water availability and habitat fragmentation, and notes that future mitigation needs to ensure these factors are considered when developments occur.

**Essex Landscape Character Assessment (2002)**

5.21 At the county level, the sites are located within G3: South Essex Coastal Towns, a Landscape Character Area within Landscape Character Type G: Urban Landscapes. The sites are c.1.2km west of F2: Crouch & Roach Farmland, an area within type F: Coastal Landscapes. See Appendix 4, Figure 4 Landscape character typology, and refer to Appendix 3 for the full profile of G3).

5.22 As well as built up areas, G: Urban Landscapes include mixed-use urban fringes around the settlements. They typically have a historic core which, often along with former villages, have been enveloped by very large areas of 20th century residential and commercial development. They are often associated with gently undulating landforms of river valleys or coastal estuaries, and the visual dominance of an urban skyline. Integral open spaces within urban areas are important for recreation and wildlife. Two key issues facing areas within G: Urban Landscape are identified as: development (including settlement extensions, commercial warehousing and green open space networks), and land management/biological diversity issues (relating to countryside within urban areas and brownfield sites). Both issues are relevance to the proposal's site.

5.23 The Essex LCA describes G3 as “an area of very mixed character, but unified by the overall dominance of urban development, with frequent views of an urban skyline”.

5.24 Key characteristics for G3 are described in the Essex LCA. These are shown in Table 5.2 below. Generally, the key characteristics described for the Landscape Character Area are relevant and applicable to the site and its vicinity.
5.25 The Essex LCA states that G3 “the Roach Valley is largely undeveloped. However, many residential and industrial edges with areas of adjacent open arable farmland are hard and abrupt with few hedgerows and woodlands remaining”. This statement is strongly applicable to the southern boundary of the site which is at the interface between arable farmland of the relatively undeveloped Roach Valley, and the Aviation Way Industrial Estate on the northern edge of Southend. The edge of the existing industrial estate is sharply defined by frontages of buildings facing an arable field and rugby pitches. In the vicinity of the site there are other urbanising influences such as the rugby club as well as horse paddocks divided by wire fences.

5.26 G3 is noted to have a “very varied topography”, with examples of, as in the vicinity of the site, “flat low lying land south-east of Basildon, around Canvey Island and Rochford…and a moderate to steep escarpment south and south-east of Basildon.”

5.27 In terms of settlement form, the Essex LCA describes “major towns spread over gently undulating or flat land, but locally extend up hillsides and over prominent ridgelines and hillsides as well”, and Southend-on-Sea’s dense urban form has “a dominant grid pattern of streets running parallel and at right angles to the contours”. While these descriptions best apply to Rayleigh, Hockley and Wickford, as well as Southend, the urban forms closest to the site are on relatively flat, low lying land within the river Roach’s valley bottom. Indeed, London Southend Airport is located within 300m south-east of the site. West of the site, ridges of the Roach Valley rise to the north and south. These are notably free of development. However, the Eastwood area of Southend, south of the Roach Valley, slopes down to the Prittle Brook and illustrates the characteristic settlement pattern.

5.28 A number of landscape features identified as characteristic of G3 are present within or close to the vicinity of area. These include: pylons and overhead lines, including between Wickford and Rayleigh, and Rayleigh and Rochford, Southend Airport and a number of golf courses.

5.29 The Essex LCA describes the condition of the landscape and provides an overview of the trends in terms of future change. It identifies the condition of G3 as “very mixed”, where the condition of woodlands and hedgerows is moderate, but poor quality intrusive commercial ‘shed’ development is common. The LCA notes that the 20th century was a significant time for change with massive expansion of urban areas, and is likely to be a significant ongoing trend in the future. As well as this, pressure for recreation is also likely to be considerable. Areas where the traditional landscape character survives well will need particularly protection from landscape or development change.

5.30 The Essex LCA also assesses the landscape character areas’ landscape sensitivity to various types of development i.e. the degree to which an area can accommodate a particular change without adverse consequences to its character. These sensitivity ratings have been used to inform this LVIA. Types of development which the landscape character areas’ landscape sensitivity were assessed against and applicable to these proposals are: ‘major urban extensions (>5ha)’ and ‘commercial/warehouse
estate/port development’, both of which G3 is assessed as having moderate sensitivity to. Using the Essex LCA’s sensitivity criteria, these means that in G3, such developments “may be capable of being absorbed. Developments to be considered on their individual merits”, and that while there is potential for the type of development to cause adverse impacts to the landscape character's condition, strength or its distinctive physical and cultural components, areas of moderate landscape sensitivity, “there may be more opportunities to overcome these through appropriate siting, design and other mitigation measures”.

5.31 The Essex LCA assesses G3 as having moderate sensitivity to large scale developments and commercial/warehouse development due to the proposal's potential adverse impact on “visually exposed steep escarpments” and “integrity of woodland and hedgerow field pattern.” “High intervisibility on marshlands” also affects the G3’s ability to accommodate development in certain parts of the character area. In addition, large scale developments are noted to potentially threaten the “integrity of major green corridors and spaces” and cause coalescence of urban areas. The moderate level of landscape sensitivity also reflects the observation of poor condition of some arable farmland, particularly at its edges and due to intrusive pylons and transportation routes.
### Table 5.2: Landscape Character

<table>
<thead>
<tr>
<th>Essex LCA Landscape Character Areas</th>
<th>Relevant Key Characteristics and Condition</th>
<th>Landscape Sensitivity: Value of receptor (landscape character area)</th>
<th>Landscape Sensitivity: Susceptibility to change (large scale/commercial development)</th>
<th>Overall Landscape Sensitivity</th>
</tr>
</thead>
</table>
| G3 South Essex Coastal Towns       | Key characteristics, as relevant to the site its surroundings:  
  - Large areas of dense urban development  
  - Strongly rolling hills with steep south and west facing escarpments covered by open grassland or a mix of small woods, pastures and commons  
  - Large blocks of woodland  
  - Narrow and broader areas of gently undulating farmland with remnant hedgerows separating towns  
  - Complex transport network  
  - Pylons visually dominate farmland between Wickford and Rayleigh, and Rayleigh and Rochford  
  Condition:  
  - Poor quality intrusive commercial ‘sheds’ common in area  
  - Woodlands and hedgerows in moderate condition  
  Trends for Change:  
  - Ongoing urban development pressure  
  - Areas of surviving landscape character, e.g. Upper Roach Valley, need protection from change  
  - Recreational pressures  
  Landscape sensivities:  
  - visually exposed steep escarpments  
  - integrity of woodland and hedgerow pasture fields and field patterns  
  - high intervisibility on marshlands  
  - poor condition of some arable farmland  
  - coalescence  
  - integrity of major green corridors and spaces | Medium | Medium | Medium |

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6  VIEWS

6.1 Appendix 4, Figure 5 Viewpoint locations illustrates the position of the selected and agreed representative viewpoints; these encompass a range of geographical locations and receptor types, including the worse-case scenario of the views available. These have been assessed using the methodology described in Appendix 1: Methodology.

6.2 The main development area of the ABPS site has a limited zone of visibility to areas outside of the site. This is largely a result of the screening properties of the roadside buffer planting along the B1013 and vegetation along the Roach River, which partially screen long and short distance views from the west and north. The existing units on the northern edge Aviation Way Industrial Area have open views into the site but, in turn, block views from areas further south. The sloping valley sides and rounded tops of the ridges help obscure views from along ridges such as from the public rights of way between the Eastwood residential area of Southend the B1013, and from Hawkwell to Rochford. Other factors include the limited number of residential properties in the vicinity. However, views to the B1013 roadside buffer planting are relatively open from the Cherry Orchard Jubilee Country Park, save for a woodland block in the park's south and scattered shrubs and recently planted trees elsewhere. The rugby goalposts and floodlighting columns are likely to be visible from a wider area. Although their narrow diameters make them relatively easily visible at longer distances, they would be more widely visible in night time views when the lights are powered on. The proposed floodlighting would make use of new technology and luminaires that would better limit light spillage. (Refer to the lighting report accompanying the WRFC site planning application for further details).

6.3 The viewpoints considered can be split into three broad areas:

- close proximity views within or adjacent to the sites.
- Medium and long distance views from the west. These are from the Cherry Orchard Jubilee Country Park and the Roach Valley Way (a promoted long distance footpath). Potential for views from residential properties adjacent to the Country Park have been considered but these are largely blocked by vegetation and topography, or commercial development is already located between them and the proposal sites.
- Longer distance views from the north and east. These include views from areas of Hawkwell, Rochford and Rochford Hundred Golf Club.

6.4 Views from points further south are heavily influenced or obscured by the existing buildings in the Aviation Way Industrial Estate and therefore have not been considered.

6.5 Table 6.1 includes details of the representative viewpoints; see Appendix 4, Figure 5 Viewpoint locations for receptor locations and Appendix 4, Figures 8 to 19 for accompanying photographs.
### Table 6.1: Representative viewpoints

<table>
<thead>
<tr>
<th>Viewpoint location</th>
<th>Receptor Type</th>
<th>Description</th>
<th>Visual Sensitivity: Value of receptor</th>
<th>Visual Sensitivity: Susceptibility to change (large scale / commercial)</th>
<th>Overall Visual Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewpoint 1: Junction of bridleway (PRoW) and private access road within Cherry Orchard Jubilee Country Park</td>
<td>Users of the Country Park, other bridleway users, Private property road access</td>
<td>Illustrates a typical long distance view from the Country Park on the Roach Valley's north-facing slope towards the sites. Foreground comprises hedge vegetation, paddock fences and the private access track leading to Blatches Farm. View illustrates the screening properties of multiple intermediary field hedges between the viewpoint and the sites. Glimpses through vegetation of street signs, lamp columns as well as occasional large vehicles on the B1013. The sites are located in the centre of the view but well screened by vegetation in summer and the southern portion is blocked by foreground woodland in the Country Park. Backdrop to the viewpoint, beyond the sites, comprises vegetation (Lombardy poplars on the Rochford Hundred Golf Course are identifiable) with occasional rooftops and pylons of Rochford visible above the tree line. Rochford Community Hospital chimney is a prominent built feature above the trees on the skyline. Little other evidence of the urban edge e.g. Aviation Way Industrial Estate, despite its close proximity.</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

<p>| Viewpoint 2: Informal path within Cherry Orchard Jubilee Country Park | Users of the Country Park | Illustrates a typical long distance view from the lower elevations of the Roach Valley in the Country Park, towards the sites. Foreground of rough grass, shrubs, recently planted trees, and a block of woodland to the south (right side of view). River Roach is left of view, marked by occasional trees and change between rough grass of Park to arable land north of the river. The sites are in the centre of the view but strongly filtered by intervening vegetation and a woodland to the south. Glimpses of street lamps and occasional vehicles on the B1013. The upper portions of trees behind the sites are visible through and above vegetation in front, as are the Rochford Community Hospital chimney and the Church of St Andrew, Rochford's tower. Little other evidence of the urban areas of Southend or Rochford, including Aviation Way Industrial Estate. | Medium | High | High |</p>
<table>
<thead>
<tr>
<th>Viewpoint location</th>
<th>Receptor Type</th>
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<th>Overall Visual Sensitivity</th>
</tr>
</thead>
</table>
| Viewpoint 3: Point on Roach Valley Way (long distance public footpath) beside the River Roach within the Cherry Orchard Jubilee Country Park | Pedestrians, Long distance footpath walkers Users of the Country Park | • Illustrates a typical view towards the sites from the Roach Valley Way beside the river, west of the site.  
• Foreground consists of rough grass, shrubs and recently planted trees within the Country Park. The footpath follows the route of the river on its south side. The river is hidden by dense vegetation including willow.  
• Skyline is vegetation within the Country Park and buffer planting lining the B1013.  
• The sites are in the middle of the view, heavily screened by foreground vegetation. Floodlighting columns over the rugby pitches are visible above the vegetation.  
• No visual evidence of the urban edge, despite its relative proximity. | Medium | High | High |
| Viewpoint 4: Residential housing on Fastnet road and bridleway on southern edge of Cherry Orchard Jubilee Country Park (context photo) | Users of bridleway within the Country Park Residential | • Views eastwards from the bridleway along the southern edge of the Country Park towards the sites are generally obscured by foreground vegetation. Typical extrapolated views from ground floors of the housing and a path to their east are generally obscured by foreground vegetation, including gorse.  
• Hedgerow on southern edge of the Country Park additionally screens north-eastward views towards the sites from the housing, path and bridleway.  
• Occasional glimpses through vegetation and longer distance views from upper storeys towards the sites are in the context of recent commercial development: construction between the housing and the B1013. | Medium | High | High |
| Viewpoint 5: Point on the Roach Valley Way (long distance public footpath) on the south-facing valley slope's edge | Pedestrians | • Illustrates view south-eastwards towards the sites from the Roach Valley Way PRoW as it rises up the north-facing slope towards the ridge top.  
• Site is in middle of view at lower elevations in valley bottom, in front of and to the right of the Lombardy Poplars  
• A foreground of sloping grass paddocks with vegetation at lower elevations behind topography. Recent planting immediately in front of public footpath.  
• Lombardy poplars located on the Rochford Hundred Golf club north-east of the sites, are | Medium | High | High |
### Viewpoint Location

#### Viewpoint 6:
- **Receptor Type**: Pedestrians, other users of restrict byway
- **Description**: Illustrates a typical long distance view towards the site from areas north of the site at elevations above the Roach Valley bottom.
- **Visual Sensitivity**: Medium
- **Overall Visual Sensitivity**: High

- Backdrop is a distant vegetated landscape.
- Urban centres of Southend and Rochford not apparent in view, although some urban features are visible in the background (industrial units within Purdeys Industrial Estate), largely screened and rooflines soften by vegetation framework, all below the horizon.
- Backdrop is a distant vegetated landscape.
- Urban centres of Southend and Rochford not apparent in view, although some urban features are visible in the background (industrial units within Purdeys Industrial Estate), largely screened and rooflines soften by vegetation framework, all below the horizon.

#### Viewpoint 7:
- **Receptor Type**: Pedestrians, Road users, Residential
- **Description**: This viewpoint represents the extrapolated view from housing on this section of Southend Road, and illustrates the long distance view to the site from residential areas of Rochford south of the Roach where views to the site are across the Southend Road, railway to Southend, and Southend Airport airfield.
- **Visual Sensitivity**: Medium
- **Overall Visual Sensitivity**: High

- Street trees, electricity wires and lamp columns along Southend Road are in the view’s foreground. A narrow field separates the road features from the Chelmsford-Southend railway line. This is visible along with its embankment, overhead gantry and wires. These are all prominent features.
<table>
<thead>
<tr>
<th>Viewpoint location</th>
<th>Receptor Type</th>
<th>Description</th>
<th>Visual Sensitivity: Value of receptor</th>
<th>Visual Sensitivity: Susceptibility to change (large scale/commercial)</th>
<th>Overall Visual Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various structures associated with Southend Airport are clearly visible against the sky, including the security fence, control tower, lamp columns, terminal building, and standing aircraft.</td>
<td>Pedestrians</td>
<td>View from public footpath through Rochford Golf Club towards the site and Southend Airport.</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Buildings and property boundaries to right of view mark the western extent of Rochford in the vicinity. Garden boundary vegetation block all views to the sites from these.</td>
<td>Private golf club members</td>
<td>Landscaped golf course, including bridge crossing the River Roach in foreground, earthworks and tree and shrub planting throughout the view, as well as some mature vegetation associated with the river.</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>The upper portions of Lombardy poplars at Rochford Hundred Golf Course are visible above rail embankment in the background.</td>
<td></td>
<td>Golf course’s local undulations and vegetation block and screen most views to areas beyond the golf course. Some aircraft hangars at Southend Airport and commercial shed-style buildings at the existing Aviation Way Industrial Estate are visible in the distance, below the level of the tops of the foreground vegetation, which remains the dominant feature.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any available views to the sites, located in the centre of the view, would be in the context of the foreground transport infrastructure and middle distance airfield structures.</td>
<td></td>
<td>Glimpses of development at the site may be visible in winter months or beneath the canopies of trees on the golf course.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viewpoint Location</td>
<td>Receptor Type</td>
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<tr>
<td>Viewpoint 9</td>
<td>Road users</td>
<td>Illustrates a typical view towards the site from points north of the site at lower elevations in the Roach Valley. Foreground is arable field with the Roach Valley Way public footpath cutting diagonally across it to the south-west. Vegetated field boundary to the left of the footpath follows the River Roach along the northern boundary of the WRFC site. Garden boundaries to left of view mark western extent of Rochford. The WRFC site and the eastern, arable field of the ABPS site, is partially visible through the foreground field boundary vegetation. The central hedgerow in the ABPS site screens views of existing rugby pitches, but goalposts and flood lighting are visible above it. Visibility will increase during winter. Glimpses of buildings along the northern edge of the existing Aviation Way Industrial Estate are available in the middle distance. Again, visibility is likely to increase during the winter months.</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Field access from Hall Road and Roach Valley Way (long distance public footpath)</td>
<td>Pedestrians</td>
<td>Residential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viewpoint 10</td>
<td>Pedestrians</td>
<td>Clear, open and expansive views across the site towards the central hedge. Foreground and middle ground comprise arable fields. Floodlights over the rugby pitches and goalposts are visible above it. The floodlights rise 1 to 1.5x above the height of the background vegetation. Trees and hedgerow vegetation follow the River Roach on right side of view to form the backdrop to northern boundary. Shrub hedge forms eastern boundary of site at left side of view. Clear and open views available of the existing industrial estate with mix of building types south of the site. Glimpses to vegetation south of the existing industrial estate. Upper storey of the Brickfields Cottages is visible above boundary vegetation.</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Viewpoint Location</td>
<td>Receptor Type</td>
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</tbody>
</table>
| Viewpoint 11        | Pedestrians   | - Clear open, close proximity views comprising an arable field in the foreground and the central hedge that filters views to the clubhouse and pitches in the middle ground. Goalposts and floodlights of existing rugby club are visible above and in gaps within this hedge, rising twice the height of the hedge and background vegetation.  
- Boundary vegetation to the north forms backdrop in middle and right side of view.  
- Vegetated slopes of land gently rising from valley floors are visible in the distance, partially screened by B1013 roadside vegetation and hedge within the site.  
- Clear open views to the buildings on the northern edge of Aviation Way Industrial Park. These include brick buildings, office blocks and commercial shed structures up to three storeys high. These limit views further southwards.  
- Cherry Orchard Farmhouse’s roof and its gable end’s upper portion, and Brickfield Cottages are visible above boundary vegetation. | Medium                              | High                                    | High                     |
| Viewpoint 12        | Residential   | - Representation of an extrapolated view from Cherry Orchard Farmhouse in the western portion of the ABPS site.  
- House is accessed from B1013 via Cherry Orchard Lane, which is lined by hedgerow and trees and buffer planting to its west.  
- Site boundary surrounds property, enclosed by garden boundaries consisting of well-established trees and conifer hedges and, on the western edge, by a wall with access.  
- Ground floor views are almost entirely screened by vegetation except partial views to the south towards the tennis courts and clubhouse, which are screened by conifer hedges, and rugby pitches and two storey rugby clubhouse. Where views out are available, existing buildings at the Aviation Way Industrial Estate are visible above the sports grounds.  
- Some close proximity views are available from localised first floor windows over its property boundaries. The eastern façade would have the most open views across the ABPS site. However, there appears only to be | Medium                              | High                                    | High                     |
7 PROPOSED DEVELOPMENT AND LANDSCAPE STRATEGY

Proposed development

7.1 The proposed Airport Business Park Southend development and the associated relocation of Westcliff RFC are described in the Design and Access Statements and drawings accompanying the planning applications.

7.2 The planning application description for the ABPS development is:

“Outline application with all matters reserved other than access for the development of land at Cherry Orchard Way to create a business park to comprise use classes B1, B2 and ancillary uses to include A1, A3, A4, C1 and B8, landscaping of access road, and demolition of the existing rugby club.”

7.3 The planning application description for the relocated Westcliff Rugby Club is:

“Hybrid application: Full planning permission for re-provision of rugby pitches and Outline planning permission for the erection of club house, provision of car parking, floodlighting and landscaping with all matters reserved.”

7.4 It should be noted that the ABPS and WRFC applications are outline and hybrid applications respectively. All matters are reserved, save the access from Cherry Orchard Way and the re-provision of the rugby pitches. As such, the proposals are of an illustrative nature.

Proposed planting

7.5 The proposed development would be accompanied by a comprehensive landscape scheme that would contribute towards the creation of an adaptive environment and help support local biodiversity through increasing the habitats available by:

- prioritising the enhancement of habitats that are characteristic of the local area, as informed by ecological surveys; planting would incorporate a high percentage of native hedges and shrubs
and would be selected (in consultation with Rochford District Council) so as to be appropriate to site conditions and resilient to drought in order to minimise the demand for artificial irrigation

- retaining the existing hedgerow that follows a line north-south across the site
- providing green corridors for pedestrians and cyclists that would dissect the site north to south and east to west to provide links to the wider setting as well as forming internal pedestrian routes
- green corridors would be supplemented by generous landscaping and tree planting to mitigate the impact of the new surrounding buildings and car parking
- planting of trees throughout the site; the spine route will resemble a ‘tree-lined boulevard’ including grass verges
- introducing a range of grassland/meadow habitats with a maintenance regime that supports their establishment and development
- managing and supplementing the existing planting belts on Cherry Orchard Way boundary
- tree planting along the northern and eastern boundaries of the ABPS site

7.6 The detail of the proposed planting would be agreed as part of the reserved matters.

8 EFFECTS ON LANDSCAPE-RELATED DESIGNATIONS

8.1 There are several footpaths that will be directly affected by the proposals. FP36 would need to be realigned in order to ensure the pedestrian connection remains intact between the west of Rochford, eastern portion of Aviation Way, and Cherry Orchard Jubilee Country Park. The access and landscape strategies for the indicative ABPS scheme retains the footpath in a slightly re-aligned landscaped green corridor.

8.2 There would be no other direct effects on any other landscape-related designation within the site. (Refer to the relevant report accompanying the planning application for further details and assessment of effects on designations including the Metropolitan Green Belt, Tree Protection Orders and historic and cultural assets.

8.3 There are other landscape-related designations in the vicinity, including the Cherry Orchard Jubilee Country Park, the Upper Roach Valley (recognised in the Rochford District Allocations Plan 2014 at Policy ELA3), and the Roach Valley Way promoted long distance footpath that could be affected indirectly by changes at the site that alter views experienced from within the designation/from the footpath, and which therefore alter their setting. The Visual Impact Assessment considers the potential visual effects of the proposed development from points in Cherry Orchard Jubilee Country Park and on
the Roach Valley Way, e.g. Viewpoints 1, 2, 3 and 4, and Viewpoints 3 and 9 respectively. Viewpoints 
1, 2, 3 and 5 are representative of views from the Upper Roach Valley. Refer to Section 10.

8.4 It is considered that the proposed development would, in time, have a residual effect of Low magnitude 
on the character of Roach Valley Way where it crosses the field immediately to the north of the WRFC 
site. This judgement has been reached by balancing the introduction of further urbanising elements in 
the view (buildings on the APBS site, the rugby club house and floodlighting columns) against the 
presence of the existing vegetation along the line of the River Roach, the currently available glimpses 
of buildings on Aviation Way, and the introduction of significant areas of new planting within the ABPS 
site that would, in future years, help integrate the proposals into the surrounding landscape.

8.5 The Roach Valley Way has a High landscape sensitivity and thus there would be an effect of Minor 
Moderate significance. The magnitude of the change is likely to increase at night, when the lighting 
associated with the floodlit rugby pitches would be particularly visible; however, it is unlikely that 
footpath would be in use during those hours.

8.6 Perceptions of the proposed developments from within the Cherry Orchard Jubilee Country Park would 
be limited, and available only from localised points. In time, these effects would be further diminished 
as the young planting on the eastern edges of the Country Park becomes established. It is considered 
that there would be a residual effect on the character of the Country Park of Minor significance.

8.7 Other landscape-related designations in the wider area, such as the Coastal Protection Belt, do not 
have a visual connection with site and therefore would not experience direct or indirect effects.

9 EFFECTS ON LANDSCAPE FEATURES AND LANDSCAPE CHARACTER

Effects on Landscape Features

Construction phase effects

9.1 Since these are predominantly outline applications, details of the construction phases would be agreed 
as part of the reserved matters; it is likely, however, that they would occur over a limited time and 
therefore any effects during this period could be regarded as short term.

9.2 The effects on landscape features would be an incremental change towards those experienced on 
completion, as the proposed development is progressively constructed and built-out. The construction 
phase would see the introduction of temporary features that could have a nominal influence beyond 
the site, construction machinery, contractor’s compounds, scaffolding, stockpiling, delivery vehicles, 
and works to create the new access and highway changes, etc., with less of an effect during the early 
periods of the construction phase.
9.3 Although there would be adverse effects on landscape character, largely as a result of the introduction of brightly coloured machinery, cranes and over tall temporary structures, material stock piles, and moving elements, these are likely to be transient in nature and would be unlikely to be present for the full construction period.

9.4 Consequently, with the exception of the indirect effects arising from the introduction of the tallest machinery, there would be little or no greater influence on the character of the wider landscape during the construction phase than that predicted upon completion.

Completion

9.5 As expected with any large-scale development, the sites themselves would experience wholesale changes in landscape character. The ABPS site from a part rugby club (with associated car parking, club house, etc.) and part arable field to Business Park, and the WRFC site from arable field to rugby club.

9.6 The nature of the site’s existing topography is such that only nominal earthworks would be required. The existing change in level on the ABPS site between the western field and the eastern field, which accommodates the hedge, would be retained, and access between them would be achieved by grading of the spine road.

9.7 There would be little or no change to vegetation bounding the two sites with the exception of the western edge of the ABPS site. Here, localised relatively recent highway planting (a mix of native trees and shrubs, some 5-7m high, with occasional dead elm) would be removed in order to accommodate the proposed new junction on Cherry Orchard Way. Further to the south, a short section of the vegetation between Cherry Orchard Way and the site would be removed to open up views into the business park, and in particular the plaza at the commencement of the realigned public footpath. The north-south hedge that currently divides the rugby club field from the eastern field in the ABPS site would be retained, with localised vegetation loss to accommodate the proposed spine road.

9.8 Changes to public access would be limited to the realignment of the public footpath through the ABPS site via the use of green, landscaped corridors.

9.9 Changes to the character of the surrounding landscape would be limited. The relatively limited visual envelope afforded by the sites’ boundary vegetation and the influence currently exerted by adjacent Aviation Way Industrial Estate and nearby London Southend Airport, mean that there would be limited perceptions of change to the character of the wider landscape.

9.10 The proposed ABPS and WRFC sites fall entirely within the Landscape Character Type G: Urban Landscapes, and specifically Landscape Character Area G3: South Essex Coastal Towns. Further, any perceived change in character experienced at points in the surrounding landscape would be limited to receptors within G3: South Essex Coastal Towns. The sites have no visual connections with other
landscape character areas and therefore effects on other areas have not been considered. The magnitude and significance of potential changes to Landscape Character Area G3 are set out in Table 9.1.

9.11 When balancing the potential effects of the proposed development on the character of the surrounding landscape, consideration should be given to comments in the Essex Landscape Character assessment regarding key landscape sensitivities to major urban extensions (i.e. those greater than 5ha) and commercial/warehouse estate type development, as well as identified existing and future threats to LCA G3.

9.12 The character assessment notes LCA G3’s key landscape sensitivities when accommodating larger-scale changes of use. Such sensitivities include “visually exposed steep escarpments”. However, the ABPS site is located at low elevations within the bottom of the Roach Valley and the proposed development would not encroach onto the valley sides where it would have a greater influence on the character of the wider landscape.

9.13 The assessment also notes that LCA G3 is sensitive to “high intervisibility on marshlands”. The site is located away from these areas, and existing vegetation on the boundaries and in the vicinity of the site limit views between the site and other areas, and would thereby reduce the perceived effects of the proposal development.

9.14 The “integrity of woodlands and hedgerow pasture fields” and of “hedgerow field pattern” are identified as having the potential to be threatened by development. While arable fields would be lost to accommodate the proposals, there would be no loss of pasture. The proposals have been designed to retain and safeguard the boundary hedges and the existing field patterns, including the retention of the hedge dividing the east and west field in the ABPS site. The layout of the development would, in part, be informed by the existing field pattern.

9.15 Similarly, “major green spaces/integrity of major green corridors” are identified as sensitive to development. However, the use of land adjacent to the River Roach as a rugby club would not compromise the continuity of the river corridor; there would be an offset of between 75m and 130m between the northern boundary of the WRFC site and the River Roach. The business park design incorporates a number of north-south and east-west green link corridors throughout the site, partly to accommodate the existing public footpath and cycle provision, and partly as a habitat corridor; these would be accompanied by extensive tree, shrub and hedge planting.

9.16 The assessment notes the “Poor condition of some arable farmland at the edges or with intrusive pylons, transportation routes”. The proposed business park, with its associated extensive planting, provides the opportunity to better integrate the northern edge of Southend into the landscape, and provide a better transition between countryside and the urban area than is currently provided by the harsh and exposed frontage of the Aviation Way Industrial Estate.
9.17 It is noted that “Any new development should include strong new woodland hedgerow framework particular where arable farmland is in poor condition”. The proposed development would be accompanied by a comprehensive landscape scheme that includes extensive areas of new planting and hedgerows, as well as management of existing vegetation.

9.18 In terms of past, present and future trends for change, it is noted that “The area has been subject to very significant change in the 20th Century, with massive expansion of urban areas, and urban development pressure is likely to be a significant ongoing trend”. It also notes that “Areas where traditional landscape character survives well, such as the Upper Roach Valley, ... need particular protection from landscape or development change”. The proposed developments would not impinge on the Upper Roach Valley.

9.19 The proposed developments would extend urban features and night light northwards from Southend towards Rochford, so narrowing the sense of openness between the two settlements. Such effects would be balanced against the relocation of the existing floodlight rugby pitches away further away from the Country Park and the use of new technology and luminaires that would better limit light spillage.

9.20 It is considered that during the construction period and at completion the proposed ABPS and the relocated WRFC exert an influence of Moderate significance on the character of LCA G3: South Essex Coastal Towns.

9.21 In time, once the proposed mitigation planting within the ABPS development becomes established and integrates the development into the surrounding landscape, the effect would reduce drop to one of minor significance.

9.22 The assessment judgements are based on the development having a life expectancy of more than 30 years (i.e. it would be a long-term development) and, particularly in terms of the built elements, that it would likely cause permanent changes to the land. In making the judgement, the following factors were considered:

- development at the sites would exert only limited influence on the Roach Valley
- arable land use lost, replaced with the business park associated streetscapes and green corridors and rugby club development
- the characteristics of the landform of the site would be largely unaffected by the proposed development; the level changes between the east and the west sides of the ABPS site would be accommodated without affecting the levels surrounding the site or change the appearance of the land away from a generally level site
- the site is located adjacent to the Aviation Way Industrial Estate; in some close range views and from within the site, the proposed business park would be seen in the context of existing commercial type development
- the proposed landscape strategy which accompanies the scheme should provide a softer, more appropriate, transition between countryside and urban area, as compared to the existing harsh and abrupt Aviation Way
- the proposed landscape strategy would retain the existing field patterns within the sites, with the existing internal hedgerow incorporated into a pedestrian green corridor; those bounding the sites would be unaffected, save the highway planting bordering Cherry Orchard Way.
- the dense buffer planting along the B1013 Cherry Orchard Way on the western boundary of the site would largely remain intact; vegetation would be removed to accommodate the new access junction and associated visual splays, and to open up views into the south-western corner of the site
- the busy B1013 is a notable intrusive feature within this landscape; however, the route of the road provides an important and much valued ‘green corridor’ into Southend; the proposed development would explore opportunities to enhance this green feature through management and/or infill planting
- the River Roach corridor would not be affected by the proposed developments, and an offset would remain between it and the relocated rugby club
- the development would be accompanied by a comprehensive landscape scheme that would incorporate indigenous species, enhance the biodiversity of the area, and create green corridors through the ABPS site
- this is largely an outline application, but it is anticipated that the style and layout of the proposed business park would be designed so as to minimise the visibility of the buildings in wider and longer distance views of the site and the degree to which they would be visible above the existing skyline
- the construction of the ABPS development would be phased over 15 years, and so be incremental in nature. By the time that the final stages are implemented, the landscape planting associated with the early phases would be established and able to provide significant mitigation in terms of integrating the development into the landscape and screening or filtering potential visual effects. It is considered that this piecemeal approach to implementation would make a substantial contribution to managing changes to landscape character and visual amenity
- lighting associated with the ABPS and with the flood lit rugby pitches would exert an influence on the surrounding landscape at night; the significance of such effects would be tempered by the
use of carefully designed lighting scheme and the use of appropriate cut off lighting and limited hours of use, and would be balanced against the effects that are currently exerted by the existing rugby club floodlighting. The proposed floodlighting would be of similar extent to that existing in terms of numbers of columns; however, it would make use of new technology and luminaires that would better limit light spillage.

**Table 9.1: Effects on local landscape types**

<table>
<thead>
<tr>
<th>View/Location</th>
<th>Sensitivity</th>
<th>Description of Effect</th>
<th>Year 1 - Winter</th>
<th>Year 10 - Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCT G3: South Essex Coastal Towns</td>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>See description above</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**10  EFFECTS ON VIEWS**

**Construction phase**

10.1 Since these are predominantly outline applications, details of the construction phases would be agreed as part of the reserved matters; it is likely, however, that they would occur over a limited time and therefore any effects during this period could be regarded as short term.

10.2 The effects on views would be similar to those changes experienced on completion, as the proposed development is progressively built-out and the new features appear. The main visible variation with the operational phase would be the presence of moving construction machinery (particularly taller machinery and/or that working at height), contractor’s compounds, scaffolding, hoarding, temporary material stock piles, delivery vehicles, and works to construct the new access junction.
10.3 The majority of these elements are likely to be transient in nature and would be unlikely to be present for the full construction period, and thus would have only limited visual influence on the surrounding receptors.

10.4 Consequently, with the exception of the introduction of taller cranes or similar lifting equipment, there would be little or no greater influence on surrounding visual amenity during the construction phase than that predicted upon completion.

**Completion**

10.5 As noted at Chapter 6, the site affords a restricted zone of theoretical visibility as a result of:

- the presence of a significant green buffer to the west of the sites
- tree and shrub vegetation along the northern and eastern boundaries
- the vegetation framework in the surrounding landscape, such as field boundaries and landscaped areas within the Cherry Orchard Jubilee Country Park and the Rochford Hundred Golf Club, which create layers of screening

10.6 Views of the proposed developments would be further limited by the accompanying mitigation planting which would block or filter views of the new buildings and help integrate the development into the surrounding landscape framework. As a result, receptors likely to experience visual effects as a result of the proposed developments can be divided into the following broad areas:

- localised views from points on public footpaths adjacent to the site boundaries
- filtered views to the proposals through the site’s boundary vegetation from points in fields adjacent to the site
- longer distance views towards the site from low elevations in the Roach Valley, where proposals have the potential to appear as new features on the skyline
- longer distance views towards the site from areas at higher elevations, principally to the west and north. Although these viewpoints are more prominent, their angle of view from a receptor above the sites means that they would be viewed in the context of vegetation behind and in front of the sites, and thus, generally, the new development would not break the horizon

10.7 From many of the receptors that would experience a view of the site, the B1013 and associated traffic, the Aviation Way Industrial Estate adjacent to the south of the site, London Southend Airport and associated buildings, or other urban features of Rochford or Southend are already detracting features within the view, and proposals would be seen in the context of such elements.

10.8 Except for viewpoints on the boundaries of the site, existing vegetation would be present between the receptor and the new developments, and so the proposed developments would not be in full view but
rather only their upper portions, with the rest filtered by vegetation.

10.9 In time, the proposed planting would reinforce the existing internal and boundary vegetation and so further enhance the filtering and screening properties of the existing planting.

10.10 Table 10.1 below sets out the likely visual effects experienced at each of the agreed representative receptors. See Appendix 4, Figure 6 for the mapped findings of Visual Impact Assessment at year one, and Appendix 4, Figure 7 for year ten.

**Table 10.1: Effects on views**

<table>
<thead>
<tr>
<th>View/Location</th>
<th>Sensitivity</th>
<th>Description of Effect</th>
<th>Year 1 - Winter</th>
<th>Year 10 - Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Size/scale</td>
<td>Duration/Rev.</td>
</tr>
</tbody>
</table>
| Viewpoint 1: Junction of bridleway (PRoW) and private access road within Cherry Orchard Jubilee Country Park | High | - Views towards the proposed developments would be available from the bridleway and access track in the Country Park where it follows the ridge between the Thames Estuary coastline and the Roach Valley.  
- Most views of the proposed ABPS development would be blocked by the foreground vegetation, bordering the track, on the right hand side of the view, potentially leaving only views to the north western corner of the site and the WRFC site.  
- Most potential views to the two sites would be blocked, or at least filtered, by the layers of vegetation in the foreground, in particular that bordering either side of the B1013.  
- It is likely that glimpses would be available of the upper portions of the 4-storey building in the north-western corner of the site. The current view encompasses little or no evidence of the existing urban edge.  
- Views are likely of the floodlight columns associated with the relocated WRFC, particularly at night - there being few other light emitting structures in the view. The existing floodlights are not visible in the view.  
- The young planting on the eastern edges of the Country Park would, in time, reinforce the screening and filtering properties of the existing vegetation | Low | Low | Very High | Low | Very High | Low | Very High | Low | Very High | Low | MINOR-MODERATE |

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Viewpoint 2: Path within Cherry Orchard Jubilee Country Park

- Views towards the sites from within the Country Park, on the east-west track leading down the valley side.
- In summer months, most views of the proposed ABPS development would be blocked vegetation in the foreground to the south of the track, by layers of tree and shrub planting in the middle distance and by the highway planting bordering the B1013.
- Localised vegetation removal would be required in order to accommodate the proposed site access junction off the B1013 and associated visual splays. This would, in turn, weaken some of the screening properties of the existing highway planting, although the vegetation bordering the western side of the B1013 would largely remain intact.
- Glimpses are likely to be available of the taller elements of the development, above the existing vegetation, e.g. the 4-storey building proposed for the north-western corner of the site. Such development would break the skyline; the current view encompasses few references to the urban edge of Southend.
- It is likely that further views of the proposed development would be available in winter, e.g. the 3-storey building adjacent to the proposed junction; likewise the lighting columns, traffic flows, etc. associated with the junction itself.
- Views are likely of the floodlight columns associated with the relocated WRFC, which would be visible above the vegetation in the centre of the view, particularly at night. The existing floodlit rugby pitch is not currently visible, and there are few other light-emitting features in this view.
- Although the southern portion of the business park development would be screened by an existing vegetation block including conifers in the Country Park, the proposed roundabout and access road is the northern portion and the loss of trees would have more effect on the visibility of the new features.
- The young planting on the eastern extents of the Country Park, together with a general maturing of all the vegetation within the view, would, in time, begin to reinforce some of the screening and filtering properties of the existing vegetation.
<table>
<thead>
<tr>
<th>View/Location</th>
<th>Sensitivity</th>
<th>Description of Effect</th>
<th>Year 1 - Winter</th>
<th>Year 10 - Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viewpoint 3: Point on Roach Valley Way (long distance public footpath) beside the River Roach within the Cherry Orchard Jubilee Country Park</td>
<td>High</td>
<td>• Views towards the proposed developments would be available from the Roach Valley Way within the Country Park.</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Views to the lower elements of the sites would be blocked and filtered by the layers of vegetation in the foreground within the Country Park, and along the B1013 corridor.</td>
<td>Medium</td>
<td>Very High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Localised vegetation removal would be required in order to accommodate the proposed site access junction off the B1013 and associated visual splays. This would, in turn, weaken some of the screening properties of the existing highway planting, although the vegetation bordering the western side of the B1013 would largely remain intact.</td>
<td>Very High</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The view is framed and limited to the left hand side by the vegetation following the line of the River Roach and the Roach Valley Way.</td>
<td>Low</td>
<td>Low</td>
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<tr>
<td></td>
<td></td>
<td>• The central portion of the view would likely encompass the upper portions of the ABPS development. Such development would be seen rising above the intervening vegetation, in particular that bordering the B1013, and in places is likely to break the skyline.</td>
<td>Low</td>
<td>Very High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Views are likely of the floodlight columns associated with the relocated WRFC, which would be visible rising above the vegetation, particularly at night. However, such effects would need to be balanced against the existing floodlit rugby pitch that is currently visible in this view (albeit that the proposed lighting would extend further to the left of the view) and the proposed use of modern luminaires that would limit light pollution.</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• As the view pans to the right, views of the proposed development would reduce as they become blocked by the rising valley side in the foreground.</td>
<td>Low</td>
<td>Very High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The young planting on the eastern extents of the Country Park would, in time, begin to reinforce some of the screening and filtering properties of the existing vegetation.</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

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View Location: Residential housing on Fastnet road and bridleway on southern edge of Cherry Orchard Jubilee Country Park (context photo)

Description of Effect:
- View towards the proposed development from the bridleway on the southern boundary of the Country Park. Provides background information for an extrapolation of the likely view from adjacent residential properties.

- Although the bridleway receptor is located on a highpoint, potentially overlooking the sites, most views of the proposed developments, at least in summer, would be blocked by scrub vegetation and fence lines in the immediate foreground. A not dissimilar scenario is likely from ground floor windows of properties affording a view towards the sites. Here the view would be blocked by garden vegetation and fence lines.

- From localised first floor windows, it is likely that views would be available across the valley. As such, they would encompass the proposed developments. However, such views would also encompass, and would be experienced in the context of, the existing commercial development west of Cherry Orchard Way, the B1013 itself, the Aviation Way Industrial Estate, the floodlit rugby pitch and, in the distance, London Southend Airport.

- Nonetheless, the introduction of the new developments would extend the built edge of Southend northwards into what is currently undeveloped and unlit agricultural land.

- In future years, the planting accompanying the ABPS development would become established and would provide a green framework in which the new buildings would be viewed. This would soften the overall effect but, given the elevated receptor, would have only limited mitigation effects.

- Assessment judgement considers the likely effects from the first floor residential dwelling.

<table>
<thead>
<tr>
<th>View/Location</th>
<th>Sensitivity</th>
<th>Description of Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential housing on Fastnet road and bridleway on southern edge of Cherry Orchard Jubilee Country Park (context photo)</td>
<td>High</td>
<td>View towards the proposed development from the bridleway on the southern boundary of the Country Park. Provides background information for an extrapolation of the likely view from adjacent residential properties. Although the bridleway receptor is located on a highpoint, potentially overlooking the sites, most views of the proposed developments, at least in summer, would be blocked by scrub vegetation and fence lines in the immediate foreground. A not dissimilar scenario is likely from ground floor windows of properties affording a view towards the sites. Here the view would be blocked by garden vegetation and fence lines. From localised first floor windows, it is likely that views would be available across the valley. As such, they would encompass the proposed developments. However, such views would also encompass, and would be experienced in the context of, the existing commercial development west of Cherry Orchard Way, the B1013 itself, the Aviation Way Industrial Estate, the floodlit rugby pitch and, in the distance, London Southend Airport. Nonetheless, the introduction of the new developments would extend the built edge of Southend northwards into what is currently undeveloped and unlit agricultural land. In future years, the planting accompanying the ABPS development would become established and would provide a green framework in which the new buildings would be viewed. This would soften the overall effect but, given the elevated receptor, would have only limited mitigation effects. Assessment judgement considers the likely effects from the first floor residential dwelling.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 1 - Winter</th>
<th>Year 10 - Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td>View/Location</td>
<td>Sensitivity</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Viewpoint 5:</td>
<td>High</td>
</tr>
<tr>
<td>Point on the</td>
<td></td>
</tr>
<tr>
<td>Roach Valley</td>
<td></td>
</tr>
<tr>
<td>Way (long</td>
<td></td>
</tr>
<tr>
<td>distance public footpath) on the south-facing valley slope's edge</td>
<td></td>
</tr>
</tbody>
</table>

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**Viewpoint 6: Point on PRoW to south-east of Hawkwell.**

<table>
<thead>
<tr>
<th>Sensitivity</th>
<th>Description of Effect</th>
<th>Year 1 - Winter</th>
<th>Year 10 - Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This receptor affords wide angle and open views towards the distant Roach Valley. The arable field in the foreground is the dominant feature, sweeping away to a vegetated horizon. Breaks in this planting enable glimpses of development in the valley floor.</td>
<td></td>
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<tr>
<td></td>
<td>Very occasional glimpses of the taller elements of the proposed ABBS would be available but they would comprise a very small component in the overall view, and in most cases would be seen in the context of other commercial or industrial development.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>It is unlikely that the WRFC would be discernible in day light hours. At night time, the flood lit pitch is likely to be visible; however, since the existing floodlit pitch would be removed this would constitute a relocated effect rather than a new effect. Further, the new floodlighting would make use of modern luminaire technology that would better limit light spillage.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Given the distances involved, it is unlikely that the proposed mitigation planting would have any significant effect on the composition of the view from this receptor.</td>
<td></td>
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</tbody>
</table>
Viewpoint 7: Southend Road between Queen Elizabeth Quay and King Henry’s Drive

- View towards the sites from receptors in the vicinity of Southend Road, Rochford.
- The existing foreground street trees and rail embankment, fences and gantries, together with structures associated with London Southend Airport are the predominant features in the view.
- The scrubby woodland on the eastern boundary of the site would screen many potential views of the new development.
- It is likely that the upper portions of the proposed sheds on the eastern boundary of the ABPS site would be visible above the rail line structures, where they would break the sky line. However, given the number of disparate land uses and structures within the view, they would form only a minor component.
- In time, the planting on the eastern boundary of the ABPS development would become established and would help to filter views of the new buildings. It would also provide a backdrop to, and help integrate, some of the incongruent elements in the foreground and middle distance of the view.
- Further to the right, night time glimpses of the WRFC floodlights may also be visible; however, given the distance, angle of view, and intervening structures, they would contribute a minor element of the view.
### Viewpoint 8: Point on public footpath within Rochford Hundred Golf Club course

<table>
<thead>
<tr>
<th>View/Location</th>
<th>Sensitivity</th>
<th>Year 1 - Winter</th>
<th>Year 10 - Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
<td>Very low</td>
</tr>
</tbody>
</table>

- View towards the sites from the Rochford Hundred Golf Club course.
- The existing golf course features, including local undulations and a mix of tree and shrub planting, together with the hedge and block of woodland on the eastern boundary of the site, would screen most summer views of the proposed development. Where views of the new development are available, e.g. though localised weak points in the intervening vegetation, the new buildings or features would replace views of commercial or industrial buildings associated with London Southend Airport or the Aviation Way Industrial Estate.
- In winter, glimpses of the new development, in particular the large sheds on the eastern portion of the site are likely.
- Further to the right of the view, it is likely that there would be an awareness of the rugby club flood lights when they were in use, particularly in winter.
- In time, proposed planting would become established and, along with the management of existing vegetation, would help screen views of the built development, so that any perceptible changes in views from this viewpoint would be of a more wooded backdrop.
<table>
<thead>
<tr>
<th>View/Location</th>
<th>Sensitivity</th>
<th>Description of Effect</th>
<th>Year 1 - Winter</th>
<th>Year 10 - Summer</th>
</tr>
</thead>
</table>
| Viewpoint 9 Field access from Hall Road and Roach Valley Way (long distance public footpath) Viewpoint as within field immediately north of the site on Roach Valley Way | High | • View towards the site from the Roach Valley Way. Receptor is at a higher elevation, so views available down onto the WRFC site with the ABPS beyond.  
• Vegetation along the River Roach provides screening, particularly in summer.  
• Clear views would be available of the WRFC and associated club house and flood light columns between gaps in the vegetation and over lower portions.  
• When in use, the floodlighting associated with the WRFC would introduce a light-omitting feature into a tract of land that is currently relatively free of such elements. Modern technology would limit such light spillage.  
• Glimpses of the Aviation Way buildings are currently available from this receptor. On construction of the ABPS, such buildings would be blocked by the large sheds on the eastern side of the site. The buildings here would be up to 15m in height and so somewhat taller than those in Aviation Way. As such, it is likely that the tallest elements would be visible above the vegetation along the River Roach. | Medium | Very High | MAJOR-MODERATE | Medium | Very High | MAJOR-MODERATE |
| Viewpoint 10 North-east corner of site, on public footpath | High | • View into WRFC site from public footpath on eastern boundary.  
• Users of the public footpath along the eastern edge of the site would experience close-proximity views of the proposed relocated WRFC, with the ABPS beyond.  
• The current open view of arable fields with a backdrop of the Aviation Way Industrial estate would be replaced by a foreground view of rugby pitches and their goalposts, floodlighting, and a clubhouse and associated parking.  
• The existing buildings on Aviation Way are clearly visible on the horizon. On completion of construction, these views would be blocked by the large sheds on the eastern side of the site. The new buildings would be somewhat taller than the existing, as well as being closer to the receptor, and thus would exert greater visual influence.  
• Planting is proposed along the northern edge of the APBS site and, in time, this would soften views of the proposed buildings and help integrate them into the surrounding landscape. | High | Very High | MAJOR | Medium | Very High | MAJOR-MODERATE |
<table>
<thead>
<tr>
<th>View/Location</th>
<th>Sensitivity</th>
<th>Description of Effect</th>
</tr>
</thead>
</table>
| Viewpoint 11 South-east corner of site, on footpath| High        | • View into the ABPS site from the public footpath on the eastern boundary.  
• The public footpath currently affords medium distance views across an arable field to a vegetated horizon. To the left, the clear open close-proximity views are available of the Aviation Way buildings.  
• On completion of the ABPS development, the composition of the view would change entirely, with the view fore-shortened by the large sheds and associated parking in the immediate foreground.  
• There would be no view of the relocated WRFC.  
• Planting is proposed along the eastern boundary and, in time, this would soften views of the proposed buildings and help integrate them into their surroundings. |
| Viewpoint 12 Cherry Orchard Farmhouse (context image) | Medium      | • Extrapolation of the view from Cherry Orchard Cottage.  
• Despite the close-proximity of the receptor to the APBS site, most views of the proposed development would be blocked by the substantial garden and boundary planting surrounding the property.  
• Occasional glimpses may be available of the tallest elements of the ABPS development, over the boundary, from localised ground floor accommodation and from points within the garden.  
• There are limited first floor windows that afford a view towards the site, but where they exist they would encompass the proposed development.  
• The property is currently in close-proximity to the WRFC and in particular the floodlit pitch. The relocation of the WRFC would move the floodlighting some distance away from this receptor and make use of technology that would better limit light spillage. |
SUMMARY AND CONCLUSION

11.1 A Landscape and Visual Impact Assessment was undertaken to assess the likely effects of the proposed developments (the Airport Business Park, Southend development and the relocation of the Westcliff Rugby Football Club) on landscape and visual receptors in the surrounding landscape. The methodology for the assessment and the location of the representative viewpoints was agreed with Rochford District Council.

11.2 Since these are predominantly outline applications, most elements of the development would be agreed as part of the reserved matters. For the purposes of the LVIA, a set of reference drawings illustrating an indicative layout for the developments were as a basis on which to assess the likely landscape and visual effects.

11.3 The ABPS development would be accompanied by a comprehensive package of landscape works that would help integrate the development into the surrounding landscape. The proposed development and associated mitigation planting have been designed so as to have minimal influence on existing landscape features, landscape character and views within the locality.

11.4 The methodology used in this assessment has assumed that Major and Major-Moderate effects can be considered to be ‘Significant’, and that they therefore merit particular consideration in the planning process.

Effects on landscape character

11.5 As expected with any large-scale development, the two sites themselves would experience wholesale changes in landscape character. The ABPS site from a part rugby club (with associated car parking, club house, etc.) and part arable field to Business Park, and the WRFC site from arable field to rugby club.

11.6 There would be only minimal effects on landform within the site, and little or no change to boundary vegetation, save the removal of relatively recent highway planting on the western boundary to accommodate the new access from the B1013 Cherry Orchard Way. The existing hedge across the ABPS site would be retained.

11.7 Changes to public access would be limited to the realignment of the public footpath through the ABPS site via the use of green, landscaped corridors.

11.8 Changes to the character of the surrounding landscape would be limited. The relatively limited visual envelope afforded by the sites’ boundary vegetation and the influence currently exerted by adjacent Aviation Way Industrial Estate and nearby London Southend Airport, mean that there would be limited perceptions of change to the character of the wider landscape.

11.9 The proposed ABPS and WRFC sites fall entirely within the Essex Landscape Character assessment, Landscape Character Type G: Urban Landscapes, and specifically Landscape Character Area G3: South Essex Coastal Towns. Reference to the Assessment shows that this landscape has a Medium sensitivity to change when accommodating development of the type proposed here.
11.10 In the early years following construction, it is considered that there would be an effect of Moderate adverse significance on the character of LCA G3. Such judgement was made following consideration of the following factors:

- its limited influence on the Upper Roach Valley and the Cherry Orchard Jubilee Country Park
- the loss of arable land
- the limited effects on landform
- the safeguarding and retention of boundary hedges and vegetation and hedge within the ABPS site
- the presence of dense highway planting along the western boundary
- the removal of planting to accommodate the proposed junction from the B1013
- the influence exerted by the adjacent Aviation Way Industrial Estate and the busy B1013
- the comprehensive landscape strategy that would accompany the development
- the offset to the River Roach corridor
- the introduction of floodlit rugby pitches into a landscape that is relatively devoid of light-emitting structures; albeit that any adverse effects would be balanced with benefits afforded by the removal of the same number of columns at the existing club and the advantages of modern luminaire technology that would better limit light spillage

11.11 In time, the proposed planting (particularly along the eastern and western boundaries of the ABPS site) would become established and the existing highway planting bordering the A148 would continue to grow and mature. It is considered that such aspects would mitigate or offset some of the adverse effects of the proposed development and reduce the change to LCA G3 to one of Minor adverse significance by year 10.

**Visual effects**

11.12 The Visual Impact Assessment demonstrates how the proposed development would have a limited visual influence on the wider landscape; and how most adverse effects would reduce in time as young planting in the surrounding landscape (e.g. within the Cherry Orchard Jubilee Country Park) and the proposed mitigation planting associated with the ABPS, particularly that along the western and eastern site boundaries, becomes effective. The assessment concludes that at year ten:

- for three of the receptors there would be residual effects of Minor significance
- for five of the receptors (views from the Country Park and from the Roach Hundred Golf Club course) there would be residual effects of Minor-Moderate significance
11.13 From Viewpoints 9i and ii, points on the Roach Valley Way to the north of the WRFC, there would be a residual visual effect of Major-Moderate significance. From this point, views of the new development would be available through and over the vegetation along the River Roach. In time, the proposed planting along the northern boundary of the ABPS site and the vegetation along the river would continue to grow and mature and these residual effects would reduce in significance.

11.14 From Viewpoint 10, a point on the public footpath on the eastern edge of the site, there would be clear, close-proximity views into WRFC site and a residual visual effect of Major Moderate significance. From this point, the introduction of the rugby club and associated club house and car parking, with the ABPS development beyond would result in the wholesale change from views across arable farm land to one of sports pitches that, at certain times of the day/night would be lit.

11.15 From Viewpoint 11, a point on the public footpath on the eastern edge of the site, there would be clear, close-proximity views into the ABPS site and a residual visual effect of Major significance. From this point, the introduction of the new buildings would result in a wholesale loss of views across arable farm land. The proposed planting along the eastern boundary of the ABPS site would continue to grow and mature and in time these residual effects would reduce in significance.

11.16 From Viewpoint 12, Cherry Orchard Cottage on the western edge of the ABPS site, there would be a residual visual effect of Major-Moderate significance. Most potential views into the ABPS site would be blocked by the extensive garden and boundary planting. Very localised views across the development would be available from points in the garden and occasional upper floor windows that afford a view in the direction of the site.

**Conclusion**

11.17 In conclusion, the proposals represent a scheme in a relatively contained landscape, which would have a limited sphere of influence. The ABPS development would be accompanied by a comprehensive landscape strategy that would help integrate the proposals into the surrounding landscape, as well as enhancing the amenity of pedestrians and cyclists moving through the site.

11.18 There would be no significant effect on landscape designations or the key landscape features of the site and, once the proposed planting has become established, the proposed developments could be accommodated with no significant effect on landscape character.

11.19 By year 10, significant visual effects would be limited to close proximity views from the public footpath on the eastern boundary of the site, from the section of the Roach Valley Way that crosses the field immediately to the north of the WRFC site, and to localised views from Cherry Orchard Cottage on the western boundary of the ABPS site.

11.20 Overall, there would be limited residual effects arising from the proposed developments in terms of landscape character and visual amenity, and it is considered that such effects would be acceptable.
Appendix 1: Methodology
1 SCOPE AND PROCESS

Introduction

1.1 Landscape and visual assessment involves a combination of quantitative and qualitative considerations within a framework that allows for structured, informed and reasoned professional judgment. The Guidelines for Landscape and Visual Impact Assessment (GLVIA), Third Edition, forms the current nationally recognized professional guidance tool. The GLVIA reflects current legislation and professional experience over many years of undertaking landscape and visual assessments. This methodology follows the principles recommended within GLVIA Third Edition as part of the assessment process.

1.2 Whilst the process of assessment is often referred to as a Landscape and Visual Impact Assessment, it is important to understand the difference between ‘impact’ and ‘effect’. ‘Impact’ is defined as the action being taken and ‘effect’ as the change resulting from the action. The changes resulting from the implementation of the Development form the main consideration of this assessment and thus the word effect is mainly used. The two main components are:

- landscape effects – assessing effects on the landscape as a resource in its own right;
- visual effects – assessing effects on specific views and the general amenity of the view.

1.3 An assessment of the existing situation and the effects of the proposals is carried out in relation to the following geographical extents:

- national and regional scale landscape character and the wider visual setting;
- county and district scale landscape character and the local visual setting; and
- the Site and more immediate landscape and visual setting.

1.4 The spatial scope of the landscape and visual assessment covers a study area of approximately 3 km radius from the Site. This is based on the initial results of a desktop study reviewing location, topography and nature of the development. This desk based work is then verified as part of the field survey.

1.5 The likely effects of the proposed scheme were assessed in terms of the degree of change on completion of the works in the first year (Year 1) in winter and after a period of 10 years (Year 10) in summer. The field survey and assessment was carried out in winter, and a correlation made as to what the predicted effects would be in summer. An assessment in Year 10 enables the effectiveness of the proposed planting and soft works mitigation measures to be determined over a sufficient period for the proposals to have established and delivered their intended objectives in a meaningful way. Between Years 1 and 10, the
The proposed planting will be in the process of meeting these objectives and a correlation over this span of time can be made as to the extent to which this has been partially achieved. Beyond 10 years, trees can be expected to continue to grow to reach their mature height, and thus potentially provide increased mitigation in later years.

1.6 The assessment uses the following process for both landscape and visual effects, as set out in the GLVIA:

![Diagram of assessment process]

**Figure A1 - Assessing the significance of effect**

**Viewpoint Analysis and Assessment**

1.7 The extent of visual influence of the Development is described as the Zone of Visual Influence (ZVI). This area is identified in two stages. First an initial desk based study of landform, major vegetation and built form is carried out, and secondly an assessment in the field. The field work includes walking the Site and observing locations that are visible beyond the Site and then checking this by visiting the locations beyond the Site where publicly accessible. The extent of the ZVI is therefore progressively determined and fine-tuned.
1.8 To assist the reader, viewpoints are provided to demonstrate the range of available views for a variety of receptors and geographical locations. The GLVIA refers to three types of viewpoint, which are set out and utilised as described below.

- **Representative Viewpoint** – provides a viewpoint that may be considered as typical or similar to a particular location and where the significant effects are unlikely to differ. It therefore can be considered as being representative of other views, e.g. from a PROW or group of houses. Where the viewpoint is not representative of a neighbouring visual receptor, and there would be different significant effects, this is stated within the text.

- **Specific Viewpoint** – illustrates a particular noteworthy or key view. This may be a promoted viewpoint or from a specific visitor attraction, tourist destination, statutory landscape designation, or particular locally valued recreational or cultural landscape associations.

- **Illustrative Viewpoint** – provided to demonstrate particular features, effects or issues. These are used to illustrate: particular Site features; the extent of visibility from within the Site from non-publicly accessible locations; or features that prevent views from certain locations.

1.9 A range of representative viewpoints are selected to assess the available views at a variety of different geographical locations, distances and receptor experiences. Viewpoint locations include public rights of way, roads and public open space. Viewpoints are provided to help appreciate and then describe the views available, identify features within the view, define the location and extent of the Site within the view, and to provide a visual record. On the photographs, the location and extent of the Site is indicated to help the reader, using a dotted line where the proposed development would not be visible and a solid line where all or parts of the development would be visible as an open view.

1.10 The assessment of views includes the detailed consideration of:

- the proximity of the visual receptor to the proposed development;
- the extent of visibility or proportion of the proposed development visible within the wider context of the view;
- the nature and complexity of the existing view and any changes that would affect the skyline;
- elements within the view that may detract from or add to its quality;
- the extent to which the proposed development occupies the view, and whether a framed view, glimpsed or panoramic view; and
- whether the view would be experienced from a specific fixed location or whether it would form part of a sequence of views when the viewer would be moving, and if from a fixed
location, such as a window, whether the proposed development would form the central focus of the view or a more oblique outlook.

1.11 A variety of visual receptors are assessed with a focus on those who are most likely to be concerned about changes to views.

**Photography and Site Work**

1.12 Photographs are taken using a Sony α390 digital single lens reflex camera with a Sony 18-55mm zoom lens. The camera has a focal length multiplier of approximately 1.5, making the focal length equivalent to a 50mm focal length lens on a manual 35mm film SLR camera. The horizontal field of view in landscape format from a single frame shot is approximately 40 degrees.

1.13 The camera is rotated in increments to allow a reasonable proportion of overlap of photographs to create a join that is as accurate as possible.

1.14 The photographs were taken in sunny weather and average to good visibility. Wherever possible photographs are taken with the sun behind or to one side of the view to prevent over-exposure and a high contrast of photographs or features appearing in shadow.

1.15 The panoramic photographs are stitched together using an Adobe Photoshop Plugin (Photomerge). Exposure and levels are adjusted to ensure a smooth transition between the photographs.

2 **CRITERIA AND CATEGORIES: LANDSCAPE**

2.1 The assessment includes a description of the existing landscape elements including topography, vegetation, landform, land uses, infrastructure of the landscape and provides an assessment of the effects of the Development. The national landscape character areas provide a useful basis for setting the scene and to understand the broad scale of the landscape at the national context. However, the primary source assessing landscape character is based on district scale character assessments. The key characteristics that form the landscape are identified, including the individual elements, aesthetic aspects and perceptual aspects, and their condition identified. An assessment of effects on the Site itself is made predominantly in relation to change/loss of the individual landscape features.

2.2 In determining the significance of effects on the landscape, sensitivity is determined for each: landscape feature within the Site; landscape character area; or landscape type that would be affected and combined with the magnitude of change arising from the proposed development. The criteria and categories used to determine the effects on landscape, is set out below.
Landscape Sensitivity (The Nature of the Receptor)

2.3 This in part is based on the value of the landscape receptor. This includes considerations such as: landscape quality / condition; landscape fabric and rarity; scenic quality; wildlife, heritage and cultural interest; recreation value; and perceptual aspects. The presence of a landscape designation can help to identify value and reasons for a designation are usually established in a supporting study. Landscapes or features without any formal designation may also express characteristics that are valued locally. Where there is no supporting evidence base, details regarding sensitivity should typically be derived from landscape character assessments.

Table 1: Value of Landscape Receptor

<table>
<thead>
<tr>
<th>Value of Landscape Receptor</th>
<th>Criteria</th>
</tr>
</thead>
</table>
| Very High                   | **Character**: Areas with international or national landscape designations, i.e. National Parks and Areas of Outstanding Natural Beauty or international heritage designations, i.e. World Heritage Sites and their landscape setting. Very high value may occasionally exist in landscapes with no such designation, where the Landscape Character Assessment or Historic Environment Assessment indicates an area as being of particular high sensitivity or international or national rarity.  
**Features**: form a very important contributory element of the landscape, that have particular historical or cultural reference, or are distinctive or rare and typically of good condition. |
| High                        | **Character**: Landscape Character Assessments that identify an Area of being of high sensitivity, e.g. good condition and/or strong strength of character or of particular local value. Areas with local landscape designations may indicate a High value, but weight should also be given to the Landscape Character Assessment to determine the specific value.  
**Features**: form an important element of the landscape and a major contribution to the character of the landscape. Features play an important role in the local visual and amenity of the area, are typically of good condition and likely to be of historical or cultural relevance to the locality. |
| Medium                      | **Character**: Landscape type or area is identified as medium sensitivity (e.g. having a moderate condition and/or strength of character) including judgements within relevant Landscape Character Assessments as of medium sensitivity. The landscape likely to exhibit some damage or deterioration but may have some individual features of local rarity or value.  
**Features**: forms a notable feature in the landscape, but does not form an important or key characteristic. Alternatively, the feature is an intrinsic element of landscape but is in poor condition. Feature contributes some value to the visual and amenity aspect of the locality and provides some relevance to the historical or cultural context of the landscape. |
| Low                         | **Character**: Landscape type or area is identified as having low sensitivity (e.g. poor condition and/or weak strength of character). Landscapes will typically illustrate clear indication of damage, deterioration, and limited visual cohesion.  
**Features**: forms an intrusive element that is unlikely to be valued or provides a limited contribution to the character and local visual and amenity value. The feature may be of such poor condition that it has lost its ability to contribute effectively to the character of the landscape. It is likely that the feature has little historical or cultural relevance. |
2.4 ‘Susceptibility to change’ assesses the relative ability for the landscape to accommodate the changes that would result from different types of development. This is an integral element of the landscape, but one that can only be judged in the context of the generic type of development being proposed. However, it is not necessary to understand the specifics of the development to make this judgement and thus susceptibility to change can be considered as part of the baseline assessment. Susceptibility to change will, in part, relate to the features and characteristics displayed within the landscape type or area: the relative extent of enclosure and openness; the presence of similar development within or adjacent to the landscape type or area; condition/quality; and the ability to meet landscape planning policies and strategies. Where available, reference is made to judgements made in landscape character assessments as well as Site based judgements. It is particularly important to make this judgement in the context of the Site, i.e. determining the relative presence of those aspects that are evident within the proximity of the Site.

Table 2: Landscape Susceptibility to Change

<table>
<thead>
<tr>
<th>Susceptibility to change</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>A very limited ability of the landscape to accommodate development of the type proposed. Features particularly susceptible to change from development.</td>
</tr>
<tr>
<td>High</td>
<td>A fairly limited ability of the landscape to accommodate development of the type proposed. Features often susceptible to change from development.</td>
</tr>
<tr>
<td>Medium</td>
<td>A moderate ability of the landscape to accommodate development of the type proposed. Features likely to have some susceptible to change from development.</td>
</tr>
<tr>
<td>Low</td>
<td>A well-defined ability of the landscape to accommodate development of the type proposed. Features has little susceptible to change from development.</td>
</tr>
</tbody>
</table>

2.5 These two aspects of susceptibility to change and value are combined to create an overall judgement of sensitivity as follows.

Table 3: Landscape Sensitivity Matrix

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Susceptibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very High</td>
</tr>
<tr>
<td>Value</td>
<td>Very High</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Low</td>
<td>Medium</td>
</tr>
</tbody>
</table>

**Magnitude (The Nature of the Effect)**

2.6 The magnitude of effect of the Development on each of the landscape character types or areas was assessed on the basis of three factors: ‘**size or scale of change**’,
‘geographical influence’ and ‘duration and reversibility’, which are combined to provide an overall judgement of magnitude.

2.7 The size or scale is based on the following professional judgement and Site based assessment.

**Table 4: Landscape: Size or Scale of Change**

<table>
<thead>
<tr>
<th>Size/Scale of Change</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>The proposals constitute a very major change to the feature or key characteristics and attributes of the landscape type or area, resulting in total loss or permanent alteration to existing landscape features and forming a dominant new feature in the landscape.</td>
</tr>
<tr>
<td>High</td>
<td>The proposals constitute a major change to the feature or key characteristics and attributes of the landscape type or area, resulting in major loss or permanent alteration to existing landscape features and forming a prominent new feature in the landscape.</td>
</tr>
<tr>
<td>Medium</td>
<td>The proposals constitute a noticeable change to the feature or key characteristics and attributes of the landscape type or area, resulting in a conspicuous loss or alteration to existing landscape features and forming a new feature in the landscape.</td>
</tr>
<tr>
<td>Low</td>
<td>The proposals constitute a minor change to the feature or key characteristics and attributes of the landscape type or area, resulting in limited loss or alteration to existing landscape features and forming a minor new feature in the landscape.</td>
</tr>
<tr>
<td>Negligible</td>
<td>The proposals constitute little discernible change to the feature or key characteristics and attributes of the landscape type or area, resulting in no loss or permanent alteration to existing landscape features and forming a barely discernible new feature in the landscape.</td>
</tr>
</tbody>
</table>

2.8 **Geographical influence** determines the extent of the local landscape type affected by the proposed development.

**Table 5: Landscape: Geographical Influence**

<table>
<thead>
<tr>
<th>Geographical Influence</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>Effects experienced over an extensive area of the feature or a district level landscape character area, where this is likely to have an evident effect at the national level of landscape character.</td>
</tr>
<tr>
<td>High</td>
<td>Effects experienced where changes would occur over large parts of a feature or landscape character area.</td>
</tr>
<tr>
<td>Medium</td>
<td>A moderate extent of a feature or landscape character area is affected.</td>
</tr>
<tr>
<td>Low</td>
<td>Effects limited to a localised area and small proportion of the overall feature or landscape character area.</td>
</tr>
<tr>
<td>Very Low</td>
<td>Effects limited to a very restricted extent, sufficient that there is little discernible influence on the feature or character of the landscape character area.</td>
</tr>
</tbody>
</table>
2.9 Magnitude is also affected by duration and reversibility, as set out below:

### Table 6: Landscape: Duration and Reversibility

<table>
<thead>
<tr>
<th>Duration &amp; Reversibility</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>Long term development (over 30 years) and very difficult to reverse.</td>
</tr>
<tr>
<td>High</td>
<td>Medium term development (10 to 30 years) and very difficult to reverse or long term development (over 30 years) and partially reversible.</td>
</tr>
<tr>
<td>Medium</td>
<td>Medium term development (10 to 30 years) and partially reversible or short term development (1 to 10 years) and very difficult to reverse or long term development (over 30 years) and fully reversible.</td>
</tr>
<tr>
<td>Low</td>
<td>Medium term development (10 to 30 years) and fully reversible or short term development (1 to 10 years) and partially reversible.</td>
</tr>
<tr>
<td>Very Low</td>
<td>Short term development (1 to 10 years) and fully reversible.</td>
</tr>
</tbody>
</table>

2.10 The three aspects of magnitude are combined based on professional judgement, with greater weight being given to scale/size of change, into one of the following categories: 

- **High**, **Medium**, **Low** or **Negligible** or **No Change** where there is no effect.

### Significance of Effect

2.11 On the basis of the above the following categories of significance of effect for landscape change are identified.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very High</td>
</tr>
<tr>
<td>High</td>
<td>Major</td>
</tr>
<tr>
<td>Medium</td>
<td>Major-Moderate</td>
</tr>
<tr>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>Negligible</td>
<td>Minor</td>
</tr>
</tbody>
</table>

2.12 For the purposes of this assessment, effects that are considered to be ‘significant’ (highlighted in green) i.e. those of greatest consideration in determining a planning application, are those that create a Major or Major-Moderate significance of effect, whether beneficial, neutral or adverse.

3 **CRITERIA AND CATEGORIES: VIEWS**

3.1 In determining the significance of effects on views, sensitivity is determined for each visual receptor that would be affected and combined with the magnitude of change arising from the proposed development. The criteria and categories used to determine the effects on views, is set out below.
The Nature of the Receptor (Sensitivity)

3.2 The sensitivity of views is considered in relation to the person experiencing the view. This in part will be based on the value that the receptor places on the view. This is considered on a collective basis, so will be influenced by the extent to which it is publicised, relative note-worthiness, i.e. clearly defined view or vista that is distinguished from other views, and the extent to which the view is utilised or enjoyed.

Table 8: Value of View

<table>
<thead>
<tr>
<th>Value of View</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Views from publicised vantage points and of regional and sub-regional value. Tourist attractions / historic estates /statutory heritage asset with a specific vista or focused views. Particularly noteworthy public views from national trails, National Parks or AONBs or statutory heritage assets, i.e. more than local value and could be expected to be regularly used. Windows from residential properties specifically designed to take advantage of a particular view.</td>
</tr>
<tr>
<td>Medium</td>
<td>Locally known or valued viewpoints. Views from promoted public rights of way or clear evidence of regular use and areas of informal open space. Views from regularly used rooms or living space. Panoramic view, vista or other noteworthy view from active recreation areas or transport routes.</td>
</tr>
<tr>
<td>Low</td>
<td>View is not publicised and/or that there is relatively limited evidence of being regularly used. Visually degraded locations. View from small windows or likely non-main living spaces. Views of little noteworthiness from areas of active recreation or transport routes.</td>
</tr>
</tbody>
</table>

3.3 The ‘susceptibility to change’ of the visual receptor will vary depending on the activity or use of the particular location and the extent to which the view is an important aspect of the activity or use. The following criteria are used to determine susceptibility to change:

Table 9: Susceptibility of Visual Receptor to Change

<table>
<thead>
<tr>
<th>Susceptibility of visual receptor to change</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Residential properties. Areas of open space where informal recreation is the main activity e.g. country parks and public open space. Users of public rights of way. Recreational activity where the primary enjoyment comes from the view. General views from heritage assets or attractions.</td>
</tr>
<tr>
<td>Medium</td>
<td>Areas of outdoor sport or active recreation where appreciation of views forms part of the experience, e.g. golf courses; pedestrians using footways along roads; vehicular users and cyclists on roads; and rail passengers.</td>
</tr>
<tr>
<td>Low</td>
<td>Areas of active sport or play where the view does not form part of the experience e.g. football, rugby, play equipment. Commercial premises and areas of employment, where the view has limited value in relation to the activity being undertaken. There may be specific locations where buildings and the type of employment has been designed to enhance the quality of working life, in which case a higher level sensitivity would be applicable.</td>
</tr>
</tbody>
</table>
3.4 These two aspects are combined to create an overall judgement of sensitivity as follows:

**Table 10: Visual Sensitivity Matrix**

<table>
<thead>
<tr>
<th>Susceptibility</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Very High</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Medium</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

**The Nature of the Effect Likely to Occur (Magnitude)**

3.5 The magnitude of effect of the Development on each view was assessed on the basis of three factors, *size or scale of change*, *geographical influence* and *duration and reversibility*, which are combined to provide an overall judgement of magnitude. The size or scale is based on the following professional judgement and Site based assessment.

**Table 11: Visual: Size or Scale of Change**

<table>
<thead>
<tr>
<th>Size/Scale of Change</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>The proposed development would become the most dominant feature in the view and that completely contrasts with the other existing features in the view. The contrasting features of the development would be fully visible.</td>
</tr>
<tr>
<td>High</td>
<td>The proposal development would constitute a major change to the view, forming a prominent new feature in the view that noticeably contrasts with other existing features in the view. The development would be predominantly visible.</td>
</tr>
<tr>
<td>Medium</td>
<td>The proposals development would form a noticeable change to the view, forming a conspicuous new feature in the view that partially contrasts or harmonises with other features in the view. The contrasting features of the development would be partially visible.</td>
</tr>
<tr>
<td>Low</td>
<td>The proposal development would constitute a small change to the view, forming a minor new feature in the view that largely integrates with its surroundings with little discernible change. This could also be a result of being a glimpsed or filtered view through vegetation and/or at some distance relative to its scale.</td>
</tr>
<tr>
<td>Very Low</td>
<td>The proposed development would be a barely discernible change to the view, which could be due to eg a very filtered view through vegetation or considerable distance relative to scale.</td>
</tr>
</tbody>
</table>

3.6 **Geographical extent** determines how far the effect would be experienced. The wider the geographical effect, the greater magnitude of change.
Table 12: Visual: Geographical Influence

<table>
<thead>
<tr>
<th>Geographical Influence</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>The development affects all or nearly all of the view and forms the primary focus of the view to the extent that it is overwhelming. It is likely that the view is within the Site or very close to the Site.</td>
</tr>
<tr>
<td>High</td>
<td>The development affects a large extent of the view and at the centre of the view. It is likely that the view is close to the Site or possibly in the Site.</td>
</tr>
<tr>
<td>Medium</td>
<td>The development affects a moderate extent of the view and lies near the centre of the view or at a slightly oblique angle. It is likely that this is a localised view.</td>
</tr>
<tr>
<td>Low</td>
<td>The development affects a small extent of the view and/or at a moderately oblique angle. It is likely that the development is in the mid-distance of the view.</td>
</tr>
<tr>
<td>Very Low</td>
<td>The development affects a very small extent of the view and/or at a very oblique angle. It is likely that the development is in the far distance of the view.</td>
</tr>
</tbody>
</table>

3.7 Magnitude is also affected by **duration and reversibility**, as set out below:

Table 13: Visual: Duration and Reversibility

<table>
<thead>
<tr>
<th>Duration and Reversibility</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>Long term development (over 30 years) and very difficult to reverse</td>
</tr>
<tr>
<td>High</td>
<td>Medium term development (10 to 30 years) and very difficult to reverse or long term development (over 30 years) and partially reversible</td>
</tr>
<tr>
<td>Medium</td>
<td>Medium term development (10 to 30 years) and partially reversible or short term development (1 to 10 years) and very difficult to reverse or long term development (over 30 years) and fully reversible</td>
</tr>
<tr>
<td>Low</td>
<td>Medium term development (10 to 30 years) and fully reversible or short term development (1 to 10 years) and partially reversible</td>
</tr>
<tr>
<td>Very Low</td>
<td>Short term development (1 to 10 years) and fully eversible</td>
</tr>
</tbody>
</table>

3.8 The three aspects of magnitude are combined based on professional judgement, with greater weight being given to scale/size of change, into one of the following categories: **High, Medium, Low** or **Negligible** or **No Change** where there is no effect.

**Significance of Effect**

3.9 On the basis of the above, the following categories of significance of effect for visual change are identified, with those with a green tone identified as of overall as being ‘significant’.
Table 14: Significance of Effect on Views

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very High</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>Major</td>
</tr>
<tr>
<td>Magnitude</td>
<td>Major-Moderate</td>
</tr>
<tr>
<td>Low</td>
<td>Minor-Moderate</td>
</tr>
<tr>
<td>Negligible</td>
<td>Minor</td>
</tr>
</tbody>
</table>

3.10 For the purposes of this assessment, impacts that are considered to be ‘significant’ (highlighted in green) i.e. those of greatest consideration in determining a planning application are those that create a Major or Major-Moderate significance of effect, whether beneficial, neutral or adverse.

Criteria of Other Factors Assessed

3.11 The assessment also considered the following aspects, as set out below.

- **Direct and Indirect**: Direct effects relate to the changes on the Site including re-contouring of landform, loss and addition of vegetation, removal or inclusion of built structures and surface treatments, etc. Direct effects are also experienced where there are changes to the character of the landscape, where the proposed development is physically located within a character area or type. Effects on views are also always considered to be direct. Indirect effects occur where the character is influenced by changes in a neighbouring landscape character area.

- **Seasonal Variation and Duration**: Due to the role that vegetation can play in preventing or limiting views or influencing the character of the landscape, the difference between winter and summer needs to be considered. This is considered by assessing impacts in winter (in the first year following completion) and in summer (after 10 years).

- **Beneficial, Neutral or Adverse Effects**: Adverse effects are those that would be damaging to the quality, integrity or key characteristics of the landscape and/or visual resource. Beneficial effects are those effects that would result in an improvement in the quality, integrity or key characteristics of the landscape and/or visual resource. Neutral effects are those effects that would maintain, on balance, the existing levels of the quality, integrity or key characteristics of the landscape and/or visual resource. A neutral effect may therefore arise where beneficial effects offset adverse effects or where the value judgement would consider the change to be different, but neither a deterioration or an enhancement.
Appendix 2: National Character Areas, extracts from
NCA 81: Greater Thames Estuary
NCA 111: Northern Thames Basin
Introduction

As part of Natural England’s responsibilities as set out in the Natural Environment White Paper,1 Biodiversity 20202 and the European Landscape Convention,3 we are revising profiles for England’s 159 National Character Areas (NCAs). These are areas that share similar landscape characteristics, and which follow natural lines in the landscape rather than administrative boundaries, making them a good decision-making framework for the natural environment.

NCA profiles are guidance documents which can help communities to inform their decision-making about the places that they live in and care for. The information they contain will support the planning of conservation initiatives at a landscape scale, inform the delivery of Nature Improvement Areas and encourage broader partnership working through Local Nature Partnerships. The profiles will also help to inform choices about how land is managed and can change.

Each profile includes a description of the natural and cultural features that shape our landscapes, how the landscape has changed over time, the current key drivers for ongoing change, and a broad analysis of each area’s characteristics and ecosystem services. Statements of Environmental Opportunity (SEOs) are suggested, which draw on this integrated information. The SEOs offer guidance on the critical issues, which could help to achieve sustainable growth and a more secure environmental future.

NCA profiles are working documents which draw on current evidence and knowledge. We will aim to refresh and update them periodically as new information becomes available to us.

We would like to hear how useful the NCA profiles are to you. You can contact the NCA team by emailing ncaprofiles@naturalengland.org.uk.
Summary

The Greater Thames Estuary National Character Area (NCA) is predominantly a remote and tranquil landscape of shallow creeks, drowned estuaries, low-lying islands, mudflats and broad tracts of tidal salt marsh and reclaimed grazing marsh that lies between the North Sea and the rising ground inland. It forms the eastern edge of the London Basin and encompasses the coastlines of South Essex and North Kent, along with a narrow strip of land following the path of the Thames into East London.

Despite its close proximity to London, the NCA contains some of the least settled areas of the English coast, with few major settlements and medieval patterns of small villages and hamlets on higher ground and the marsh edges. This provides a stark contrast to the busy urban and industrial areas towards London where population density is high and development pressures are increasing. Sea defences protect large areas of reclaimed grazing marsh and its associated ancient fleet and ditch systems, and productive arable farmland. Historic military landmarks are characteristic features of the coastal landscape.

The coastal habitats of the NCA are internationally important for their biodiversity interest and support large numbers of overwintering and breeding wetland birds, rare plant and invertebrate species, and diverse marine wildlife. The vast majority of the coastline and estuaries are designated as Ramsar sites and Special Protection Areas, while the Essex Estuaries are a Special Area of Conservation. Brownfield sites support priority open mosaic habitat and its associated nationally rare invertebrate species. The coastline is also of major geomorphological interest for the study of estuarine and coastal processes, and for its nationally and internationally important deposits of London Clay fossils and Pleistocene sediments.

There is a marked contrast between the wild and remote coastal marshes, and the industrial and urban developments which are highly visible in the low-lying landscape. A key challenge is to accommodate increasing development pressure in the area with the protection and enhancement of the natural landscape and its internationally important coastal habitats and species, and nationally important open mosaic habitat. Rising sea levels due to climate change present a major threat to coastal areas in the NCA through coastal squeeze, the alteration of coastal processes and increased flood risk – and the integrated management of these issues provides a major challenge.
Statements of Environmental Opportunities:

■ **SEO 1:** Maintain and enhance the expansive, remote coastal landscape – with its drowned estuaries, low islands, mudflats, and broad tracts of tidal salt marsh and reclaimed grazing marsh – maintaining internationally important habitats and their wildlife, and underlying geodiversity, while addressing the impacts of coastal squeeze and climate change and considering dynamic coastal processes.

■ **SEO 2:** Work with landowners and managers to incorporate measures to improve biodiversity, geodiversity, pollination, water quality, soil quality and climate adaptation and to prevent soil erosion in this important food-providing landscape, while maintaining its historic character.

■ **SEO 3:** Ensure that the tranquil and remote character of the estuary is maintained by conserving and enhancing important coastal habitats and distinctive historic and geological features, while providing increased opportunities for recreation and enjoyment of the landscape.

■ **SEO 4:** Encourage a strategic approach to development that is informed by and makes a positive contribution to local character, incorporates green infrastructure which provides ecosystem services where they are needed most, and promotes recreation and addresses climate change, while maintaining important open mosaic and coastal habitats, and historic and geological features.
Description

Physical and functional links to other National Character Areas

The Greater Thames Estuary National Character Area (NCA) forms the eastern edge of the London Basin, and its extensive underlying geology of London Clay provides links with the Northern Thames Basin NCA and, further west, the Inner London NCA.

The NCA lies between the North Sea and the rising ground of the adjacent North Kent Plain and Northern Thames Basin NCAs which provide a backdrop to the extensive flat open spaces of the estuary. Uninterrupted, far-reaching views out across the Thames to the opposite banks are possible from this higher ground, and industrial and historic military landmarks are highly visible in this predominantly low-lying marshy coastal landscape.

The Thames is one of the major estuaries of the eastern English coast and drains over 16,000 km² of land, from the source of the River Thames in Gloucestershire to the west, and the southern reaches of the River Medway in the High Weald of Sussex. To the north the NCA includes the estuaries of the rivers Crouch, Roach, Blackwater, Colne and Stour and the embayment of Hamford Water, which together reach far into the Northern Thames Basin NCA and beyond into the South Suffolk and North Essex Claylands NCA. There is hydrological continuity between Tertiary deposits of Thanet Sands in the far west of the NCA and the underlying principal London Basin Chalk aquifer, which stretches through the Northern Thames Basin NCA and into the Chilterns NCA to the north and the North Downs NCA to the south.

Coastal processes of erosion, transportation and deposition provide a functional link between the Greater Thames Estuary NCA and the contrasting coastlines of the adjacent North Kent Plain NCA and Suffolk Coast and Heaths NCA, with littoral drift occurring southwards along the coast. The marshes were created from the material carried by the sea from the north, and a continued supply of sediment is needed to sustain them. Functional connectivity is also provided by the continuation of coastal habitats into adjacent NCAs, with the Stour, Orwell, Debden and Alde–Ore estuaries occurring on the Suffolk coastline, and large areas of grazing marsh habitat behind coastal defences in the North Kent Plain NCA.

The River Thames itself provides a major transport link to the Inner London NCA with jetties, wharfs and docks occurring throughout. An extensive network of road and rail bridges spans the NCA's western reaches, including the M25 Dartford crossing, as it follows the Thames path winding through the eastern part of Inner London. The Saxon Shore Way stretches 257 km along the Kent coastline from Gravesend to Hastings in East Sussex, linking the North Kent Plain, North Downs, Wealden Greensand and Romney Marshes NCAs. The Thames Path National Trail follows the path of the Thames from its source in the Cotswolds, to Greenwich in the East London part of the NCA.
Key characteristics

- Predominantly flat, low-lying coastal landscape where extensive open spaces are dominated by the sky, and the pervasive presence of water and numerous coastal estuaries extend the maritime influence far inland.
- Eastern edge of the London Basin with its underlying geology of the extensive London Clay, containing important sites for geodiversity including fossiliferous deposits, and overlain by productive loamy soils derived from intertidal alluvial muds.
- Geological contrast and variety along the coastline provided by Sheppey, a long, low island rising from a stretch of very flat marsh along the Swale Estuary in Kent with low, steep clay cliffs facing towards Essex, and Mersea Island in the Blackwater Estuary in Essex.
- Coastline of major geomorphological interest for its coastal processes. Accretion of material carried by the sea from the north recharges intertidal coastal habitats, which are subject to coastal squeeze from rising sea levels.
- Open grazing pastures patterned by a network of ancient and modern reed-fringed drainage ditches and dykes, numerous creeks and few hedges or fences, with tree cover a rarity.
- Traditional unimproved wet pasture grazed with sheep and cattle combined with extensive drained and ploughed arable land protected from floods by sea walls, with some areas of more mixed agriculture on higher ground.
- Strong feelings of remoteness and wilderness persist on extensive salt marshes, mudflats and reclaimed farmed marshland, which support internationally important plants, invertebrates and populations of breeding and overwintering birds, notably overwintering Brent geese.

- Open mosaic habitats on brownfield sites support nationally important invertebrate assemblages and key populations of rare invertebrate species.
- Distinctive landmarks of coastal military heritage including Napoleonic military defences, forts and 20th-century pillboxes.
- Some of the least settled parts of the English coast with numerous small villages and hamlets on higher ground and marsh edges reflecting medieval patterns and the coastal economy.
- Highly urbanised areas within London and on marsh edges subject to chaotic activity of various major developments including ports, waste disposal, marine dredging, housing regeneration, mineral extraction and prominent power stations plus numerous other industry-related activities.
- Increasing development pressures around major settlements and especially towards London, with urban, industrial and recreational sites often highly visible within the low-lying marshes.
- Major historical and current transport link to Inner London provided by the River Thames, with an extensive network of road and rail bridges spanning its reaches within the city.
Greater Thames Estuary today

The Greater Thames Estuary NCA follows the banks of the Thames as it extends from East London, through the activity of urban life and major industrial developments, and along the predominantly remote and wild coastlines of Essex and North Kent into the North Sea. As the Thames drains out to the sea the city gradually loses its hold and the estuary widens into a landscape of shallow creeks, drowned estuaries, mudflats and broad tracts of tidal salt marsh and reclaimed grazing marsh where the extensive open spaces are dominated by the sky and the pervasive presence of water.

The NCA is a predominantly flat, low-lying, narrow, deeply indented strip of soft coastline. It forms the eastern edge of the London Basin, and the shape of its branching estuaries is determined by the glacial and fluvial sands and gravels that overlie London Clay. The confined principal London Basin Chalk aquifer, which underlies the eastern most part of the NCA as it stretches into London, is overlain by Tertiary deposits of Thanet Sands which provide a hydrological continuity with the Chalk. Drained loamy soils derived from intertidal alluvial muds provide fertile, productive land. Contrast and variety along the coastline is provided by low islands such as Sheppey, which rises from a stretch of very flat marsh along the Swale Estuary in Kent and has low, steep clay cliffs facing towards Essex, and Mersea Island in the Blackwater Estuary in Essex. Accretion of material carried by the sea from the north occurs along the coast, although the marshes in front of sea defences are subject to loss from coastal squeeze due to rising sea levels. The coastline is of major geomorphological interest for the study of estuarine and coastal processes. The NCA also contains important geological sites with fossiliferous deposits of London Clay and Pleistocene sediments.

Several of these sites are of importance both nationally and internationally as type sites for fossils and archaeology.

The coastal landscape mainly consists of a maze of winding, shallow creeks, drowned estuaries, mudflats and broad tracts of tidal salt marsh with sand and shingle beaches along the coast edge. The relatively permanent, branching, meandering creeks which dissect the salt marshes fill and empty with the tide and provide an interesting temporal variation within the marsh landscape. The area holds an extensive tract of important coastal habitat and this is reflected in the vast majority of its coastline and estuaries being...
designated as a Ramsar site and the Essex Estuaries as a Special Area of Conservation. The ebb of the tide uncovers large areas of mudflats, with shingle and shell banks and offshore islands also occurring in the intertidal zone, while large tracts of salt marsh (the most extensive of any NCA) occur above the intertidal range in front of sea defences. Behind the sea walls are large areas of reclaimed grazing marsh and its associated fleet-and-ditch systems. The salt marsh and grazing marsh are of international importance for their diverse assemblages of wetland plants and invertebrates, and the surrounding rich mosaic of terrestrial habitats supports nationally rare plants and invertebrates.

The NCA is of national importance for its flower-rich and open sward brownfield habitats that have developed on post-industrial sites, particularly in south Essex, the Colchester area and the north Kent coast, including Canvey Wick Site of Special Scientific Interest. These scarce open mosaic habitats support nationally important invertebrate assemblages and key populations of rare species, including the brown-banded carder bee and shrill carder bee.

The Estuary is of international importance for bird species and large swathes of its semi-natural coastal habitat are designated as a Special Protection Area. Hundreds of thousands of wintering waterfowl – including grey plover, dunlin and black-tailed godwit – provide a birdwatching spectacle as they add movement and variety to the open landscape. The estuary also provides some of the best breeding sites for rare wetland birds in southern England, including avocets and marsh harriers. The estuary is notable for its overwintering population of dark-bellied Brent geese, which rely on the surrounding arable farmland as a food source.

Commercial arable production is the dominant type of agriculture here following the conversion of much of the grazing marsh to arable during the second half of the 20th century. Hedgerows are absent from the large, rectilinear fields, with open pastures grazed with sheep and cattle patterned by a network of ancient and modern reed-fringed drainage ditches and dykes. Some areas of more mixed agriculture occur on higher ground. Trees are scarce within the open landscape, and are largely restricted to pockets of higher land surrounding isolated farms and churches and larger settlements along the marshland fringe.

The NCA includes some of the least settled parts of the English coast, though there are also numerous small villages and hamlets located on higher ground and on the edge of the marshes, reflecting medieval patterns and a traditional coastal economy. The local vernacular is predominantly of red brick and weatherboarded houses, including a large number of pre-1750s buildings. Nucleated villages occur, but the historic settlement pattern was largely dispersed with small hamlets, isolated farmsteads and church/manorial hall complexes providing focal points. Some settlements, such as Clacton, Southend and Frinton, have developed as popular seaside resorts.

Industry and its infrastructure – including waste disposal and mineral extraction sites, transport routes, ports and prominent power stations – and urban development, including housing and caravan sites, now occupy what are often highly visible sites within the low-lying marshes. The NCA encompasses the highly urbanised areas alongside the River Thames in East London, including the Isle of Dogs development, East and West Ham, and London City Airport. The historical East End of London, which is an especially busy and varied part of the nation’s capital, provides a direct contrast to...
the overriding sense of isolation of the estuary marshes and farmland. Large areas of marsh still exist within London, at Rainham and Crayford, and these provide important areas of tranquillity and recreation within the highly populated and urban parts of the NCA. Links to the sea are present throughout in the dynamic ebb and flow of the tidal waters of the Thames which, along with the busy movement of a range of vessels and the large and varied bird population, adds movement to the landscape.

Development is occurring in the NCA, especially in the west around London, directed by initiatives such as the Thames Gateway. Existing urban areas are being regenerated and new industry and housing constructed. Major port developments and other proposed nationally important infrastructure projects may further impact on character. A strategic approach to green infrastructure has been taken with initiatives such as the All London Green Grid, Greening the Gateway Kent and Medway, and Essex Green Grid guiding the development of a network of green infrastructure throughout the NCA. National trails along both sides of the estuary provide recreational opportunities and green infrastructure links from London along the Thames and out into the rural landscape. Heavy recreational use of estuary waters and beaches occurs in some more accessible areas of the NCA.

Historic associations are rich within the landscape and reflect the longstanding importance of the estuary as a main access point into London. They include rare Neolithic causeway enclosures, bronze-age funerary monuments, iron-age defended enclosures, and most notably the prominent military associations along the coastline such as Napoleonic military defences (the Martello towers), a number of distinctive forts and 20th-century pillboxes.

Charles Dickens used Cooling Marshes on the North Kent coast as the setting for the beginning of Great Expectations and his evocative description of the marshes, written 150 years ago, still holds true today: "... the dark flat wilderness beyond the churchyard, intersected with dykes and mounds and gates, with scattered cattle feeding on it, was the marshes; and that the low leaden line beyond, was the river; and that the distant savage lair from which the wind was rushing, was the sea...".
The landscape through time

The NCA typically represents the eastern edge of the London Basin, a geological formation of Palaeogene sediments predominantly comprised of sands and clays deposited between 65 and 23 million years ago and folded to their current structure during the Alpine Orogeny (mountain-building episode). These Palaeogene sediments contain fossils of both national and international importance including very well-preserved flora and fauna that are the basis for defining the stratigraphy of the London Clay as well as diverse fossil bird assemblages that includes several ‘type’ taxa as well as evidence of fossil families only recorded in Britain.

Covering most of the underlying Tertiary geology is made up of glacial and fluvial sands and gravels, deposited by successive Quaternary (ice-age) glaciations. A major glacial event – the Anglian glaciation which occurred some 450,000 years ago – saw an ice sheet reach the outskirts of present-day London. This was responsible for shifting the course of the Thames to its present-day route. Within this NCA, there are also sites that preserve evidence of past climates, landscapes and biodiversity as well as early human stone tools and evidence of the landscapes they lived in, around 400,000 years ago. The NCA also contains important geomorphological sites demonstrating a range of landforms and active processes.

Surface deposits are largely recent estuarine sediments, ranging from the fine silts of the salt marsh, grazing marsh and much of the foreshore, to coarser sands and gravels on the more exposed parts of the coast. These have resulted in fertile stoneless, clayey, silty and loamy soils, much of which have been extensively drained to give fertile arable land.

The physical development of the Greater Thames Estuary has been dominated by the relative levels of land and sea. In the 11,500 years since the end of the last glaciation and the onset of the Holocene (our present interglacial) epoch, the sea has risen some 30 m to its present level. The marshes themselves have been created and sustained by material carried by the sea from the north, a natural process of accretion that has added many thousands of hectares to the marshes of Kent and Essex since Anglo-Saxon times.
Evidence of early exploitation, including rare causewayed enclosures, comes from Neolithic times when sea levels rose to around the present-day level. Areas of submerged land surface with Neolithic settlement evidence survive in the intertidal zone, and are particularly extensive in the Blackwater Estuary. Late bronze-age settlement evidence is widespread and associated with a wide range of field systems and funerary monuments. Abundant iron-age remains from the Essex Marshes are related to a local salt-making industry. Later medieval evidence of salt-making sites, in the form of mounds, is to be found on the edge of the Kent Marshes, in particular on the Isle of Sheppey.

At the end of the Iron Age, sea levels fell and the arrival of the Romans in Britain marked a period of settlement made possible by their knowledge of wetland drainage. Farmsteads were developed on the higher ground and reclaimed marshland was cultivated. Roman settlement, however, was short lived. The sudden rise in sea level during the late Roman period, combined with poor drainage maintenance, caused them to abandon the marshes but evidence of their fields is still visible today.

By the early Middle Ages, sea banks had been built to protect grazing marsh from the rising sea. Foulness Island on the Essex coast was mainly enwalled during this period. Following the later Middle Ages there are numerous records of surges and breaches. A major use of Essex woodland at this time was as underwood for thatching sea walls. At West Thurrock, the sea walls were made of chalk transported from Purfleet specifically for that purpose.

Medieval settlement was a mixture of nucleated villages and isolated manorial complexes set back from the marshes on the rising claylands. The network of minster churches founded by Saxon Christians is still evident in the landscape and they form the basis of several settlements including Minster on Sheppey and Hoo St Werburgh. The presence today of many Saxon fishing traps in the Blackwater/Colne Estuary is evidence of the importance of the sea and shoreline to early medieval economies.

During the post-medieval period, numerous small villages and hamlets developed related to the coastal economy of fishing (at Mersea) and boatbuilding, as did the important coastal cargo transport network of the ‘Thames Barges’. During this period further marshland was progressively reclaimed by the process of ‘inning’. Coastal defences were constructed resulting in wet, sheep-grazed marsh within the sea walls and salt marsh without. Between the late 17th century and today, further areas were enwalled as agricultural land at the expense of the salt marshes. Many small innings were also lost, and then rebuilt anew, as periodic surges breached both ancient and new sea banks. Sparse settlement remained the norm during this period until the expansion of the railway system in the mid 19th century, which stimulated the growth of seaside resorts such as Southend, Clacton and Frinton. This ultimately led to the development of plotland settlements\(^5\), the most striking of which is Jaywick.

Military establishments, built from the 17th century onwards to face the threat of invasion by sea and defend London, and the Royal Navy dockyards at Deptford, Chatham and Sheerness, provide some of the most distinctive landmarks of the estuary coastline and make up one of the finest collections of historic military architecture in the world. These include Tilbury Fort (built

\(^5\) The ‘plotlands’ consisted of small plots of land sold in the first half of the 20th century to people who built weekend cottages, holiday bungalows or smallholdings there. Many became permanent residences and have been incorporated into new urban developments.
In 1670, the defences of the military dockyards at Chatham and Sheerness, the Martello towers built in the early 1800s during the Napoleonic Wars, together with the Medway forts and the later granite-faced Royal Commission forts of the 1860s, and anti-invasion works from the two World Wars.

In the latter half of the 20th century, extensive drainage and fertilisation of the estuary marshes for arable cropping and improved pasture, and to a lesser extent for industry, led to widespread fragmentation and the loss of 64 per cent per cent of the area's traditional wetland character. The recent and past conversion of the Estuary to arable use is today a declining trend, while the risk of periodic flooding has led to the construction of hundreds of kilometres of sea wall defences. As sea level rises (at an estimated 2 mm a year) salt marsh, which provides a natural defence against the sea by dissipating wave energy, is being lost at a rapid rate to coastal squeeze against these hard engineered defences. In some areas defences have been removed or managed realignment or foreshore recharge has taken place to sustain and create natural defences against the rise in sea level. The largest managed coastal realignment project in Europe was carried out in 2002 on the Blackwater Estuary to create 80 ha of new coastal grazing marsh, salt marsh and mudflats. Large elm trees along hedgerows on higher ground were a prominent feature of the NCA, especially on the Isle of Sheppey, and their loss through Dutch elm disease in the 1970s had a major impact on the landscape.

Industrial development of the Thames Estuary has a long history. During the medieval period the estuary was a focus for the munitions industry and the Royal Arsenal at Woolwich, founded in the late 17th century, played a central role for the production and storage of munitions until the end of the Second World War. London's dockyards formed the focus of much industrial activity, including the pioneering construction of steam-powered and iron ships through the 18th and 19th centuries. In the 1880s the estuary was the site of the world's first long-distance electricity transmission station and the first UK oil shipment. There has been an increasing demand since 1945 for waste disposal sites, with the impacts of dredging also a major issue within the Estuary. Oil refineries, chemical works, power stations, mineral extraction and cement works form prominent features within the predominantly low-lying landscape.

Since the early 1980s the riverside of East London has been transformed by the construction of Canary Wharf, the O2 Arena and London City Airport on the site of the old dockyards. Current development of the Thames Gateway through the regeneration of existing urban conurbations and brownfield sites and the construction of new housing and industry is occurring, mainly on the fringes of London and the Medway towns. Major projects include a new super-port at the old Shell Haven oil refinery site in Thurrock. New green space in association with Thames Gateway development is being created, and waste and mineral sites are being restored, including the Thurrock Thameside Nature Park at Mucking which lies on top of a former major landfill site. The Parklands Project has created a number of new parks in Kent and Essex. Away from major settlements, the intrinsic open, remote character of the agricultural and coastal landscape persists.

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Ecosystem services

The Greater Thames Estuary NCA provides a wide range of benefits to society. Each is derived from the attributes and processes (both natural and cultural features) within the area. These benefits are known collectively as ‘ecosystem services’. The predominant services are summarised below. Further information on ecosystem services provided in the Greater Thames Estuary NCA is contained in the ‘Analysis’ section of this document.

Provisioning services (food, fibre and water supply)

- **Food provision**: The NCA contains extensive areas of land (49 per cent per cent) under agricultural management with cultivation of cereal crops dominating extensive areas of ploughed, drained former marshland to produce wheat and barley. Traditional wet pasture is grazed with sheep and cattle and more mixed agriculture occurs on higher ground. Estuarine waters support an important commercial fishing industry including shellfish.

- **Water availability**: Large areas of the Kent coastline have surface water available for abstraction, including the Isle of Sheppey and the northern reaches of the Medway. Water is more limited on the Essex side of the Estuary with no water available during low flows, but water available in some systems during median and high flows. Within London, some water is abstracted from the principal London Basin Chalk aquifer. Water is mainly used for commercial purposes but also for industry and farming.

Regulating services (water purification, air quality maintenance and climate regulation)

- **Climate regulation**: Significant carbon storage is provided by extensive areas of salt marsh, reedbeds, mudflats and grazing marsh.

- **Regulating soil quality**: The dominant loamy and clayey soils of the coastal flood plain provide fertile arable land when adequately drained, although they are increasingly under threat from loss due to sea level rise. Compaction of seasonally wet soils may reduce water infiltration and increase surface water run-off.

- **Regulating water quality**: Chemical status is mixed with the north of the NCA classed as good, and the Greater London and Kent areas as failing, and this is reflected in the status of coastal and estuarine waters. The ecological quality of the area's rivers is generally moderate, although some towards London are poor and the ecological potential of the estuary waters again reflects this assessment, apart from the mouth of the Colne Estuary and Hamford Water which have achieved good status. The quality of water in the NCA is highly dependent on waters upstream.

- **Pollination**: The NCA is important for some of the UK’s rarest bumblebees and three priority species are strongly associated with its dry, flower-rich habitat: the shrill carder bee, brown-banded carder bee and moss carder bee. Coastal habitats (including grazing marsh) and open mosaic habitat on brownfield sites provide important nectar sources and nesting opportunities for pollinators.
Regulating coastal flooding and erosion: The major risk of flooding in the area comes from the sea, with large areas of reclaimed arable land and grazing marsh below sea level and maintained by sea defences. Flood defence structures occur all along the estuary coastline. The extensive coastal habitats, especially salt marsh, provide an important natural defence against flooding by reducing the impact of wave action on the coastline and its defences. Coastal habitats are, however, being lost at a rapid rate due to coastal squeeze. Shoreline Management Plans assess coastal processes and the management of the coastline. Areas of the estuary have also been identified as potential sites to store tidal waters during very large surge tides to help prevent increased flooding of the River Thames. There is the opportunity to create compensatory coastal habitat arising from losses identified in plans such as TE2100 (the Environment Agency’s strategic plan for managing flood risk in the Thames Estuary).7

Cultural services (inspiration, education and wellbeing)

- Sense of place/inspiration: A sense of place is provided by the flat, open and expansive estuarine landscape where distinctive shallow creeks, drowned estuaries, low islands, mudflats and broad tracts of tidal salt marsh and reclaimed grazing marsh provide a strong sense of remoteness and skylines dominate the views. Historic settlement and field patterns and coastal military landmarks add a human aspect, and a large and varied bird population adds movement to the landscape. The close proximity of the highly urbanised and industrial areas of East London provides a marked contrast to the remoteness of the coastal marshland.

- Sense of history: The distinctive military associations along the coastline, including the naval dockyards, provide the most evident sense of the historical importance of the area in protecting London from invasion by the sea. Other important archaeological features include ancient sea walls, iron-age/Roman salt mounds, bronze-age funerary monuments and the Saxon minster churches. London itself provides a rich source of history.

- Tranquility: High levels of tranquillity remain in the parts of the NCA which are not in proximity to London. Tranquil areas are generally associated with the expansive and remote mudflats and coastal marshes.

- Recreation: Recreational opportunities are provided by the Thames Path National Trail, Saxon Shore Way and 1,136 km of public footpaths. This will be enhanced by the current development of the Thames Estuary Path. Recreation is also provided by popular beach resorts, fossil-hunting sites and various water-based recreational activities including fishing and boating. The internationally important coastal habitats also attract many visitors for their birdwatching opportunities.

- Biodiversity: The estuary is of international importance for its coastal habitats and over 15,000 ha are covered by international designations including one Special Area of Conservation, ten Special Protection Areas and ten Ramsar sites. The estuary contains significant areas of salt marsh (the largest remaining area in England), intertidal sand and mudflats, sand dunes, shingle, shell and sand banks, subtidal sand and mud, and extensive areas of coastal grazing marsh. The salt marsh and grazing marsh habitats are internationally important for their diverse assemblages of wetland plants and invertebrates, such as pedunculate sea-purslane.

The estuary supports hundreds of thousands of wintering waterfowl and breeding wetland birds, notably dark-bellied Brent geese. Intertidal and subtidal coastal habitats support a variety of marine wildlife. Arable land within the NCA provides important bird foraging and breeding habitat and its field margins support invertebrate species. Brownfield sites contain a rich mosaic of habitats supporting nationally important invertebrates, some found only in this area of England.

**Geodiversity:** The NCA contains geological sites of significant importance both nationally and internationally. The Tertiary sediments of sands and clays that comprise the eastern edge of the London Basin contain fossils of both national and international importance. The NCA also contains important stratigraphic evidence of a major glacial event 450,000 years ago which was responsible for the shift in the course of the River Thames, and sites that preserve evidence of past climates, landscapes and biodiversity along with evidence of early humans and the landscape they lived in around 400,000 years ago. The NCA coastline is of major geomorphological interest for its system of estuaries characterised by a maze of winding, shallow tidal creeks that dissect islands, mudflats, sandflats and salt marsh where natural active coastal processes can be observed.

Tertiary sediments at the Naze SSSI in Essex, which contain fossils of international importance.
For example, by:

- Responding to the threat of rising sea levels due to climate change by identifying areas for managed realignment of coastal defences where appropriate, creating new intertidal habitats to mitigate for any losses caused by coastal squeeze, while maintaining natural coastal processes.
- Effectively managing the mosaic of coastal, freshwater and terrestrial habitats to maintain their biodiversity value, while seeking opportunities to re-link fragmented habitats to create a robust wildlife network with enhanced adaptation to climate change.
- Protecting intertidal and subtidal habitats to maintain their importance for marine wildlife.
- Supporting and ensuring the continuation of the natural dynamic coastal processes of accretion and erosion that shape the estuary, encouraging natural regeneration of intertidal habitats.
- Maintaining areas of intertidal habitat as a buffer between wave action and sea defences to reduce flooding and protect inland areas.
- Continuing to support, monitor and research coastal geomorphological processes to improve our understanding and inform future coastal management decisions.
- Improving sustainable public access to areas of biodiversity, geological and geomorphological interest, incorporating interpretation to raise awareness, increase understanding and enhance visitor enjoyment, while protecting habitats and species that are vulnerable to disturbance.
- Protecting the existing designated area network and working in partnership with existing local projects, initiatives and organisations, including the Nature Improvement Area, to deliver integrated, effective conservation management on a landscape scale.
- Enabling carbon storage provided by extensive areas of salt marsh, reedbeds, mudflats and grazing marsh by maintaining their good condition through sustainable management.
- Recognising the need for, and identifying sites for the creation of, compensatory habitat to mitigate for losses identified in Shoreline Management Plans including TE2100 (the Environment Agency’s strategic plan for managing flood risk in the Thames Estuary).
- Supporting projects and programmes that seek to secure the future of species limited to and closely associated with the marshland, coastal and estuarine habitats of the area, for example the recovery programme for the pedunculate sea-purslane.
For example, by:

- Working with the local farming community to sustainably manage the agricultural landscape, safeguarding future food production and the long-term viability of agriculture and yields, while enhancing key ecosystem services.

- Working with the fishing industry to ensure the sustainable future management of fishing and shellfish grounds.

- Working with the farming community to ensure the sustainable management of internationally important grazing marsh habitat, and the sympathetic management of arable land to benefit wildlife, including the use of field margins, conservation headlands, and pollen and nectar margins for pollinator species.

- Ensuring that land outside designated areas used by bird populations for foraging and roosting is adequately protected and managed.

- Improving the area for important pollinators, including rare bumblebee species, by sympathetic habitat management, habitat creation and strategic conservation of flower-rich brownfield sites.

- Maintaining water availability by using integrated water and land management practices to slow run-off and increase infiltration to aquifers by reducing soil compaction and increasing soil organic matter on agricultural land, and using targeted drainage management where possible to increase water availability in periods of low rainfall.

- Protecting aquifer water quality by adopting land management practices and integrated water management policies to minimise risks through pollution, contamination, saline intrusion and run-off.

- Increasing carbon storage capacity by creating new wetland habitats including reedbeds, and by increasing organic matter in soils using land management practices such as including fallow within rotations, overwintering stubbles, and pollen and nectar strips.

- Managing the network of drainage ditches and drains in flood plain areas to provide effective floodwater management during storm events, thereby decreasing flood risk while improving the habitat for freshwater species.

- Creating permanent buffer strips along ditches and watercourses to reduce soil erosion and help prevent deterioration in water quality caused by high nutrient levels by slowing run-off and capturing sediment.

- Conserving the historic character of the area, and features of heritage interest, including the ancient patterns of reed-filled drainage ditches that crisscross reclaimed farmland and the medieval settlement patterns of isolated farms and villages on higher land.
For example, by:

- Conserving the wild and remote character of the estuary by maintaining the extent and quality of the semi-natural coastal habitats and creating new habitat where feasible.
- Protecting, interpreting and promoting heritage and archaeological assets and, where appropriate, increasing access to the distinctive military landmarks along the coastline, reflecting the historical importance of the area in protecting London from invasion by the sea, connecting communities with their local heritage and encouraging tourism.
- Encouraging opportunities for people to connect with the natural landscape and its wildlife through local nature reserves, volunteering, working with local schools and community groups, and activities such as birdwatching and visiting the internationally important coastal habitats of the estuary.
- Encouraging sustainable recreational opportunities within the estuary by encouraging access to characteristic features of the landscape, including internationally important coastal habitats and species, estuary waters and historic assets, and incorporating interpretation to raise awareness, increase understanding and enhance visitor enjoyment.
- Encouraging the development of new public rights of way networks where appropriate, to connect urban communities to rural areas and increase recreational opportunities.
- Managing increasing visitor pressure by promoting the sustainable recreational use of appropriate areas while protecting fragile habitats, species, geological and historic features and taking recreation disturbance issues into account.
- Conserving and interpreting archaeological earthworks and sub-surface archaeology, while recognising the potential for undiscovered remains.
- Continuing to research, monitor and record coastal geomorphological processes that shape the estuary, to improve our understanding and inform future management.
- Protecting and providing access to and interpretation of important geological sites, including exposures of fossils, as a source of recreation.
For example, by:

- Ensuring that local development plans include the sustainable management of water resources and promote measures to reduce adverse impacts on water quality in the future, including the use of sustainable urban drainage systems and sewage treatment options, reducing nutrients from diffuse pollution to improve water quality and increasing groundwater recharge.
- Planting sustainably managed broadleaved woodland, and potentially miscanthus, to screen new and existing urban and industrial developments and to help protect the tranquillity of the estuary, while taking care not to impact on its open, expansive views.
- Ensuring that new developments adequately incorporate features to make a positive contribution to biodiversity and climate change, including increasing the areas of green space in more developed parts of the estuary through initiatives such as Green Grids.
- Conserving and managing disused mineral and landfill sites to benefit biodiversity and increase recreational opportunities, while retaining important biodiversity and geological features.
- Raising awareness of the importance of brownfield sites in the Thames Gateway for biodiversity, and conserving key open mosaic habitats and species through site protection, mitigation and habitat creation.
- Limiting development, including increases in light and noise pollution, in more remote parts of the NCA that currently score highly for tranquillity.

- Implementing sustainable Shoreline Management Plans to reduce flood risk from climate change, including managed realignment schemes, identifying and safeguarding areas of functional flood plain needed for strategic flood storage in the Thames Estuary in local development plans, ensuring a catchment-scale approach to flood risk management.
- Recognising the need for, and identifying sites for the creation of, compensatory habitat to mitigate for losses identified in Shoreline Management Plans including TE2100 (the Environment Agency’s strategic plan for managing flood risk in the Thames Estuary).

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Jaywick holiday plotland development in Essex.
Natural England is here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.


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111: Northern Thames Basin

National Character Area profile:

Introduction & Summary

Description

Opportunities

Key facts and data

Landscape change

Analysis

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There are a wide variety of semi-natural habitats in the area and these support many important species. However, the habitats have become fragmented over time and a landscape-scale approach is needed to connect them so that they can be sustained and provide beneficial functions including; increasing pollinating insects, acting as flood defences and water storage areas, preventing soil erosion and helping to improve soil and water quality as well as maintaining the area’s sense of place and history. This NCA includes many internationally and nationally designated sites including 72 Sites of Special Scientific Interest (20 of which are designated wholly or in part for their national geological importance), 6 Ramsar sites, 6 Special Protection Areas, 3 Special Areas of Conservation and 2 National Nature Reserves. The majority of these sites are estuaries and woodlands. The estuaries support migrating and overwintering birds as well as rare or locally important plants and invertebrates. The selected woodlands are ancient and have a long history of management through coppicing and pollarding, which has allowed rich ground flora to develop and also supports rare mosses and deadwood invertebrates.

The Northern Thames Basin is a diverse area which extends from Hertfordshire in the west to the Essex coast in the east. It is separated from the North Sea and Thames Estuary by a narrow band of land that makes up the Greater Thames Estuary National Character Area (NCA). Included within this NCA are the suburbs of North London and also historic towns and cities including St. Albans and Colchester, as well as new and planned towns such as Welwyn Garden City, Hatfield and Basildon. Although arable agriculture is a large industry in the area the soil quality ranges from good to poor quality. The London Clay provides a poor quality soil that becomes waterlogged in winter and cracks and shrinks in summer. Better quality soil is found in areas that contain alluvial deposits from the Thames and other rivers in the area as they formed and changed position over time.

The Northern Thames Basin is an area rich in geodiversity, archaeology and history and diverse landscapes ranging from the wooded Hertfordshire plateaux and river valleys, to the open landscape and predominantly arable area of the Essex heathlands, with areas of urbanisation mixed in throughout. Urban expansion has been a feature of this area since the 16th century when wealthy merchants who were conducting business in London built homes on its outskirts, mainly in the Hertfordshire area. This trend increased dramatically from the mid-19th century as infrastructure improved and people could travel to work in London from the surrounding areas in an hour or less. This has put increased pressure on the area in terms of extra housing developments, schools and other necessities for expanding populations, with a consequential reduction in tranquillity. Tranquil areas can still be found in parts of Hertfordshire and Essex in areas that have a more dispersed settlement pattern broken up by arable land and semi-natural habitats.
The main changes to the area have resulted from increased construction and commercial-scale farming. Both of these have increased pressures on water availability, water flow, soil quality, biodiversity and sense of place. Although housing, other construction and agriculture are significant for the area it is important that these are developed in a sustainable way so that predicted changes in climate and the effects on the area’s character are considered and sense of place and history are preserved.

The main opportunities available to this area are the continuation of the agricultural tradition, but within this land management should consider methods that are more sustainable in terms of water use and soil quality in order for it to continue to be a viable industry in the future. The areas of various semi-natural habitats also present opportunities to improve water storage and soil quality for surrounding agricultural land as well as to increase advantageous species that will aid pollination and reduce pest species. In addition to this the woodlands in the area could be an important resource to supply timber and fuel to the local area if they were managed effectively.
Statements of Environmental Opportunity

**SEO 1:** Manage rivers and river valleys to protect and improve water quality and help to alleviate flooding in the downstream urban areas, while also helping to improve aquifer recharge and provide a sufficient store of water to meet future need, especially with predicted climatic changes. Conserve the riparian landscapes and habitats, for their recreational and educational amenity for their internationally significant ecological value.

**SEO 2:** Manage the agricultural landscape and diverse range of soils which allow the Northern Thames Basin to be a major food provider, using methods and crops that retain and improve soil quality, water availability and biodiversity.

**SEO 3:** Protect and appropriately manage the historic environment for its contribution to local character and sense of identity and as a framework for habitat restoration and sustainable development, ensuring high design standards (particularly in the London Green Belt) which respect the open and built character of the Thames Basin. Enhance and increase access between rural and urban areas through good green infrastructure links to allow local communities recreational, health and wellbeing benefits.

**SEO 4:** Manage and expand the significant areas of broadleaf woodland and wood pasture, and increase tree cover within urban areas, for the green infrastructure links and important habitats that they provide, for the sense of tranquillity they bring, their ability to screen urban influences and their role in reducing heat island effect and sequestering and storing carbon.
Description

Physical and functional links to other National Character Areas

The Northern Thames Basin forms the rising land above the low-lying marshy landscapes adjoining the coast and estuaries of the Greater Thames Estuary and the Suffolk Coast and Heaths National Character Areas (NCAs) to its east and south-east extent and enjoys associated views of these areas. Chalk geology commonly underpins this NCA and the neighbouring Chilterns and South Suffolk and North Essex Claylands NCAs to the west and north; The Chilterns, a formation of chalk hills and plateaux with a prominent escarpment, offers views across to this similarly elevated NCA. To the south-west the Thames Valley NCA forms a wedge-shaped area containing the open Thames flood plain surrounded by rolling clay farmland. Directly south is the Inner London NCA on the banks of the Thames where the river valley widens out into a broad flood plain.

The London Basin Chalk aquifer, which underlies much of the western section of the Northern Thames Basin NCA, is the principal aquifer supplying water to Inner London. The Chalk is confined in the basin by the overlying Tertiary formations of London Clay, which means recharge largely occurs in the extensive Chalk outcrop of the Northern Thames Basin and into the Chilterns NCA to the north and the North Downs to the south.

A small part of the Dedham Vale Area of Outstanding Natural Beauty (AONB) straddles the eastern edge of this NCA, the more northerly South Suffolk and North Essex Claylands and the south-western tip of the Suffolk Coast and Heaths NCA. The urban character in the south of the Northern Thames Basin continues into the Thames Valley and Greater Thames Estuary NCAs.

The landscape becomes extensively urbanised towards the Inner London NCA and includes major transport links from outside the area such as the East Coast mainline railway, M11 which connects to London and Cambridgeshire, the M1 which passes north-west through the Chilterns to the Midlands beyond, and...
the M25 which provides circular access to all parts of London and the south. Important A roads providing wide physical links include the A12 and A120 and the A1(M), which has a similar route to the M1 but diverts towards the East Anglian Chalk and Bedfordshire Claylands NCAs.

Many watercourses feed in or flow from surrounding areas, often along courses incised into boulder clays or tills, for instance the Blackwater and Colne flowing from the South Suffolk and North Essex Claylands and the Ver and Lea from the westerly Chilterns NCA which flow into Hertfordshire before joining the Thames in inner London. These, along with others, form a series of river valleys draining south to the Thames and east to the North Sea and Thames Estuary, including the Roding, Wid, Chelmer, Roach and Crouch. Also notable is the Grand Union Canal, which runs from here through several other NCAs northwards to Birmingham.

**Distinct areas**

- Hertfordshire plateaux and river valleys
- Essex wooded hills and ridges
- London Clay lowlands
- Essex heathlands
111: Northern Thames Basin

Key characteristics

■ The landform is varied with a wide plateau divided by river valleys. The prominent hills and ridges of the 'Bagshot Hills' are notable to the north-west and extensive tracts of flat land are found in the south.

■ Characteristic of the area is a layer of thick clay producing heavy, acidic soils, resulting in retention of considerable areas of ancient woodland.

■ Areas capped by glacial sands and gravels have resulted in nutrient-poor, free-draining soils which support remnant lowland heathlands, although these are now small. Areas that have alluvial deposits present are well drained and fertile.

■ The water bearing underlying Chalk beds are a main source of recharge for the principal London Basin Chalk aquifer.

■ A diverse landscape with a series of broad valleys containing the major rivers Ver, Colne and Lea, and slightly steeper valleys of the rivers Stour, Colne and Roman. Numerous springs rise at the base of the Bagshot Beds and several reservoirs are dotted throughout the area.

■ The pattern of woodlands is varied across the area and includes considerable ancient semi-natural woodland. Hertfordshire is heavily wooded in some areas as are parts of Essex, while other areas within Essex are more open in character. Significant areas of wood pasture and pollarded veteran trees are also present.

■ The field pattern is very varied across the basin reflecting historical activity. Informal patterns of 18th-century or earlier enclosure reflect medieval colonisation of the heaths. Regular planned enclosures dating from the Romano-British period are a subtle but nationally important feature on the flat land to the south-east of the area. In the Essex heathlands 18th- and 19th-century enclosure of heathlands and commons followed by extensive 20th-century field enlargement is dominant.

■ Mixed farming, with arable land predominating in the Hertfordshire plateaux, parts of the London Clay lowlands and Essex heathlands. Grasslands are characteristic of the river valleys throughout. Horticulture and market gardening are found on the light, sandy soils of former heaths in Essex, particularly around Colchester, along with orchards, meadow pasture and leys following numerous narrow rivers and streams.

■ The diverse range of semi-natural habitats include ancient woodland, lowland heath and floodplain grazing marsh and provide important habitats for a wide range of species including great crested newt, water vole, dormouse and otter.

■ Rich archaeology including sites related to Roman occupation, with the Roman capital at Colchester and City of St Albans (Verulamium) and links to London. Landscape parklands surrounding 16th- and 17th-century rural estates and country houses built for London merchants are a particular feature in Hertfordshire.

■ The medieval pattern of small villages and dispersed farming settlement remains central to the character of parts of Hertfordshire and Essex. Market towns have expanded over time as have the London suburbs and commuter settlements, with the creation of new settlements such as the pioneering garden city at Welwyn and the planned town at Basildon.

■ Brick-built dwellings are characteristic from the late 17th century onwards. Prior to this dwellings and farm buildings tended to be timber built with weatherboarding, now mainly painted white but traditionally black or tarred, and whitewashed plaster walls.
Northern Thames Basin today

The Northern Thames Basin is a large and diverse landscape with a similar overarching character of agricultural land, interspersed with woodland, dissected by rivers and influenced by the urban areas of North London. It falls naturally into several distinct areas, shaped by their geology, topography and land use which are called: Hertfordshire plateaux and river valleys, Essex wooded hills and ridges, London Clay lowlands and the Essex heathlands.

The Hertfordshire plateaux and river valleys to the north-west of the NCA are high, broad arable plateaux divided by wooded and pastured valleys which have a mainly rural feel with, on the whole, small developments. Rivers that drain the plateaux are the Colne, Ver and Lea and the soils are mainly underlain with London Clay, resulting in heavy, acidic, nutrient-poor soils with poor drainage; however, in the river valleys alluvial deposits provide fertile and well-drained soils. The area is underlain by extensive Chalk beds of the principal London Basin chalk aquifer, which provides the main source of water for London. Recharge of the aquifer largely occurs from the Chalk as water flows underground to London from the Chilterns, and water quality and availability within the aquifer are largely dependent on land management practices in the area.

While the plateaux are predominantly in arable use, the valleys by contrast contain areas of pasture and have a more intimate character, although some have been heavily modified by reservoirs, gravel workings, landfill sites and river realignments. The valleys contain all the main settlements within the area. Field boundaries are dominated by informal enclosure patterns of the 18th century, with thorn hedges relating to rationalisation and amalgamation of this pattern in the 18th and 19th centuries. It is a well-wooded landscape, especially to the east, with a number of ancient broadleaved woodlands including oak and hornbeam coppice. Isolated areas of remnant heathland survive within commons. The area retains a substantial legacy of funerary monuments and settlement sites associated with the prehistoric period and was intensively settled in the Roman times, with a number of major and minor towns (including St Albans and Welwyn) having a Roman origin. Today, a medieval pattern of small villages and dispersed farming settlement is central to the area's character and there is good survival of medieval timber-framed houses and barns, moated sites and small medieval castles. The 16th and 17th centuries saw the growth of rural estates and country houses for London merchants and the landscape parklands surrounding these houses are a particular feature of the
area today. The area merges with the outer London suburbs of Enfield, Barnet, Harrow, Hillingdon and Hounslow. It also contains many large towns including Watford, Hatfield, Hertford and St Albans which have developed as commuter settlements as well as the pioneering and influential garden cities of Ebenezer Howard at later Welwyn. Road and rail routes plus utility infrastructure are now dominant features of some parts of the area. To the far south the area is heavily urbanised as it becomes part of London, where housing, industrial areas and shops dominate. Green areas are restricted to city parks, grassed areas in front of housing developments and residents’ gardens.

The Lea Valley within the area has been exploited for supplying London with water and for generating power for a wide range of industries, together with extraction of sand and gravel. This historic use has underpinned its current importance for wildlife. The Lower Lea valley, which lies in the south of the area and in the adjacent Inner London NCA, was heavily regenerated for the 2012 London Olympics, bringing ecological landscape, recreational and economic benefit.

The designations afforded to this area are Ramsar, which is an international designation for wetland habitats, and Special Protection Area (SPA), which is a European designation; also, within the Lea Valley and the surrounding areas there are many Sites of Special Scientific Interest (SSSI). The main reasons for the designations within the Lea Valley area are its importance as a wetland site; wetlands and reservoirs occupy a large part of the valley and support many important overwintering waterfowl. The species of particular importance are bittern, which over-winter in the reedbeds in the area which at peak times can support around 6 per cent of the UK’s population, as well as gadwall and shoveler which also over-winter here (representing almost 2 per cent of their overwintering European population). There are also two important woodland complexes within the area: Wormley and Hoddesdon Park Wood, which is a Special Area of Conservation (SAC) and Broxbourne Wood, which is a National Nature Reserve (NNR). Wormley and Hoddesdon Park Wood is an almost exclusively hornbeam woodland which has been managed through coppicing with oak standards. The ground flora supports bluebells and great wood-rush as well as important mosses. Broxbourne Wood is an ancient woodland which supports the rare butterfly purple emperor and also has historical value as the area has been managed since Roman and medieval times as a source of wood.

The Essex wooded hills and ridges lie to the east of the Hertfordshire plateaux and river valleys to the north of the NCA. This area has several ridges where the soils are acidic and stony and have low fertility but are easily cultivated. This and the wet soils at the base of the Bagshot Beds limit the agricultural potential for the hill slopes, but farmland can be found in the lower-lying areas. The ridges of Epping Forest, Brentwood to High Wood, Thorndon to Billericay and Danbury to Wickham Bishops are dissected by the river valleys of the Roding, Wid and Chelmer. The Ter, Brain and Blackwater also contribute to the drainage of the area and Hanningfield Reservoir provides an area of open water.

This area is in the central part of the NCA, and extends roughly from Epping Forest in the west to Danbury in the east. It is a transitional landscape between the London Clay lowlands and the South Suffolk and North Essex Claylands NCA. It is formed by a series of hills and ridges created by the resistant Bagshot Sands which rise up above the clay lowland as at Epping Forest, Brentwood to High Wood, Thorndon to Billericay and Danbury to Tiptree. These well-wooded hills contain extensive areas of ancient woodland, remnant wood pasture and secondary woodland on commons as well as more recent plantations. These include the substantial wooded areas of Hainault Forest and Epping Forest, formerly Royal Forests, now managed for conservation and recreation.
Historically, settlement was sparse with scattered villages associated with the commons and areas of wood pasture. Today, settlement is dominated by large, 20th-century urban areas. The A12, the former Roman road connecting London with Colchester, is a major commuter route through the area.

Within this area Epping Forest is an important site for wildlife and as such has been designated as an SAC. The main reason that this site is important is the beech forests found here and the rare species that these support – rare mosses and also fungi and deadwood invertebrates owing to the high number of veteran trees present. Also found here are significant populations of stag beetle.

The London Clay lowlands lie south and east of the Essex wooded hills and ridges and are characterised by the heavy, acidic soils associated with this area, which is the dominant feature of the London Basin, although lighter soils can be found on some footslopes. The heavy soils are difficult to drain and easily become waterlogged. The area is drained by numerous rivers such as the Roach, Crouch and Blackwater, which merge to create the flat marshes to the east. The large expanse of open water at Abberton Reservoir, formed by the damming of the Layer Brook on its way to the Roman River, is a notable feature.

This area embraces the outer east London suburbs at Grays and Thurrock and extends eastwards to the Dengie Peninsula. It includes the town of Basildon.

This area is essentially a flat to gently undulating lowland landscape. Local variation is created by the Laindon and Hockley Hills, formed of the more resistant sandy Bagshot Beds which cap the clay.

The east of the area is characterised by a planned Roman landscape with a rectilinear pattern of fields which is a nationally important but subtle feature of the landscape today. The heavy clays were difficult to work and remained in pasture; however, during the 1950s and 1960s the land was improved so that arable is now also a dominant land use. By contrast, the hills around Laindon, Hockley and Rayleigh are relatively well wooded. In addition, 19th- and 20th-century plantations and regenerated, formerly urbanised plotland landscapes add a further wooded aspect to parts of the area. The landscape today has an urban character, including the expanded resort of Southend, the 1950s planned
town of Basildon and extensive 20th-century commuter settlements such as at Laindon and Rayleigh. Large areas of recreational land including parkland, golf courses and horse paddocks serve the urban population.

This area has many important wetland sites including Abberton Reservoir (designated as a Ramsar site and SPA) and also two reservoir areas recognised as SPA, the Crouch and Roach Estuary and Blackwater Estuary: however, only a small proportion of the two estuaries is found in this NCA with the majority falling within the Greater Thames Estuary. Abberton Reservoir is a significant site as it supports many important overwintering waterfowl such as golden plover, gadwall, shoveler and teal, as well as breeding cormorant, and also qualifies as a wetland of importance as it supports more than 20,000 waterfowl. The Crouch and Roach Estuary is an important site for overwintering dark-bellied Brent goose and the Blackwater Estuary (which is also an NNR) is important for overwintering avocet, golden plover, hen harrier, dark-bellied Brent goose, redshank and breeding little tern: it too is recognised as a wetland of international importance because it supports more than 20,000 waterfowl.

The Essex heathlands lie north-east of the London Clay lowlands and Essex wooded hills and ridges, in the north-east of the NCA. The geology of the area is predominantly sands and gravels, which were deposited by the Thames as it changed its course over time to its present location. Around the Tendring area deposits of wind-borne silty loam overlie the sands and gravels but overall the soils are light and free draining. The area is relatively flat with contrast provided by the steep-sided slopes of the Stour, Colne and Roman river valleys which, along with their tributaries, drain the plateau and are eventually discharged into the North Sea.

The east of this area is broadly bounded by the Stour Estuary to the north and the Thames Estuary to the south and east, and covers the land around Colchester and the Tendring plain. It is separated from the North Sea and Thames Estuary by a narrow strip of coastal marshes which form part of the Greater Thames Estuary.

The area consists of a broad, sandy plateau created by ancient river deposits from the Thames. Historically it was dominated by extensive heaths and commons, although these are now restricted to isolated fragments of heath and scrub within an intensively farmed and largely arable agricultural landscape. Agriculture includes improved grassland and arable fields as well as distinctive areas of horticulture and market gardening associated with the light, sandy soils of former heaths. Orchards are a feature around Colchester.

A pattern of small but intricate creeks and valleys breaks up the plateau edges where the land falls to the Thames Estuary along the coast and extends the coastal influence inland. The narrow river valleys which incise the plateau also create areas of contrasting enclosed landscape, with abundant woodland and meadows, some with wider flood plains and wetland vegetation. Much of the woodland is ancient; however, in general the plateau has an open, treeless character owing to the loss of field boundaries.

Vernacular buildings are constructed of timber, with either weatherboarding or whitewashed plaster. The principal settlement is Colchester, the walled Roman capital and England’s oldest town, dating from 49 AD.

Within this area is Hamford Water, designated as a Ramsar site as well as an SPA and SSSI owing to the important waterfowl that use it. Many species over-winter here, including avocet, golden plover, ruff, black-tailed godwit, grey plover, ringed plover and teal – up to 25 per cent of the UK population of overwintering avocet has been recorded here. In addition, little tern use it
as a breeding site and the area is considered to be a wetland of international importance as it supports more than 20,000 waterfowl. Part of the Colne Estuary is in this area (although the majority of it falls within the Greater Thames Estuary NCA); this is also a Ramsar site and SPA, and of national importance for geology. Similar species are found here to those found in Hamford Water, and in addition overwintering hen harrier, dark-bellied Brent goose and redshank. This area is also considered a wetland of international importance and includes a small part of the predominantly pastoral character of the Dedham Vale AONB. St Osyth marsh is an important site for salt marsh morphology dating back around 4,000 years, while geological exposures at East Mersea show important deposits beneath gravels which are attributed to the Thames and Medway system and are of considerable importance in Pleistocene studies.

The whole area is a combination of countryside mixed in with urban areas, with important habitats and species, especially woodland and wetland habitats and associated species. The rural area acts as a recreational opportunity for those living in the surrounding towns and cities and the urban areas offer work and recreation opportunities for those living in more isolated villages and settlements in the rural environment. There is strong historical association throughout the area owing to its close proximity to London and the Roman occupation of Colchester and the links that this creates within the area as a whole. Dedham Vale is strongly associated with the artist John Constable whose paintings were inspired by the landscape.

The landscape through time

The NCA is the northern part of the London Basin, a broad, concave fold which opens out towards the East Coast. This structure means that the oldest rock strata are at the periphery, with younger deposits towards the centre. Chalk deposited in the tropical seas of the Cretaceous Period (65–95 million years ago) underlies the area and forms the bedrock of adjacent NCAs, extending beneath London and providing the major aquifer for the capital. The folded structure, a syncline, developed some 20–40 million years ago during the Tertiary Era (2–64 million years ago) at the time that the Alps were being formed in southern Europe. During this period of uplift, the area became dry land and rivers developed, including the proto-Thames along a course to the north of its present location. Overlying the chalk is a series of sands and mudstones (Reading Beds) deposited during the Tertiary Era by ancient river systems that drained into the basin. The thick layer of London Clay which characterises this NCA today was laid down as a sequence of fossiliferous, shallow marine sediments under semi-tropical seas some 55 million years ago. Overlying the London Clay are sands and clays of the Bagshot, Barton and Bracklesham Beds.

The diverse geology has considerable influence on the landscape. The London Clays are heavy and typically difficult to work, resulting in the retention of pasture and considerable areas of ancient woodland. The lighter, sandy soils of the Bagshot Beds are likely to have remained relatively open and unwooded since prehistoric times and areas of remnant heath are a feature, particularly within the Essex heathlands and wooded hills. In Essex, the harder rocks of Bagshot Beds deposits form distinctive features, creating low hills and ridges such as at Danbury Hill, rising to a high point of 116 m.

The Quaternary deposits which overlie the clay provide an insight into Britain’s most recent geological past. The Anglian ice sheet which reached
the outskirts of London approximately 500,000 years ago (evidenced at Hornchurch SSSI) advanced to the rim of the basin, leaving a series of glacial sands, gravels and clays and moving the course of the Thames southwards to its present location. Quaternary deposits have yielded artefacts illustrating early human presence (approximately 300,000 years ago) in the Thames Basin and more recently the evolution of prehistoric society. By the time that Britain was cut off as an island during the Holocene, humans had settled along the margins of the Thames and its tributaries. The light, sandy soils of the Essex heathlands to the east are particularly rich in buried archaeological remains associated with prehistoric and Roman occupation. Funerary monuments and settlement sites visible as cropmarks and earthworks are also a feature of the Hertfordshire plateaux and valleys and were extensively cleared and occupied in the prehistoric period. Here, the limited survival of coaxial field systems potentially of bronze-age origin is highly significant.

Roman occupation has left a significant impact on the area. A major road, now the A12, connected the Roman capital at Colchester to London. Other major and minor Roman towns and cities include St Albans and Welwyn and there are extensive villa estates, notably in the west of the area (in Hertfordshire). Also in Hertfordshire, the distinctive settlement pattern of ‘homestead moats’ aligned with the grid pattern is thought to be influenced by Roman estate management techniques. The London Clay lowlands are also characterised by planned landscapes created during the Roman period, forming a still distinct rectilinear pattern of enclosure on the Dengie Peninsula and in the area between Thurrock and Wickford. By comparison, the central part of the NCA (the Essex wooded hills) was relatively sparsely settled. Orchards were established around Colchester, as well as a significant area of meadow pasture and leys following the numerous narrow rivers and streams.

Throughout the Northern Thames Basin, settlement is essentially based on a pattern of dispersed nucleated villages and farming settlements established in the medieval period. Post-Roman decline in Hertfordshire is evident in the number of medieval place names and settlement patterns which imply re-colonisation and clearance of a wooded landscape and late-medieval timber-framed houses and moated sites are a distinctive feature. In the Essex heathlands the dispersed settlement pattern was established within extensive tracts of heathland. In the London Clay lowlands some larger villages and small towns developed in the medieval period associated with local centres of civil
or religious authority. The exception to this dispersed pattern is in the Essex wooded hills where settlement remained sparse in the medieval period and was associated with the extensive commons or management of wood pasture and other resources belonging to medieval monastic houses.

The 16th, 17th and 18th centuries saw the growing influence of London, particularly in Hertfordshire, with the growth of market towns and rural estates and country houses for London merchants. Profitable farming conditions saw the demise of much medieval parkland in the 17th and 18th centuries, alongside the growth of substantial farming estates for the London merchants, rising nobility and gentry. The remaining associated parkland landscapes form a distinctive feature of the area today, particularly within the Hertfordshire plateaux area.

Industries based on agricultural produce (such as malting and brewing, paper making, hat making and tanneries) contributed to the prosperity of the market towns and developed further in the 19th century, aided by the growth in communications. This also stimulated the development of commuter settlements in the 19th and 20th centuries, and the urbanisation and expansion of existing towns and villages. The creation of new settlements is a particular feature, with the pioneering garden city at Welwyn and the planned 1950s town of Basildon. The edge of London has also expanded outwards with suburbs now embracing former villages. Communication routes – motorways (the M1, A1(M) and M11), main roads and railways running north–south connecting to London, plus the M25 radial route – are dominant features.

In the 1970s Dutch elm disease transformed many parts of the landscape, with the loss of tree and woodland cover, and the area continues to change with pressure for housing and industrial growth associated with, for instance, the Thames Gateway, Haven Gateway and other strategic growth points such as Chelmsford, identified in the East of England Improvement Plan, the Lea Valley regeneration area (including the Olympics legacy) and changes in the agricultural landscape.
Ecosystem services

The Northern Thames Basin NCA provides a wide range of benefits to society. Each is derived from the attributes and processes (both natural and cultural features) within the area. These benefits are known collectively as 'ecosystem services'. The predominant services are summarised below. Further information on ecosystem services provided in the Northern Thames Basin NCA is contained in the ‘Analysis’ section of this document.

Provisioning services (food, fibre and water supply)

■ Food provision: This is a predominantly arable landscape with arable crops covering 53 per cent of the area – primarily wheat and oilseed rape. The area also includes a sizeable sheep flock (approximately 18,800 breeding ewes in 2007) but relatively few cattle (only approximately 2,600 breeding dairy cattle and 3,200 breeding beef cattle), all of which have declined in number since 2000.

■ Timber provision: The area only has 6 per cent woodland cover. This resource is unevenly distributed and some parts of the NCA have a relatively high woodland cover. The main areas of commercial timber are the coniferous plantations situated on former lime tree woods in the river valleys of Hertfordshire; these cover some 0.7 per cent of the total area of the NCA.

■ Genetic diversity: Remnant traditional orchards provide a genetic stock of old apple varieties, many of which are no longer commercial. There are also rare animal breeds associated with the area including the British Saddleback Pig (which is partially bred from the Essex Pig), White Park Cattle, Red Poll Cattle, Jacob Sheep, Bagot Goat, Hackney Horse, Hackney Pony, shire horses and British Percheron Horse.

Regulating services (water purification, air quality maintenance and climate regulation)

■ Climate regulation: Soils, woodland and hedgerows are likely to be significant stores of organic carbon across this area.

■ Water availability: The Chalk which underlies the west of the area is extensively abstracted for drinking water in the NCA and provides a main source of recharge for the principal aquifer supplying Inner London.

■ Regulating soil erosion: The sandy soils of the Essex heathlands and hills and ridges are susceptible to erosion if high risk crops are cultivated on sloping ground and in dry summers will become increasingly prone to wind erosion if they are left exposed. The restoration of hedgerows across the landscape can reduce the scale of wind erosion.

The River Lee near Hertford.
Regulating soil quality: This NCA has a range of soil types and the condition of these soils varies significantly. Within the area as a whole more than 50 per cent of the land is classified as excellent to good/moderate quality, which supports a wide range of agricultural and horticultural crops.

Regulating water quality: The rivers flowing south and east from the chalk strata into the Thames and to the coast are of variable ecological quality. While most are considered to be of moderate quality, parts of the Lea are of poor quality as are some of the smaller rivers, such as the Rib. These classifications are based on results from the Environment Agency within their work under the European Water Framework Directive. Land management practices within the NCA will have a major impact on water quality in the underlying aquifer.

Pollination: The areas of semi-natural habitat – heathlands, grasslands and woodland edges in parts of Essex and Hertfordshire – provide important habitats for pollinating insects. The extensive agricultural lands can provide habitats in the form of hedgerows, edges of farm tracks and 'set aside' areas. This in turn will be beneficial for food production through pollination of food crops, particularly oilseed rape, through pollinating invertebrates.

Pest regulation: The presence of semi-natural habitats such as grasslands, woodlands, road-side verges and uncult farm tracks can provide overwintering habitats for beneficial predatory invertebrates which will help to control populations of many pest species. An example of this is the Carabidae family of beetles which feed on a number of pest species. Careful management of land to encourage such species can reduce the need for chemical control measures.

Cultural services (inspiration, education and wellbeing)

Sense of history: A strong sense of history is captured in the ancient woodlands and trees of the area – the Broxbourne Woods and Epping Forest – and also the built environment, including significant estates.

Recreation: There is a strong appreciation of the local landscape as a 'green lung', offering opportunities for active and passive recreation away from the Greater London conurbation, and a ready recognition of the coast as offering a nearby visitor destination. The easy accessibility of the countryside and coast is a very important aspect of the lives of local residents.

Biodiversity: The diverse range of semi-natural habitats present in the NCA, which includes 3 SAC and 3 SPAs, include ancient woodland, lowland heath and floodplain grazing marsh and provide important habitats for a wide range of species including great crested newt, water vole, dormouse and otter. The area is also important for wetland birds, especially the Ramsar wetland sites of Lee Valley, Hamford Water and Abberton Reservoir.

Geodiversity: The area has a clear identity created by the geodiversity underpinning the diverse landscape. The underlying sediments themselves contain a record of ancient landscapes and climates. There are 20 geological SSSI in the area and 3 Local Geological Sites which are of local and national importance. These sites preserve important deposits of chalk stratigraphy and evidence for the formation of the London Clay as well as conserving several key geomorphological features. The majority of sites within this NCA, however, preserve evidence for past glaciations and the evolution of the Thames during the Quaternary. These sedimentary deposits and the fossils contained within them represent significant records of climate and environmental change that provide an important context for our understanding of and insights into the potential impacts of future climate change on our landscapes. Several sites also preserve important evidence for early human occupation of the area dating back around 300,000 years.
111: Northern Thames Basin

**National Character Area profile:**

**Opportunities**

**SEO 1: Manage rivers and river valleys to protect and improve water quality and help to alleviate flooding in the downstream urban areas, while also helping to improve aquifer recharge and provide a sufficient store of water to meet future need, especially with predicted climatic changes. Conserve the riparian landscapes and habitats, for their recreational and educational amenity for their internationally significant ecological value.**

**For example by:**

- Managing and enhancing the river valleys and wetland habitats for the important habitats and species that they support, their geodiversity, landscape and recreational value, and to increase water storage capacity to reduce flood events in downstream urban areas.

- Sustainably managing the water resource including watercourses and aquifers, by implementing catchment-wide land management practices to help reduce pollution and aid aquifer recharge.

- Maintaining, enhancing and increasing the network of hedgerows along river valleys, especially in flood plains, to act as water stores which will absorb excess water during high rainfall, slowly release water in drier periods and reduce wind evaporation on fields in drier periods.

- Enhancing and creating riverside buffer strips of natural vegetation, including the conservation and planting of a new generation of riverside willows that will absorb overland run-off and help to minimise the deposition of soil and silt in channels and stop nitrates entering the watercourse in order to prevent adverse effects on aquatic life.

- Creating reedbeds in areas of potential pollution including along roads and near road bridges and agricultural drainage areas. This will help to improve urban diffuse pollution.

- Utilising semi-natural habitats to replace current engineered flood management. Current flood management will be insufficient to counteract future flooding, so allowing natural processes to reduce water levels in priority areas is the most sustainable alternative. Allowing rivers to flood naturally will also increase biodiversity and enhance geomorphology, wetland habitats and riverine character.

- Restoring river valley mineral sites to wetlands and washlands while enhancing geodiversity and archaeological interest.

- Raising awareness within the general public as to how they can individually help to reduce water waste and prevent contamination.

- Encouraging landowners to store water for individual usage, from using water butts for small gardens to larger storage systems for arable land and golf courses.

- Growing crops that are more resilient to drought so that less irrigation is needed in drier periods when water availability decreases.

- Restoring and improving the natural geomorphology of rivers in the area including urban rivers so that the quality of not only the water but also the river ecology as a whole improves by reducing pollution, sedimentation, invasive species etc; reducing the prolificacy of invasive aquatic and marginal plant species, including floating pennywort and Himalayan balsam, which cause waterways to become blocked, increase sedimentation, reduce biodiversity and affect movement of aquatic life as well as recreation activities along watercourses.
**SEO 2: Manage the agricultural landscape and diverse range of soils which allow the Northern Thames Basin to be a major food provider, using methods and crops that retain and improve soil quality, water availability and biodiversity.**

**For example by:**
- Retaining the overall agricultural diversity with areas of arable land, horticulture and pasture which are so important for food provision in the area, while encouraging sustainable management to protect agricultural soils and enhance biodiversity. Encouraging the use of sustainable farming methods to enhance soil quality, such as maintaining vegetation cover, reducing tillage and encouraging the use of organic manures and composts. This will help to retain organic matter, which is vital for productive soils.
- Managing, enhancing and, where appropriate, expanding hedgerows and grass strips as field boundaries as these help to bind the soil, reducing soil erosion, while also providing habitats for pollinating insects as well as various farmland birds, mammals and invertebrates. Hedgerows will also create habitat corridors, connecting habitats and so allowing wildlife to disperse and increase its range, creating a more diverse landscape.
- Encouraging a reduction in compaction of the clay-based soils in the area which can damage their structure and drainage potential and reduce aquifer recharge. This includes reduced poaching from livestock and careful use of heavy machinery.
- Encouraging the management of the heathland soils to prevent wind and water erosion using hedgerow and tree boundaries to reduce overland run-off and to act as a wind shield. These soils are more prone to erosion than the more clay-based soils and are usually of high quality in terms of arable usage.
- Encouraging improvements to water management within agricultural land using boundary features such as hedgerows and grass buffer strips to store water during wet periods and retain it in drier periods.
- Adopting land management practices, including the use of buffer strips next to watercourses, to reduce diffuse pollution from agricultural sources, prevent contamination of groundwater and safeguard future water quality and availability.
- Improving biodiversity in the area by putting aside less productive land and creating semi-natural habitats such as wildflower meadows and grasslands. The promotion of agri-environment schemes can help to establish these opportunities.
SEO 3: Protect and appropriately manage the historic environment for its contribution to local character and sense of identity and as a framework for habitat restoration and sustainable development, ensuring high design standards (particularly in the London Green Belt) which respect the open and built character of the Thames Basin. Enhance and increase access between rural and urban areas through good green infrastructure links to allow local communities recreational, health and wellbeing benefits.

For example by:

- Conserving historic features in the landscape with heritage interest and improving the condition of heritage assets through appropriate measures, and seeking to reduce conflicting or unsympathetic management regimes.
- Conserving and interpreting archaeological earthworks and sub-surface archaeology while recognising the high potential in this landscape for undiscovered remains.
- Preserving and enhancing current public access sites including nature reserves, common land, country parks and public footpaths and rights of way to attract the wider community.
- Creating better access to the countryside with an increased number of public footpaths and rights of way so that more of the area is open access. Enhancing current public access paths would also be beneficial to make the experience of the countryside more inviting and enjoyable.
- Restoring the connectivity of key habitats as well as expanding and creating new habitats which will maintain and enhance their attraction for visitors. Also, working to increase species diversity and density to increase this attraction for the community.
- Preserving the open landscape, enhancing geodiversity and biodiversity, for example the iconic species and habitats that attract visitors, to preserve their appeal to the wider community.
- Maintaining and enhancing the status of Sites of Special Scientific Interest, Special Protection Areas, Special Areas of Conservation, National Nature Reserves and Ramsar sites. This will preserve the character of the landscape, protecting and enhancing the sense of place.
- Increasing awareness and raising understanding within the community of the natural environment to improve their appreciation of their landscape so as to help to enhance their experience. This will also help to instil a sense of place.
- Planning for future pressure from urban expansion and urban-related development, major roads and other infrastructure as a result of the expansion of Stansted and Luton international airports (impacting from adjacent NCAs) and the impact of strategic growth in and around the NCA, such as at the Thames and Haven Gateways, Chelmsford and Southend, and the regeneration in the Lea Valley. Seeking measures to help to implement the All London Green Grid frameworks in order to ensure that associated design standards are of a high quality and pay due regard to the natural environment for the benefit of people and wildlife.
- Planning for a new vision of agricultural landscapes in areas of significant planned growth such as within the Thames Gateway, Haven Gateway and M11 corridor, including, potentially, the exploration of new forms of community food growing and community land ownership, providing a 21st-century interpretation of the plotlands of the 1920s and 1930s that are characteristic of this NCA.
- Ensuring positive management of land that may be developed in the future to preserve the character of the area and not adversely affect the rural areas that provide many resources, including food provision, carbon sequestration and recreation for the rural and urban communities.
SEO 4: Manage and expand the significant areas of broadleaf woodland and wood pasture, and increase tree cover within urban areas, for the green infrastructure links and important habitats that they provide, for the sense of tranquillity they bring, their ability to screen urban influences and their role in reducing heat island effect and sequestering and storing carbon.

For example by:
- Promoting the establishment of a coherent and resilient network of treescapes (native woodland, wood pasture, parkland, coppice, scrub, field trees and hedgerows) through expanding and linking existing woodland with areas of new planting.
- Managing the area’s diverse range of historic woodlands, veteran trees and wood pasture and parklands to enhance landscape character and safeguard their biodiversity value while seeking opportunities to enhance access.
- Expanding current woodlands to create a greater resource and re-introduce coppicing and other management back into woodlands so as to make wood available to be sold commercially.
- Working within established management plans to ensure that the viability of the woodlands is not affected and that biodiversity is maintain or enhanced.
- Creating new woodlands, taking into account natural processes and bringing them into wood production management. Sensitive incorporating them into and around new developments to enhance landscape character. Community woodlands should be maintained and increased where possible for this purpose as well as for recreation.
- Creating new woodlands around or near to urban areas, which will, through carbon sequestration, help to counteract the carbon that is produced. Woodlands within urban areas will help to reduce the heat island effect.
- Incorporating woodland rides and paths within woodlands to allow for public access but also to create a variety of habitats within the woodlands which will increase biodiversity.
- Maintaining and enhancing woodland habitats which support important invertebrate species such as stag beetles, rare fungi and priority species such as dormouse. Ancient woodlands also support ground flora such as bluebells.
- Maintaining the diverse appearance of the landscape and shield developments and infrastructure from the wider landscape. This character should be maintained within any future developments that are built.
- Managing, restoring and re-linking areas of remnant lowland heathland and acid grassland found on areas capped by glacial sands and gravels, notably within the Essex heathlands and wooded hills and ridges.
- Conserving characteristic landscapes linked to the arts, such as Dedham Vale in the north-easternmost corner of the NCA (the inspiration for Constable), and the rich heritage of designed parklands associated with estates (particularly in the Hertfordshire plateaux and river valleys and the Essex wooded hills and ridges).
111: Northern Thames Basin

Additional opportunity

Continue to utilise the mineral resource as appropriate, ensuring screening and restoration plans are in place to protect landscape assets. Restore, enhance and manage previous mineral sites as suitable habitats or sites of key geological importance to demonstrate the significance of the rich mineral resources in shaping the area's landscape, and their potential as recreational and ecological assets of the future.

For example by:

- Appropriately utilising the minerals which are a much-needed resource in the area, with the continuing demand for new housing and other building projects. Ensure long term restoration plans seek landscape and ecological benefit so this resource can provide a source of revenue and jobs for the area as well as an opportunity to enhance our knowledge and awareness of geodiversity, and provide new assets for the community in the long term.

- Restoring previous extraction to habitats that are appropriate for the area to improve the network of semi-natural habitats, and the recreational and educational opportunities for local communities.

- Provide appropriate access and interpretation to important geological sites once mineral extraction is completed to use this exposed resource to educate and inform people of the geological and geomorphological features.

- Encouraging an understanding of the interrelationships between the geological and archaeological heritage of the area.

- Ensuring appropriate management, educational access and interpretation of important geological and above and below ground archaeological features and sites throughout the area.
111: Northern Thames Basin

Introduction & Summary

Natural England is here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England’s traditional landscapes are safeguarded for future generations.

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Appendix 3: Essex Landscape Character Assessment, extract for Landscape Character Area G3: South Essex Coastal Towns
Essex & Southend-on-Sea Replacement Structure Plan Review

ESSEX LANDSCAPE CHARACTER ASSESSMENT

Final Report

2003
Key Characteristics

- Large areas of dense urban development.
- Strongly rolling hills with steep south and west facing escarpments covered by open grassland or a mix of small woods, pastures and commons.
- Extensive flat coastal grazing marshes in the south adjacent to the Thames Estuary.
- Large blocks of woodland in the centre of the area.
- Narrow bands and broader areas of gently undulating arable farmland, with a remnant hedgerow pattern, separating some of the towns.
- Particularly complex network of major transportation routes.
- Pylon routes visually dominate farmland in the A130 corridor.

Overall Character

The South Essex Coastal Towns is an area of very mixed character, but unified by the overall dominance of urban development, with frequent views of an urban skyline. The major towns spread over gently undulating or flat land, but locally extend over prominent ridgelines and hillsides as well. A distinctive steep sided south facing escarpment between Hadleigh and Basildon retains significant areas of open grassland, as well as a patchwork of small woods, including woods on former plotlands and small pastures. Contrasting flat coastal grazing marsh lies to the south. In some parts such as south of Hadleigh, and around Hockley, the urban form is softened by very large woodlands and the Roach Valley is largely undeveloped.
However, many residential and industrial edges with areas of adjacent open arable farmland are hard and abrupt with few hedgerows and woodlands remaining.

**Character Profile**

**Geology**
- Claygate and Bagshot Beds, Sands and Gravels, Brickearths and Loams, Alluvium

**Soils**

**Landform**
- Very varied topography.
- Flat low lying land south east of Basildon, around Canvey Island and Rochford, and east of Southchurch.
- Steep south and west facing ridges/escarpments from Leigh on Sea to Benfleet extending around to Rayleigh/Hockley, tailing out towards Southminster. Moderate to steep escarpment south and south east of Basildon.
- Gentle-moderately undulating land in the remainder of the area.

**Semi-natural vegetation**
- Coastal grazing marshes, reedbeds marsh, extensive areas of ancient woodland including sessile oak woods, some unimproved meadows.

**Pattern of field enclosure**
- Varied field pattern.
- Small irregular fields bounded by straight and winding ditches on the marshlands.
- Small to medium size semi-regular hedged fields, sometimes bounded by woodland, in South Benfleet, Hadleigh, Daws Heath, Hockley areas. Some parts with larger fields where hedgerow pattern has been lost.
- Regular large size fields with fragmented hedgerow pattern north of Basildon and in the Wickford and Rochford areas.

**Farming pattern**
- Arable farmland associated with flat to gently undulating land, pasture more common on steeper slopes.
- Extensive coastal grazing marsh between Canvey and Basildon.

**Woodland/tree cover**
- High concentration of woodland in the Thundersley/South Benfleet, Daws Heath and Hockley areas and around the Langdon Hills, including small and large blocks of interlocking deciduous woodland. Some secondary woodland associated with previous plotland areas.
- Absence of woodland/trees on the flat low lying marshes.
- Small, very dispersed woods and copses in the west of the area.
- Southend has many avenue trees. Basildon New Town has extensive landscaping.

Settlement pattern and built form
- Urban settlements cover a very large area.
- Basildon New Town occupies gently undulating land to the south and east of the steeper Langdon Hills. Distinct pattern of compact residential neighbourhoods, industrial areas, town centre interspersed with broad corridors of green space along the roads, and a number of large parks and playing fields.
- Southend on Sea, and its associated neighbourhoods is the largest urban area with a dominant grid pattern of streets running parallel and at right angles to the contours. Dense urban form, but with some large parks and open spaces.
- Rayleigh, Hockley and Wickford are principally dormitory towns with a more varied urban form, and street pattern. Housing areas sometimes are visually prominent wrapping over hillsides and valleysides.
- Canvey Island is on flat low lying land and has a grid street pattern, with a network of draining dykes within the built form.

Other landscape features
-- Rayleigh and Hadleigh Castles.
- Pylons and overhead lines are visually prominent between Basildon and Benfleet, Wickford and Rayleigh, and Rayleigh and Rochford.
- Oil storage depots, landfill sites near Canvey Island.
- Southend Airport.
- A number of golf courses.

Landscape Condition

- The condition of the settlement is very mixed. Poor quality intrusive commercial 'shed' development is common within the area.

- The condition of the woodlands and hedgerows is moderate.
Past, Present and Future Trends for Change

- The area has been subject to very significant change in the 20th Century, with massive expansion of urban areas, and urban development pressure is likely to be a significant ongoing trend.

- Areas where traditional landscape character survives well, such as the Upper Roach Valley, the Crouch Valley, the Thames Marshes, Langdon Hills and Dunton Ridges need particular protection from landscape or development change.

- Recreational pressures are also likely to be considerable.
### SOUTH ESSEX COASTAL TOWNS (G3) SENSITIVITY EVALUATION

<table>
<thead>
<tr>
<th>TYPE/SCALE OF DEVELOPMENT/CHANGE</th>
<th>KEY LANDSCAPE SENSITIVITY AND ACCOMMODATION OF CHANGE ISSUES</th>
<th>LANDSCAPE SENSITIVITY LEVEL</th>
</tr>
</thead>
</table>
| 1. Major urban extensions (>5 ha) and new settlements | - Visually exposed steep escarpments.  
- Integrity of woodlands and hedgerow pasture fields.  
- High intervisibility on marshlands.  
- Coalescence.  
- Major green spaces/integrity of major green corridors.  
- Poor condition of some arable farmland with intrusive pylons, transportation routes.  
*Any new development should include strong new woodland/hedgerow framework particularly where arable farmland is in poor condition.* | M |
| 2. Small urban extensions (<5 ha) | - Visually exposed steep escarpments.  
- Integrity of woodlands, hedgerow field pattern.  
- High intervisibility on marshlands.  
*Opportunities to improve some existing harsh urban edges.* | L |
- Landform character. | M |
- Integrity of woodlands and hedgerow field pattern.  
- High intervisibility on marshlands.  
- Poor condition of some arable farmland at the edges. | M |
| 5. Developments with individual large/bulky buildings | - Visually exposed steep escarpments.  
- High intervisibility on marshlands. | L |
| 6. Large scale ‘open uses’ | - Visually exposed steep escarpments.  
- Integrity of coastal grazing marsh.  
*Opportunities to improve areas in poor condition.* | M |
| 7. Mineral extraction/waste disposal | - High intervisibility on marshlands.  
- Landform character. | M |
| 8. Incremental small scale developments | - Strong urban character. | L |
| 9. Utilities development, i.e. masts, pylons | - Visually exposed steep escarpments.  
- High intervisibility on marshlands.  
- Low capacity for further change. | H |
| 10. Decline in traditional countryside management | - Woodland and hedgerow and unimproved grassland condition. | H |

Table to be read in conjunction with paragraphs 1.4.15 – 1.4.17