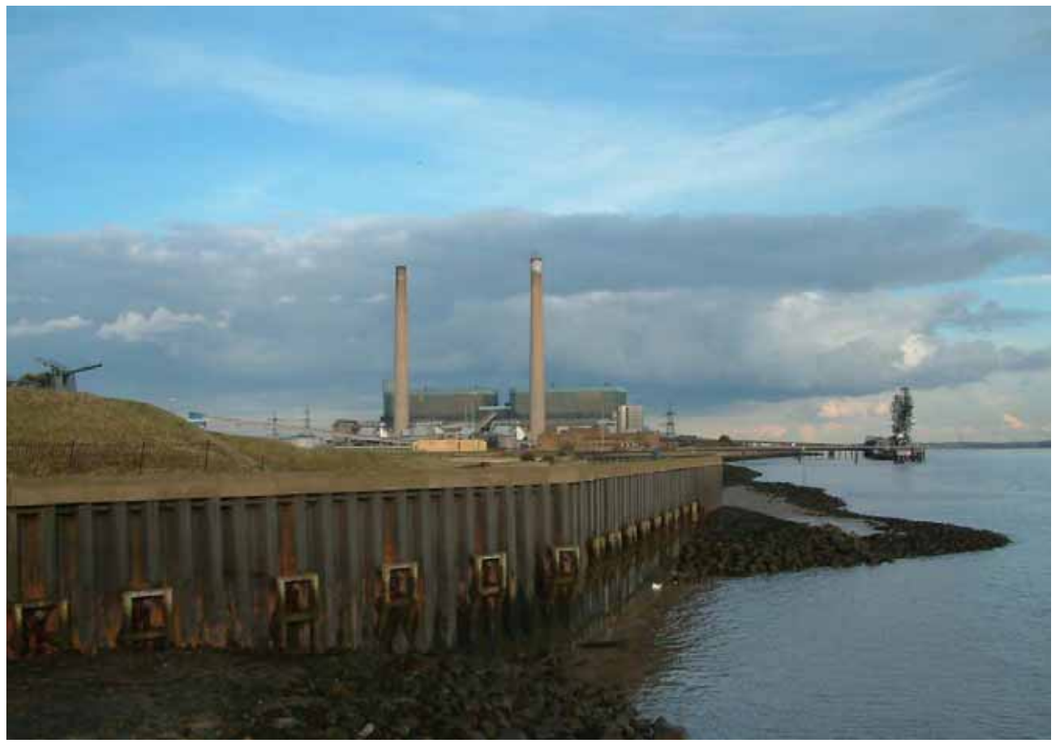
Thurrock Council

THURROCK LANDSCAPE CAPACITY STUDY



March 2005

CHRIS BLANDFORD ASSOCIATES

Environment Landscape Planning

Thurrock Council

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Approved By: **Dominic Watkins**

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Date: **31 March 2005**

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Environment Landscape Planning

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PREFACE

Thurrock is a key regeneration area in the East of England. It lies within the Thames Gateway, announced as a key growth area in the Government's Sustainable Communities Plan. In February 2003 the Office of the Deputy Prime Minister announced the establishment of an Urban Development Corporation in Thurrock to drive forward regeneration in the area and the Thurrock UDC became operational from January 2004.

Thurrock Borough Council is a Unitary Authority and published its deposit Unitary Development Plan in March 2003. Thurrock Council suspended work on the UDP and has begun the preparation of Local Development Documents following introduction of the Planning and Compulsory Purchase Act 2004.

With the levels of growth currently proposed in the emerging Regional Guidance for the East of England (RSS14), Thurrock Council considers there is a need to plan ahead and consider the options for growth in order to ensure that development is properly accommodated in the borough in order to provide a pleasant and vibrant environment.

Thurrock Council has commissioned a number of technical studies, the outcomes of which will jointly inform the preparation of the Council's Development Plan and the strategies and implementation plans of the Thurrock Urban Development Corporation.

This Landscape Capacity Study is one of those technical studies. Its purpose is to assess the ability of the landscape to accommodate potential development scenarios. The study tests the sensitivity of the different landscape character areas of the borough to a generalised increase in development and then specifically tests the capacity of the landscape to accommodate various development options around key settlements within the Borough, including urban extensions and development on the urban fringe. The selection of settlements chosen reflects the existing main settlements in the borough and principles of sustainable development, including the sequential approach to location of development and access to key transport centres and other services.

It must be emphasised that this study is not a formal endorsement by Thurrock Council of the forms and scale of development tested nor the need to release any sites from the Green Belt. This study seeks to inform the options and alternatives for development and to assist in the preparation of and sustainability appraisal of the Council's Local Development Documents.

This study should be read and considered in conjunction with the other technical studies and strategies commissioned by the Council, including the Urban Capacity and Infrastructure studies, Open Space Strategy, Flood Risk Assessment and the Green Belt Review.

Thurrock Council
January 2005

1.0 INTRODUCTION

1.1 Study Aims

1.1.1 Chris Blandford Associates (CBA) was commissioned in September 2004 by Thurrock Council to assess the capacity of Thurrock's landscapes to accommodate development. The Study is intended to inform the preparation of:

- the Council's new Local Development Documents;
- the strategies and implementation plans of the Thurrock Urban Development Corporation, and
- the Council's input to the preparation of the new Regional Spatial Strategy for the East of England (RSS14).

1.1.2 The main purpose of the Study is as a planning tool for assisting strategic decision-making in relation to development and environmental protection and should be used in conjunction with other studies commissioned by the Council including assessments of Urban Capacity, Infrastructure, Open Space and Flood Risk Assessment. Landscape character is one of the key influences on the potential location, scale and form of future development. The development options assessed in sections 4 and 5 of this study do not represent a formal Thurrock Council endorsement of the need to release these areas from the Green Belt for any development purposes nor does this study override current Green Belt policy or in itself support any requirement for the review of boundaries. A review of the Green Belt in Thurrock will be addressed in a separate study.

1.1.3 The assessment set out in this report identifies the 'indicative' capacity of Thurrock's landscapes to development, taking into consideration opportunities for green infrastructure provision; no assessment of the landscape impacts of specific development proposals has been undertaken as part of this study.

1.1.4 The Study Brief is included as Appendix A.

1.2 Study Context

1.2.1 The traditional image of Thurrock is as an area of heavy industry and suburban development, but the Borough includes a large area of open undeveloped countryside, some of which is of acknowledged value for its nature conservation, heritage and other environmental values. The continuing decline of much of the older industries, such as oil refining and storage, has left a legacy of substantial areas of derelict land. In recent years, developments such as the major retail area at Lakeside and housing at Chafford Hundred have been built on former industrial sites.

1.2.2 The countryside has suffered from the effects of mineral working and the landfilling of waste, and continues to be affected by other land use changes associated with urban fringe activities and changing agricultural land management practices. Major initiatives are being pursued to improve the environmental quality of the countryside and urban fringe, such as the Thames Chase Community Forest, which aims to provide large areas of woodland and new areas of green space.

1.2.3 The Thames Gateway South Essex Green Grid is another important strategic initiative within the Borough, which seeks to link green spaces in urban areas to both the countryside and the Thames riverside, both for public access and as wildlife corridors. The South Essex Green Grid Strategy proposes an environmental infrastructure that protects, enhances and creates new:

- areas of outstanding landscape, riverscape and townscape character;
- biodiversity value;
- archaeological, cultural and built heritage; and
- settings for development, views and landmarks.

1.2.4 This Study has been informed by the Thurrock Strategic Area Framework set out within the overall South Essex Green Grid Strategy.

1.2.5 An Executive Summary of the South Essex Green Grid Strategy is included as Appendix B.

1.2.6 The *Countryside in and Around Towns* initiative launched by the Countryside Agency and Groundwork in January 2005 is a national strategy that aims to make the countryside around towns:

- Readily accessible to most people
- Contribute to health, wealth and well being of urban and rural communities
- Underpin more sustainable living
- Strengthen biodiversity in both town and country.

1.2.7 Thurrock Council will be undertaking a Phase 1 habitat survey to inform Biodiversity Action Plan (BAP) targets for the Borough

1.2.8 The Council's planning policies set out in its Unitary Development Plan seek a balance between making provision for new development in the Borough, whilst ensuring adequate protection and enhancement of both the built and natural environment. A key aim for the Council is to develop a 'character-based approach' to the protection, enhancement and restoration of the Borough's landscape. A character-based approach to sustainable landscape planning is about accommodating change in ways that are responsive

to the opportunities, constraints and conditions posed by the specific characteristics that contribute to an area's 'sense of place'. In this context, the Council promotes the following key principles in relation to the conservation and enhancement of landscape character. The Council wants to see new development:

- respect its landscape setting;
- protect and maintain existing features and elements that contribute to the distinctiveness of the local landscape; and
- make a positive contribution to the character of the local landscape area.

1.2.9 This approach is reflected in this Study, which uses landscape character assessment techniques to understand the existing character of Thurrock's Landscapes and their sensitivity as the basis for evaluating the ability or 'capacity' of different places to accommodate strategic development needs in ways that reflect these principles.

1.3 Definition of Key Terms

1.3.1 ***Landscape Character*** is the recognisable and consistent pattern of elements that make a place different or 'distinct' from another. Character is influenced by particular combinations of physical elements such as ecological, historical, settlement, built components, and other intangible aspects such as visual aesthetics, tranquillity and sense of place.

1.3.2 ***Landscape Sensitivity*** is the inherent sensitivity of the landscape resource, which includes the sensitivity of both its character as a whole and the individual elements contributing to character; and the visual sensitivity of the landscape in terms of available views, visibility, the number and sensitivity of people viewing the landscape and the scope to mitigate visual impact.

1.3.3 ***Landscape Capacity*** is the indicative ability of the landscape to accommodate different amounts of change or development of a specific type without adverse impacts. It reflects (i) the sensitivity of the landscape resource and its visual amenity, and (ii) the value attached to the landscape including specific elements within it (for the purposes of this Study, environmental designations and investment in countryside management projects are used as key indicators of 'value').

1.4 Overview of Study Approach

1.4.1 The overall approach to the Landscape Capacity Study was developed in line with current best practice set out in *Landscape Character Assessment – Guidance for England and Scotland* (2002) and relevant supplementary topic papers, published jointly by the Countryside Agency and Scottish Natural Heritage.

1.4.2 In summary, the study process involved four key stages of assessment:

Stage 1 – Understanding the Shape of Thurrock's Landscape (Chapter 2.0)

1.4.3 The first stage involved an analysis of the physical and historical influences that have shaped the Thurrock landscape. This was informed by sources such as the *Nature Conservation Thurrock: a Guide*. The forces for change that continue to affect landscape character today are also considered.

Stage 2 - Characterisation of Thurrock's Landscapes (Chapter 3.0)

1.4.4 The next stage involved an assessment of the existing character of Thurrock's landscapes. This process, known as 'characterisation', identifies, classifies and describes areas of different character to provide an understanding of what makes one place distinctive from another and why. In line with the Guidance, this assessment has been carried out at a scale of 1:25,000.

Stage 3 – Evaluating the Sensitivity of Thurrock's Landscape Character Areas (Chapter 3.0)

1.4.5 The third stage involved a strategic evaluation of the sensitivity of Thurrock's Landscape Character Areas to three indicative broad scales of development. The purpose of this stage is to provide a broad overview of the variations in sensitivity of the Borough's landscapes, as context for the more detailed evaluations of landscape capacity for selected locations in the following assessment stages.

Stage 4 – Evaluating the Capacity of Urban Fringe and Selected Settlement Edge Landscapes (Chapters 4.0 and 5.0)

1.4.6 This final stage involved a detailed evaluation at a scale of 1:10,000 of the capacity of the Borough's urban fringe and selected settlement edge landscapes to development, including consideration of the acknowledged values attached to these landscapes. The purpose of this stage is to provide information on the indicative landscape capacity of these areas to support decision-making by the Council regarding the identification of sustainable locations for possible urban extension/settlement expansion options.

1.4.7 Further details regarding the methodologies employed for each key stage of assessment are described in the respective chapters.

2.0 SHAPING OF THE THURROCK LANDSCAPE

2.1 General

2.1.1 The Thurrock landscape has evolved as a result of an interaction of the physical structure of the landscape and the vegetation and land uses that cover it. To understand what makes Thurrock distinctive, the key physical and historical influences that have shaped the landscape over time are identified section 2.2 below.

2.1.2 Section 2.3 identifies the key forces for change that affect the character of Thurrock.

2.2 Physical and Historical Influences on the Landscape

2.2.1 The basic structure of the landscape is fundamentally influenced by its underlying rocks and relief. Geology and the processes of weathering, erosion and deposition influence the shape and form of the landscape and its drainage and soils. In turn, these influence patterns of vegetation and land use.

Topography and Drainage

2.2.2 See Figure 2.2 – Topography and Drainage. Thurrock is generally low-lying, with the highest point in the northeast at Westley Heights (less than 116m ODN). In the River Thames floodplain and the surrounding marshes the land is generally lower than 20m ODN. North of the surrounding floodplain and surrounding marshes, where the geology alters from fluvial deposits to chalk and head, there is a small ridge up to 35m ODN. This ridge loops around the centre of the Borough from north of South Ockendon, south through Grays, south of Chadwell St. Marys and northwards east of Corringham. North of this ridge the land gently undulates rising up to Westley Heights. However there is a low-lying, broad, flat river floodplain centred around Mar Dyke near Bulphan.

Geology

2.2.3 See Figure 2.3 – Geology. The oldest rocks were laid down between 440 and 360 million years ago. They mainly consist of hard, slaty shales, mudstones and sandstones. Overlying this base is a number of different geological layers formed between 135 million years ago to the present. The basic stratigraphy of this geology is as follows:

- Brick Earth - Quaternary Period (1.8 million years ago to present day)
- Thanet Sand Formation - Tertiary period (66-1.8 million years ago)
- Bulhead Bed
- Bagshot Sand
- Claygate Beds
- London Clay
- Reading Beds
- Upper Chalk
- Upper Greensand
- Gault Clay

} Cretaceous Period (135-65 million years ago)

2.2.4 The surface geology of the Borough has been strongly influenced by the natural migration of the River Thames. In the south, around the shores of the River Thames and the surrounding marshes, river terrace gravels and alluvium overlie London Clay. In addition the river terrace gravels are also interspersed with small outcrops and bands of Thanet Sand Formations. The interglacial deposits of the Thames terrace system has been recorded at Purfleet Road, Aveley. To the north of West Thurrock there is a band of upper chalk. In addition a large area of head deposits dominates the north of the Borough, interrupted by a layer of tidal river or creek deposits surrounding Mar Dyke.

Soils

2.2.5 Excluding the urban areas where soils have not been mapped, there are three main soil types reflecting the underlying geology and pattern of drainage in the area.

2.2.6 Adjacent to the shores of the River Thames and the Mar Dyke the low lying floodplain land less than 5m ODN is dominated by ground-water gley soils, which are characteristically a mixture of coarse and fine loamy permeable soils affected by groundwater.

2.2.7 To the north of the Borough away from the main rivers, there are seasonally waterlogged slowly permeable surface-water gley soils intersected by a network of drainage ditches. In the east brown soil dominates except within the river flood zones. These soils are loamy or clayey with reddish or reddish mottled, clay-enriched subsoil.

Land Cover and Ecological Character

2.2.8 See Figure 2.4 – Land Cover. The rural landscape is predominantly a mixture of arable and pasture, especially on the higher ground north of the slight ridge separating the floodplain from the rest of the Borough. The presence and distribution of the natural habitats found in the Borough are strongly

influenced by geology and landform. Habitats include deciduous woodland, ancient and/or species rich hedgerows, grassland, heath, estuary and grazing marshes, freshwater and open water habitats. Many of the areas where these habitats occur are protected through statutory and non-statutory designation in recognition of their importance for nature conservation.

Deciduous Woodland

2.2.9 Small patches of lowland deciduous woodland of national significance are scattered throughout the Borough. Most of these are found on ground higher than 20m ODN. The largest area of woodland within the Borough is found in the northeast at Langdon, an Essex Wildlife Trust Nature Reserve. The woodland within this nature reserve is a mixture of ancient and secondary woodland. Other areas of woodland are found at the base of disused quarries such as at Grays Thurrock Chalk Pit Site of Special Scientific Interest (SSSI) where the revegetation of the disused quarry includes examples of succession from young to old woodland areas.

2.2.10 In addition to these areas of woodland there are another 21 areas of ancient and semi-natural woodland within the Borough and one area of Ancient replanted woodland. Some of these relict fragments of ancient woodland are important habitats for protected species, such as Hangman's Wood, Deneholes for example.

Ancient and/or Species Rich Hedgerows

2.2.11 Ancient hedgerows provide field boundaries throughout the Borough. Many of these are remnants of former woodland and conserve some of the value of this habitat for numerous mammal, bird and insect species. Combined with natural grass strips and ditches, hedgerows provide vital links between fragmented habitats, allowing migration of wild plants and animals through the countryside.

Grassland

2.2.12 A mixture of different grassland types are found throughout the Borough. Lowland meadows of national significance are situated in the Borough. The alluvial floodplains of the Thames and its tributaries once supported large species-rich damp grassland used for pasture and hay production only. Fragments of these such as the largely neutral grassland of Basildon Meadows SSSI, remains within the Borough. The surviving fragments of unimproved grasslands (such as at Ferry Fields) and a combination of flower-rich grasslands and/or sparse, dry grassland associated with the sands, gravels and silts of various 'brown field' sites (such as old sand pits, brick pits, quarries, silt lagoons and former agricultural land) provide favourable conditions for the nationally important Thames Terrace grassland invertebrate assemblage.

Heathland

2.2.13 Heathland habitats are predominantly found in the south of the Borough around Orsett, Mucking, West Tilbury and in the west of the Borough around south Ockendon and North Stifford. Lowland Heath is a UK and Essex Biodiversity Priority Habitat. It is characterised by a range of dwarf shrub and/or acidic grassland vegetation occurring on dry, sandy, nutrient poor soils below 300m in altitude. The open dry habitat creates conditions ideal for a range of rare reptiles, birds and insects.

Estuary and Grazing Marshes

2.2.14 The banks of the River Thames estuary are of international, national and local significance. The Thames Estuary & Marshes SPA and Ramsar Site, Mucking Flats and Marshes SSSI, SPA & Ramsar Site, West Thurrock Lagoon and Marshes SSSI, Holehaven Creek SSSI and Vange and Fobbing Marshes SSSI are all located on the River Thames shore. The designated areas provide a complex of brackish, floodplain grazing marshes, ditches, saline lagoons and intertidal saltmarsh and mudflat. The variety of habitats supports internationally important numbers of wintering waterfowl with saltmarsh and grazing marsh being of international importance for their diverse assemblages of wetland plants and invertebrates.

2.2.15 In addition to expanses of saltmarshes and mudflats the Inner Thames Marshes SSSI form the largest remaining expanse of wetland bordering the upper reaches of the Thames Estuary. The site comprises a major relic of low-lying grazing marsh with a variety of grassland communities dissected by a network of fresh to brackish water drains. This type of habitat supports a variety of breeding birds and high numbers of wintering wildfowl, wader, finches and birds of prey as well as nationally scarce plant species.

Freshwater and Open Water

2.2.16 The River Thames and its tributaries are of local significance in terms of nature conservation. Reedbeds are one of the important habitats found within the rivers and ditches in the Borough. They are a UK and Essex biodiversity priority habitat as several birds and numerous insect species are wholly dependent on this habitat.

Cultural Influences on the Landscape

2.2.17 The landscapes and settlement of the Borough have developed over time, and have seen periodic episodes of reuse, abandonment and remoulding since prehistoric times before evolving into the present day landscape.

Prehistory

2.2.18 These changes first began 300,000 years ago in the Palaeolithic (c.500,000 to c.10,000 BC) when people first settled in the area. The wildwood forests that covered the area were slowly cleared as people began to inhabit the Borough. Favoured areas for the early hunter-gatherers of the Palaeolithic and Mesolithic (c.10,000 to c.4,000 BC), were the rich and fertile river valleys. Fishing and hunting would have been the earliest forms of industry which has continued from the Palaeolithic to the present day. Fishing in the later periods became more complex as the creeks and estuaries were used to catch fish. As agriculture was adopted in the Neolithic (c.4,000 to c.2,200 BC), land management practices dramatically altered, probably involving increased clearance of woodland and more permanent settlement. The development of agriculture from the Neolithic to today has been a changing force in the character and type of landscape that is present today.

2.2.19 Prehistoric agricultural practices took place in a variety of field systems and open landscapes, where people used, reused and abandoned areas across generations. Although difficult to detect, some fields retain some or all of their early patterns from prehistoric and Roman field systems. Agricultural processes continued and intensified during the Bronze Age (c.2,200 to c.700 BC) and Iron Age (c.800BC to AD43). Bronze axes found within the Borough, recall the efforts of Bronze Age man in colonising the area

2.2.20 As un-reclaimed environments, the marshes provide an important interface between the land and the water, and throughout prehistory and during historic periods have been an important resource for the area's residents. They not only provided a rich and varied source of food, including fish, eels, oysters and wildfowl but also served as the location for important early industrial activity such as salt making and pottery production. The manufacture of salt, which began in the Bronze Age, flourished in the early Roman period, turning most of the coastline at certain times into a smokey industrial landscape. The un-reclaimed marshes also provided an important area for sheep grazing, the salt in the rich coastal marshes providing protection, as they were less susceptible to drying out in summer, and the salt content limited the risk of foot rot and liver fluke.

2.2.21 People have always moved within the landscape for activities such as hunting, trading and for social reasons. Trackways, rivers and the coastal shores formed the earliest forms of route ways within Thurrock from prehistory onwards. It is these historic routeways that were precursors of the modern road system, and also had a significant influence on the sitting of later settlement and other features within the landscape. The Iron Age brought an increased focus to settlement as the first 'towns' or 'Oppida' began to develop.

Roman Thurrock

2.2.22 Roman settlement (c.43 to 410AD) was centred on the Roman Road towards Tilbury, which attests to the importance of this area as a major transport route in accessing the Thames and the historic crossing point to Cliffe.

2.2.23 The retention of the marshes and the reclamation of the marshland from the Roman period has left a number of sea walls and dykes within the area.

Early Medieval Thurrock

2.2.24 The name 'Thurrock' is thought to derive from the Saxon word 'turruc', which described the bottom of a ship, where water collects – possibly a reference to the shape of the River Thames, which was a key factor in the development of the area. 'Tilbury' may be of Saxon origin, 'Tilla' being the name of a chieftain and 'burg' referring to an ancient fort. Documents charting the early history of the area exist before the Domesday Book (1086), which makes an early mention of Aveley. 'Gray' takes its name from Henry de Grai who was granted the manor by Richard the Lionheart in 1195. As the Saxons settled in the area, they re-used many of the earlier settlements but also appear to have created new ones.

Medieval Thurrock

2.2.25 As the marshes became the perfect area for sheep pasture, the textile industry of the area gained in importance. By the 12th century wool was one of Britain's most important exports. This led to increase pressure of reclamation of the marshlands. Salt marshes had an advantage over the inland pasture for sheep husbandry, for the reasons identified above. It has also been suggested that the meat from these animals was of high quality, although mutton may have been regarded as a by-product.

2.2.26 Grants of markets in the 13th and 14th centuries built on many of the earlier settlement structures, and added to historic cores from which modern settlement has developed. Settlement densities and population levels fluctuated widely throughout the Medieval period and across the borough with a number of towns and villages abandoned, expanded and contracted. The settlement pattern consisted of a small number of market towns, small-nucleated villages and hamlets, and widespread dispersed settlement in the form of farms and cottages. Moated manorial sites, which date from the 12 - 16th centuries, are scattered throughout the landscape. The broad, surviving form of Medieval settlement is a familiar feature of today's landscape.

2.2.27 The area contains pockets of historic settlement including Old Hall and the original centres of Stanford-le-Hope, Corringham, and Fobbing. All three were important Medieval settlements. Fobbing, in particular, was a thriving Medieval port exploiting the marshland grazing to the south and west and fishing and trading opportunities provided by the creeks and Thames estuary. The importance of agriculture in the area continued into the Medieval period, reflected by the magnificent Woolmarket at Horndon-on-the-Hill.

2.2.28 One of the unique features of West Tilbury is the land itself, with evidence of the Medieval system of 'open field' cultivation surviving to the present day. At that time, land holding was in common strips within hedged fields. 'The Great Common Field', bounded by Rectory Road, Turnpike Lane, Blue Anchor Lane and Muckingford Road, is the only example of a complete Medieval open field in Thurrock.

2.2.29 Much Medieval 'common land', upon which farmers had common rights to graze animals, still remains today. Important examples of Medieval field patterns include the strip of land between St. James's Church and The Green, as well as 'Glebe Field' to the south of St. James's Church. The field slopes sharply down to the flatlands to the south, from which views of the Church are possible.

2.2.30 As farming began to enclose the landscape, new features were created. Parks began in the Medieval period. Owned by royalty they traditionally held stocks of deer, which would be hunted within a bounded wood. Deer were not the only favoured delicacy, and during the late 16th and 17th centuries the Essex marshes became a key area for wildfowl hunting. During and after the Medieval period, much of the landscape underwent piecemeal enclosure, whereby the land has been rationalised into consolidated private ownership through a series of private land exchanges and through gradual enclosure of woodland, forest, heath and common.

Post-Medieval Thurrock

2.2.31 The 17th century marks a new threshold in the architectural development of Thurrock with the survival of manor houses many of which built on the early estates of the Medieval period. These were usually set within parkland landscapes designed in formal styles influenced by the fashions of the Continent, for example Belhus Park, designed by Capability Brown.

2.2.32 The sight of troops camped on Tilbury Marshes alongside the fort, which had been built by Henry VIII following his fears of a Spanish invasion after his divorce from Catherine of Aragon, was not uncommon during this period. This fort remains a prominent landmark in the today.

2.2.33 By the 18th century expansion of the communication network began with the construction of turnpikes and the 19th century saw development of the railways both of which led to the expansion of some of the small towns within the area. The coming of the railways significantly changed the shape of Thurrock. Purfleet, for example, became a river resort popular with day-trippers from London. By 1835 the population was just over 10,000. Unlike many other places, Thurrock has enjoyed almost identical boundaries for more than 150 years, adding to the distinctive character of the Borough.

2.2.34 Much later, but only a short distance along the riverside, fears of a French invasion in the 1860s prompted the building of Coalhouse Fort, a Victorian casement fort, where building work was carried out under the supervision of Lt General Gordon, later to become known as Gordon of Khartoum.

2.2.35 The geographical shape of the area dates back to the formation of the Orsett Union in 1835 under the Poor Laws, when the Grays Court House covered the present boundaries of Thurrock and also Rainham and Wennington. The population grew steadily during the mid 19th century, when industry began developing downstream from London and this accelerated dramatically towards the turn of the century when the Port of Tilbury opened, bringing in thousands of dock workers and their families, swelling the town of Tilbury. It was during this time that the first cement was manufactured at West Thurrock, establishing a tradition of heavy industry in the borough and linking in with a mining industry, which had already existed for thousands of years in the area.

20th Century Thurrock

2.2.36 In the 20th century this pattern of new and expanding settlement in the Borough gained a new pace and direction with a number of new town settlements. In the second half of the century, Thurrock's growth accelerated as thousands of families from war-torn London moved to overspill estates at Aveley and South Ockendon. With so many residents having links with the capital and its reliance on the Thames, Thurrock's focus continued to be westward towards London, rather than towards the rest of Essex. The increased capacity of the Dartford Crossing, the construction of the M25 and A13 have had a considerable impact on Thurrock by increasing the volume of traffic and hence noise intrusion and the creation of barriers to movement.

2.3 Forces for Change in the Thurrock Landscape

General

2.3.1 The landscape, ecological and historic character of the Borough is dynamic and constantly changing in response to natural processes and human activities. Historically, changes in agriculture, the socio-

economic structure of local communities, and industrialisation have all had important impacts. The landscape will continue to change in the future, however, the pace and nature of change is accelerating and likely to be of a larger scale than before, which may impact on those qualities that make the landscape special. A key challenge is to understand, manage and direct future positive change in the landscape in ways that conserve and enhance its essential characteristics and valued attributes, whilst enabling sensitively designed development to be accommodated to meet social and economic needs.

2.3.2 The key global, national and local forces for change that affect the character of Thurrock are considered under the following main headings:

- Socio-Economic Characteristics
- Agriculture, land management and diversification
- Built Development
- Infrastructure, Transport and Traffic
- Climate Change.

Socio-Economic Characteristics

2.3.3 The social and economic characteristics of Thurrock play an important role in the process of regeneration and future change, and these are influenced by the close proximity to London at the heart of the South East region. The majority of the Borough is situated within the Thames Gateway Growth Area, which is seeking to deliver sustainable growth through regeneration of predominantly brownfield land, re-establishment of local economies and communities and improvement of local and regional transport provision.

2.3.4 Key socio-economic characteristics of Thurrock Borough include:

- An estimated population (based upon the 2001 census) of 143,128.
- A population based on a high proportion of economically active people (higher than UK Average of 20-54 year-olds).
- An average low unemployment rate (less than half the national average), but with pockets of higher unemployment in Tilbury and South Ockendon.
- Employment strengths in the fields of transport, logistics and wholesale/retail distribution.
- A high level of commuting to Central London.
- An economy based primarily on industrial and commercial development.

Agriculture, Land Management and Diversification

2.3.5 Historically, much of the drained marshland bordering the Thames estuary was used for extensive sheep and cattle grazing. Post-war agricultural policy has resulted in the intensification of farming in the area with a tendency for fewer large farm holdings, with large fields under a mixture of grazing and arable cultivation. The area was also badly affected by Dutch Elm disease. These forces have brought about the following key changes to the character of the landscape:

- Loss of peripheral boundary features such as hedgerows and hedgerow trees.
- Introduction of large modern farm buildings.
- An increase in pony paddocks associated with less viable agricultural land around the settlement fringes, giving rise to poor hedgerow and grassland management and intrusive post and wire fencing and stable facilities.

2.3.6 Whilst the effects of post-1945 agricultural change on landscape character are well understood, future changes that may result from increasing competition in a global market place, ongoing from the reform of the CAP, and the proposals of the Government Strategy for Sustainable Farming and Food, including proposed Entry-Level Agri-Environment Scheme (ELS) and Higher Tier Scheme, are yet to become clear. There may be ongoing adverse effects on character, as well as important opportunities to enhance and restore character as a result of changes in policy. The potential scenarios include:

- A further increase in large arable farm units which may lead to further homogenisation of the landscape, reduction in biodiversity, and potential demand for more centralised and large scale buildings such as grain storage facilities. However, larger units may also have the resources, labour and capital to respond to environmental initiatives and carry out landscape and biodiversity enhancement in association with productive agriculture.

- Further pressure for new uses of ‘marginal’ land, including smallholdings, leisure uses and expansion of horse paddocks. Land used as paddock is more profitable than arable or horticultural land.

2.3.7 Whilst there may be further changes to new land uses e.g. leisure and recreation, research has shown that many farmers would prefer to focus their diversification on alternative crops and adding value, rather than developing non-agricultural activities. Parts of the Borough around South Ockendon and Aveley (where there has been landscape damage from mineral extraction and waste disposal) are part of the Thames Chase Community Forest. This initiative (which forms part of the Urban Forestry Strategy for the Thames Gateway) aims to provide 30% tree cover as hedgerows, shelterbelts, copses and true woodland, with some areas allowing for public access.

Built Development

2.3.8 Built development is a key force for change within Thurrock's landscapes. There are a number of key development areas within and around Thurrock, which currently affect or may affect character in the future. These, in turn, are being driven by both changes in the economic and social character of the area and that of the surrounding region.

2.3.9 The principal town, Grays, and the smaller towns of Aveley, South Ockendon, Stanford-le-hope, Corringham and Tilbury, mainly comprise inter-war and post-war suburban housing. The construction of the M25 in the 1980's led to urban housing regeneration and renewal in the area, much of which was concentrated in West Thurrock. Economic regeneration in the 1990's led to the development of a substantial housing development at Chafford Hundred, on the periphery of the main urban area of Grays. The key forces for change arising from built development within the landscape are:

- Housing growth at the periphery of existing towns can extend the urban character of these areas into the landscape, as increased noise and light pollution and development leads to an urbanising effect on rural landscapes and loss of tranquillity.
- New strategic initiatives to maintain and enhance existing green spaces and corridors, and to create new provision of green infrastructure, as an integral part of new development are likely to be a positive force for change in the landscape.

2.3.10 Industrial development in Thurrock has traditionally been based upon heavy industry (e.g. oil refining). During the 1980's and 1990's a large proportion of development within Thurrock was industrial, commercial and retail related. New development concentrated in the Southwest of the Borough, close to the M25. Large-scale redevelopment began in the 1990's with areas such Lakeside retail and leisure centre being developed. Closure of the industrial areas has lead to the potential for redevelopment at:

- BP Coryton Refinery.
- Redundant factory sites.

2.3.11 There is also demand for new commercial and industrial sites, due to the proximity of the Borough to the M25.

Infrastructure, Transport and Traffic

2.3.12 There is a comprehensive network of electricity related infrastructure within the Borough. Large pylons dominate the skyline adjacent to the River Thames and infrastructure related to the ports at Tilbury and Purfleet is also dominant.

2.3.13 Thurrock is served by a comprehensive major road network, which provides good connections to Central London and the South East region. The area is served by the M25 and A13 and also contains one of the major River Thames crossings (Queen Elizabeth II Bridge/Dartford Tunnel). It is also possible to cross the river via the Tilbury to Gravesend fast passenger ferry. Train links to Central London are frequent with main commuter stations at Grays and Stanford-le-Hope. There is need for improvement of the transport network due to:

- Congested roads within Grays and West Thurrock (many local roads are unsuitable for heavy goods vehicles).
- Need for more links across the river.
- Increased traffic movement associated with new industrial development within the area.

Climate Change

2.3.14 Climate change is a worldwide issue, and evidence of it is growing in the UK with trends towards increased temperatures, wetter winters, and more extreme weather events in the last ten years already identified. The scenarios produced by the UK Climate Impacts Programme (UKCIP02) suggests that the UK could experience by 2080:

- An increase of current average temperatures by 2-3.5^{o}C.
- Drier summers and wetter winters.
- More frequent summer droughts, winter flooding and storms; and
- A rise in the average level of the sea.

2.3.15 Whilst there are still uncertainties regarding exact changes at regional and local levels, it is clear there could be both direct and indirect impacts on landscape character. The potential implications for landscape character in Thurrock Borough include changes in habitats and species composition, habitat fragmentation, water resources, soils, agricultural land use, recreation and tourism and cultural heritage:

- Increases in sea levels, especially if coupled with increases in storm activity, may cause greater erosion of habitats such as intertidal mudflats and saltmarsh.
- Rising sea level may also affect agricultural land, which is currently located on reclaimed marshland.
- Rich agricultural land below 5m AOD is at risk of saline intrusion from rising sea levels. There may be an increased requirement for irrigation reservoirs to store winter rainfall and for use of sprinkling equipment etc. in summer. Traditional arable crops may also be replaced by more summer drought tolerant species such as sunflowers and maize.
- Damage to historic landscapes and archaeological sites may occur through erosion from sea level rise and flooding, as well as through changes in farming practice and soil desiccation.

Summary

2.3.16 The key issues and challenges arising from current and anticipated forces for change in the Thurrock landscape are:

- Arresting the further dilution of landscape character resulting from current farming practices.
- Ensuring that any potential new peripheral urban developments do not adversely affect landscape character.
- Ensuring that new industrial and commercial development is sited to minimise impacts on landscape character and visual amenity.
- Improving the transport network in an effort to reduce high traffic levels that create noise intrusion and barriers to movement within the Borough.
- Addressing the adverse impacts of small-scale incremental changes on the character and quality of the landscape.

3.0 CHARACTER AND SENSITIVITY OF THURROCK'S LANDSCAPES

3.1 General

3.1.1 This chapter presents an assessment of the existing 'baseline' character of Thurrock's landscapes. The assessment was based on a review of the Council's Draft Landscape Character Assessment completed in 1994, undertaken to update the baseline landscape characterisation work in the Borough to bring it into line with the Countryside Agency's best practice guidance published in 2002.

3.1.2 Evaluation of the landscape is associated with making informed judgements about the landscape. This chapter also sets out a strategic evaluation of the relative sensitivity of each of the Landscape Character Areas defined in Section 3.5 to urban development (with the exception of the Urban Character Areas).

3.1.3 The Study Area and Context is shown on Figure 2.1.

3.2 Characterisation and Evaluation Methodology

Characterisation Methodology

3.2.1 In line with the Countryside Agency's published national guidance, the characterisation method involved the following key steps:

- An analysis of the physical and cultural influences that have shaped the Thurrock landscape.
- An analysis of the forces for change affecting the character of the Thurrock landscape.
- The identification, classification and description of Landscape Character Types and Landscape Character Areas at a scale of 1:25,000.

3.2.2 Characterisation involves defining areas of distinctive character, i.e. what makes one landscape 'different' from another. A landscape can be assessed by disassembling and analysing its component parts. Such an assessment makes it easier to subsequently evaluate what is important or sensitive in a landscape, why it is sensitive and how best to accommodate change and identify enhancement needs for the future.

3.2.3 The landscape includes visible, physical components (e.g. landform, vegetation, land use, settlement), visible, spatial components (e.g. scale, pattern, texture) and non-visible components (e.g. sound and cultural associations). Whilst these do not lend themselves to accurate measurement, they can be easily described to give descriptions that are both relatively objective and meaningful, avoiding value judgements.

3.2.4 From an understanding of the component parts of the landscape, it is possible to identify how particular combinations of these interact to create distinctive character. This allows the classification of the landscape into generic Landscape Character Types and unique Landscape Character Areas (see Section 3.4 and 3.5 below).

Evaluation Methodology

Definition of Landscape Change

3.2.5 In line with the Countryside Agency's supplementary advice to its national guidance on Landscape Character Assessment, *Techniques and Criteria for Judging Capacity and Sensitivity* (Swanwick, 2004), the first step is to define the type of landscape change that is being considered by the assessment. For the purposes of the Study, this strategic evaluation has focused on determining the sensitivity of the Borough's Landscape Character Areas to the following three indicative types/scales of urban development comprising a mixture of urban land uses, including transport and other related infrastructure:

a) ***Very large-scale urban development*** – for illustrative purposes, this represents new development forms that either individually or cumulatively would equate to an urban land use approximately up to the size of South Ockendon.

b) ***Substantial-scale urban developments*** – for illustrative purposes, this represents new development forms that either individually or cumulatively would equate to an urban land use approximately up to the size of Aveley.

c) ***Small-scale urban developments*** – for illustrative purposes, this represents new development forms that either individually or cumulatively would equate to an urban land use approximately up to the size of East Tilbury.

Sensitivity Criteria

3.2.6 The principal criteria that were considered in determining sensitivity of the landscape to change are described below.

3.2.7 The overall evaluation is based on a professional judgement of the effects of a particular scale of development on a Landscape Character Area in relation to the following key factors:

- ***Effects of development on physical components of the landscape***– e.g. the degree to which sensitive physical/tangible features that contribute to distinctiveness may be lost or significantly damaged.

- ***Effects of development on how the landscape is experienced*** – e.g. the degree to which sensitive perceptual/intangible characteristics (such as openness, enclosure, remoteness, tranquillity etc.) that contribute to the experience of landscape are affected.

- ***The visual effects of development*** – e.g. the degree to which development would be conspicuous, intrude into key views, affect settlement approaches or their settings.

- ***The potential for mitigation of development impact on the landscape*** – e.g. through structural tree planting and safeguarding sensitive landscape features, perceptual characteristics and key views within development concepts.

3.2.8 The degree of sensitivity is evaluated using the following three-point scale:

- ***High Sensitivity*** – Area unlikely to be able to accommodate the particular type of change without extensive degradation of character and value. Mitigation measures are unlikely to be able to address potential landscape/environmental issues.

- ***Moderate Sensitivity*** – Area may be able to accommodate the particular type of change with some degradation of character and value, but mitigation measures would be required to address potential landscape/environmental issues.

- ***Low Sensitivity*** – Area should be able to accommodate the particular type of change with only very limited, if any, degradation of character and value. Mitigation measures should be able to address all potential landscape/environmental issues.

3.2.9 The overall sensitivity of the Borough's Landscape Character Areas to the three scales of urban development is indicated on Figure 3.1, and described in Section 3.5 below.

3.2.10 For each Landscape Character Area in turn, the key qualities or important characteristics that give a particular Landscape Character Area its distinctiveness and sense of place, and need to be sustained, are highlighted. These represent the key sensitivities that are considered to be constraints (or conditions) on development.

3.2.11 The assessment not only identifies landscape constraints, but also considers opportunities for 'green' infrastructure provision and environmental enhancement in each Landscape Character Area. Where appropriate, relevant opportunities are highlighted as suggested conditions necessary for enabling development to be successfully accommodated within a particular location.

3.3 Character of the Thurrock Landscape – An Overview

3.3.1 Thurrock exhibits a mosaic of markedly contrasting landscapes; from open and relatively tranquil and undeveloped farmland in the rural parts of the Borough to the north, to the contrast of the densely developed urban areas and industrial development adjacent to windswept grazing marshes along the Thames riverside.

3.3.2 The level and expansive coastal grazing marsh landscapes within Thurrock stamp their identity on the Borough. These vast open spaces have a wild and windswept character that is accentuated by broad expanses of sky. The marshland grasses create a constantly moving and changing tapestry of vegetation the character of which is influenced by the seasons and daily by light. Although marred by landfill sites and the clutter of pylons and power lines, the marshlands have an air of ancient permanence that contrasts sharply with the ever-changing urban forms adjacent to them. Of all the different landscapes within the Borough the intrinsic character of the marshland landscapes has remained essentially unchanged for centuries.

3.3.3 The Thames forms a distinctive 'riverscape' along the southern edge of the Borough. In the west near Aveley Marshes, the Thames is narrow, widening towards Holehaven Creek in the east. The banks of the river are penetrated by large creeks, smaller inlets and bays. Numerous jetties, wharfs and piers punctuate the northern bank, which is heavily industrialised for most of its length between Aveley Marshes and Tilbury, and again around Holehaven Creek. The presence of industry creates a dramatic riverscape of angular machinery and buildings, dock activity, river traffic and changing light reflected on the constantly moving water of the Thames. This contrasts with adjacent open and low-lying marshes that accentuate the vertical features of the docks. Settlement has sprawled along an east-west band to the north of the river and at South Ockendon. Road and rail infrastructure, pylons and power lines are prominent features within the urban fringe landscapes.

3.3.4 In contrast to the densely settled and industrialised areas, northern parts of the Borough are rural in character and the topography more undulating. Large, open prairie fields are a distinctive feature of the

large scale and exposed landscape character in this area. Despite the considerable loss of hedges the surviving, boundaries, tracks and lanes preserve the broadly east west/ north south rectilinear pattern of land division which is characteristic and of ancient origin. The Bulphan basin is an area of fenland landscape that sits between two prominent ridges. Within this basin the distinctive field pattern and relict drainage features are evidence of the long history of land drainage and agricultural land reclamation within the Borough. A well-wooded ridge running between Romford and Basildon provides a subtle but distinctive horizon in views from low lying land to the south.

3.3.5 Many features and areas within the Thurrock landscape have been designated for their nature conservation, heritage and other environmental values (see Figure 2.5 – Environmental Designations), and are key assets of Thurrock's landscapes.

3.4 Landscape Character Types

3.4.1 The Regional Character Areas identified by the Countryside Agency and English Nature provide a context for the identification of Landscape Character Types.

3.4.2 Landscape Character Types are broad tracts of land that share common characteristics of geology, landform, vegetation, land use and settlement that may reoccur throughout the Borough. Within Thurrock, 5 Landscape Character Types have been identified based on an analysis of geology, soils, topography, land cover, and settlement pattern.

3.4.3 The distribution of the 5 Landscape Character Types is shown on Figure 2.6, and their key characteristics are summarised below:

A - Fenland Landscape

- Level relief
- Open, exposed landscape
- Large scale arable and pasture farmland
- Gappy hedges
- Linear roads on causeways

B - Rolling Farmland/Wooded Hills Landscape

- Gently to strongly undulating low hills/ridges
- Large scale arable farmland and grazing
- Strong woodland structure
- Mature established hedges
- Isolated distinctive historic villages

C - Marsh Landscape

- Level relief
- Open, exposed, windswept landscape
- Large scale grazing farmland landscape
- Sparse settlement
- Creeks and ditches

D - Urban Fringe Landscape

- Diversity of temporary and permanent land uses
- Fragmented and chaotic character
- Transitional landscape
- High concentration of transport and utility infrastructure
- Pockets of farmland
- Redundant mineral workings

E - Urban Landscape

- Individual small to medium sized settlements
- Large linear riverside settlement
- Large industrial/commercial areas
- Largely modern monolithic housing developments
- Redundant and redeveloped mineral workings

3.5 Landscape Character Areas and Sensitivity to Change

3.5.1 The distribution of the 23 Landscape Character Areas is shown on Figure 2.6, and their key characteristics and overall character are summarised below:

A1 – Bulphan Fenland

Key Characteristics

- Area of low relief
- Level arable and pasture landscape

- Sparse settlement consisting mostly of scattered farmsteads
- Straight, causewayed roads arranged in a grid pattern
- Clipped and gappy hedges
- Some clumps of woodland
- Network of drainage ditches
- Open, exposed landscape
- Rural character
- Sense of tranquillity due to absence of major roads and built development
- Absence of vertical structures

Overall Character

This Landscape Character Area (LCA) lies in the north of Thurrock and extends beyond the administrative boundary to the foot of the Brentwood Hills. The eastern boundary of the area is marked by the gradual transition to rolling farmland within the Sticking Hill LCA, and is bounded to the west by a low broad ridge running north to south between Junction 19 of the M25 and South Ockendon. The southern boundary is marked by a change in relief to the lower slopes of the plateau area on which the urban area of Grays is situated. The A13 is a strong physical and visual boundary to the south of the character area.

The small village of Bulphan is an important feature within the character area. To the south and west expansive, level fields are important to the setting of the village. To the east, the A128 detracts from the approach to the village. Views of Bulphan from within the character area are limited as it is a settlement of low relief.

Evaluation

Sensitivity to very large-scale urban development – **High**
Very large-scale development would change the open, exposed and relatively flat character of the area. It would also cause a diminution of tranquillity. The predominantly rural character of the area would change to one strongly influenced by urban development.

Sensitivity to substantial-scale urban developments – **High**
Substantial-scale development would also cause extensive degradation of the open, exposed and tranquil landscape character of the area.

Sensitivity to small-scale urban developments – **Low**
The intrinsically rural character of this large-scale of landscape would not be compromised by the introduction of development of this size.

Key Qualities Desirable to Safeguard:

- Clumps of woodland
- Open, exposed landscape
- Rural setting of Bulphan village
- Sense of tranquillity due to absence of major roads and built development
- Long distance views across fenland to the north
- Several local nature conservation sites

Key Landscape Conditions and Options for Sustainable Development:

- A large proportion of this character area coincides with flood zones thus placing a constraint on where a stand-alone settlement might potentially be located.
- Introduction of Substantial-scale or very large-scale development into the area would diminish the sense of tranquillity experienced within the area. The essentially open, large-scale rural character of the landscape would be lost.
- Within Thurrock this landscape offers potential for recreational use as an area that is largely unspoiled by development. The Mar Dyke River Valley is a green link, which if further improved or extended could provide a strong connection between urban areas south of the A13 and the network of public rights of way within the heart of the Bulphan LCA.
- Development should be of a scale that does not compromise the open exposed nature if the landscape and should not contain high vertical structures.
- The rural setting to Bulphan should be protected.

B1 – Sticking Hill Rolling Farmland/Wooded Hills

Key Characteristics

- Area of gently undulating terrain.
- Arable and pasture farmland.
- Sparse pattern of settlement with a few individual farmsteads mainly located close to existing rural roads.

- Important nucleated historic settlements of Horndon on the Hill and Orsett.
- Mature hedgerows in places.
- Woodland clumps in the southern half of the area.
- Tranquil rural character.

Overall Character

This Landscape Character Area forms a distinctive area of raised relief to the east of the Fenland Landscape Type. Its character is predominantly rural farmland although there are some typical urban fringe land uses such as the Langdon Hills Golf Course in the east of the character area. The boundary to the east of the character area is formed by the rising topography of the wooded hills within the Langdon Hills character area. To the south the character area boundary is delineated by the A13. Settlement is concentrated within the south where the villages of Horndon on the Hill and Orsett are situated.

The historic village of Horndon on the Hill, and the hill on which it is situated, are important landscape features that stamp an identity on the character area. From the village, extensive views are afforded to the Estuarine Marsh Landscape Type and to the rural interior of Sticking Hill LCA. Intervisibilty between Horndon on the Hill and the Linford/Buckingham Hill LCA, across a major transport corridor, accentuates the physical separation of the predominantly rural character of Sticking Hill LCA and the Urban Fringe Landscape Type to the south.

The small village of Orsett is important to the character of the area as it marks the transition between Sticking Hill LCA and the lower lying relief of Bulphan LCA.

Evaluation

Sensitivity to very large-scale urban development – **High**
The essentially rural character and dispersed settlement pattern of the area would be changed by development of this scale.

Sensitivity to substantial-scale urban developments – **High**
The essentially rural character and dispersed settlement pattern of the area would be changed by development of this scale.

Sensitivity to small-scale urban developments – **Low**
The essentially rural and tranquil character of the area would not be changed by development of this scale.

Key Qualities Desirable to Safeguard:

- Sparse pattern of settlement with a few individual farmsteads mainly located close to existing rural roads.
- The setting to important nucleated settlements of Horndon on the Hill and Orsett.
- Extensive views from Horndon on the Hill.
- Mature hedgerows in places.
- Woodland clumps in the southern half of the area.
- Tranquil rural character in the north of the area.
- Local historic landscape at Orsett.

Key Landscape Conditions and Options for Sustainable Development:

- Ensure that any development responds to the dispersed rural settlement pattern in the south of the character area.

B2 – Langdon Hills Rolling Farmland/Wooded Hills

Key Characteristics

- Small scale steep, rounded sand and gravel hills.
- Sense of elevation and intimacy.
- Woodland is a strong, unifying element.
- Irregularly shaped fields on higher slopes adjacent to woodland.
- Horse grazing within the lower slopes in the north east of the character area.
- Rough texture.
- Absence of detracting vertical features.

Overall Character

The character area is formed by steep, rounded sand and gravel hills comprising the highest land within Thurrock. The eastern boundary of the character area is delineated by the A13 which marks the transition

to gently undulating farmland slopes within the Fobbing Ridge LCA. The well-wooded nature of the character area creates a sense of enclosure and intimacy. Certain locations within the elevated hills afford extensive long distance views encompassing the Fenland Landscape. The dramatic, jagged central London skyline in the distance contrasts with the level character of the Belhus LCA and accentuates the sense of rurality and separation from urban areas to the south. The character area is buffered from the settlement of Basildon to the north by a belt of nature conservation areas and urban fringe open space.

Evaluation

Sensitivity to very large-scale urban development – **High**
Very large-scale development would mask the underlying hilly topography of the landscape and result in the removal of woodlands, both of which are intrinsic to the intimate landscape character of the area.

Sensitivity to substantial-scale urban developments – **High**
Substantial-scale development would partially mask the underlying hilly topography of the landscape and result in the removal of woodlands. The tranquil rural character of the landscape would be lost.

Sensitivity to small-scale urban developments – **Moderate**
There would be some degradation of the essential qualities that make the area distinctive if development of this scale were to occur. However the existing character of the area could be retained by appropriate mitigation.

Key Qualities Desirable to Safeguard:

- Sense of elevation and intimacy.
- Woodland as a strong, unifying element.
- Patches of ancient woodland.
- Absence of detracting vertical features.
- Extensive long distance views from locations within the elevated hills.
- Langdon Hills Country Park.
- Several small local nature conservation sites.
- County wildlife sites.
- The appearance and condition of Old Church Hill protected lane.
- Basildon Meadows SSSI.

Key Landscape Conditions and Options for Sustainable Development:

- The thickly wooded, undulating landscape of the Langdon Hills provides an existing landscape framework that could be utilised to accommodate small-scale development with some loss of character.
- Development would need to be sited away from hilltops and avoid obscuring key views westward from the area.
- The existing woodland structure would need to be supplemented by new planting of a species composition that complemented the existing nature conservation sites before development could proceed.

B3 - Fobbing Ridge Rolling Farmland/Wooded Hills

Key Characteristics

- Gently undulating farmland.
- Wide scarp slope.
- Extensive views to the south and east.
- Visual clutter of pylons and power lines.
- Large rectilinear fields.
- Clipped and/or gappy hedges.
- Landmark buildings within the historic cores of Fobbingham & Corringham.

Overall Character

The area is characterised largely by undulating farmland that rises to a low ridge on which there is a linear settlement spreading north from the village of Fobbing along a minor road. It is a transitional area that shares some of the characteristics of the Sticking Hill LCA. However, it is subtly different, containing a linear settlement with a loosely defined edge and a distinctive escarpment edge to the east and south east. Despite the close proximity to Corringham and Stanford-le-Hope the character area is not heavily influenced by urban fringe land uses common to other character areas adjacent to the larger settlements within Thurrock. This is due in part to a strong settlement boundary formed by the A1014, the railway line, the A13 to the north and the low, broad ridge to the east.

Evaluation

Sensitivity to very large-scale urban development – **High**
Development of this scale would be visually prominent to the population of Corringham. It would also change the appearance and open character of the wide scarp slope, which is a key characteristic of this area.

Sensitivity to substantial-scale urban developments – **High**
Development of this scale would increase the density of settlement within this character area and change the dispersed settlement pattern.

Sensitivity to small-scale urban developments – **Moderate**
Although the character area is situated adjacent to the settlement of Corringham there is an abrupt transition between the settlement and the essentially rural character of the area. Small-scale development, appropriately sited, would not change the overall character of the area.

Key Qualities Desirable to Safeguard:

- Wide scarp slope.
- Extensive views to the south and east.
- Distinctive escarpment edge to the east and south-east.
- Essex wildlife trust site.
- Fobbing Marsh County Wildlife Site.
- Fobbing Marsh SSSI

Key Landscape Conditions and Options for Sustainable Development:

- One or more small-scale urban extensions to Corringham could be achieved within this character area.
- Improve the landscape of the A1014 road corridor whilst retaining views from Corringham to the south.
- Soften Corringham's eastern urban edge.
- Strengthen existing hedgerow planting to integrate development into the surrounding farmland landscape.
- Ensure that development does not break the existing urban skyline or that of the scarp edge.

B4 – Belhus Rolling Farmland/Wooded Hills

Key Characteristics

- Gently undulating farmland landscape.
- Mature, established hedgerows.
- Clumps of ancient woodland.
- Areas of parkland landscape.

Overall Character

The Landscape Character Type within which the Belhus LCA is situated, extends beyond the Thurrock boundary encompassing rural landscape between Upminster and South Ockendon. Belhus LCA is therefore physically separated from other character areas within this landscape character type. However, it shares similar characteristics being an area of elevated, gently rolling topography under a mixture of arable and pasture farmland. The eastern boundary of the area is delineated by a low ridge. Aveley and South Ockendon, and the urban fringe land uses associated with these settlements, form the southern boundary to this character area.

Evaluation

Sensitivity to very large-scale urban development – **High**
Due to the small area covered by this character area, it would be highly sensitive to a very large scale urban development.

Sensitivity to substantial-scale urban developments – **High**
A Substantial-scale urban development would change the character of this area to a predominantly urban character.

Sensitivity to small-scale urban developments – **Moderate**
The character area may be able to accommodate small-scale urban development with only some degradation of character and value.

Key Qualities Desirable to Safeguard:

- Mature, established hedgerows.
- Clumps of ancient woodland.

- Areas of parkland landscape.
- Several small County Wildlife Sites.
- Local nature conservation corridor.
- Belhus Woods Country Park.
- Woodland Trust land to the north of Aveley.

Key Landscape Conditions and Options for Sustainable Development:

- The majority of the Belhus character area extends beyond Thurrock into the London Borough of Havering.
- Development should respect the historic and recreational landscapes within the west of the area where there are also sites of nature conservation value.
- The character area coincides with the Thames Chase Community Forest which aims to increase woodland cover within its boundaries. Increasing the amount of woodland clumps and hedgerows in the eastern part of the character area could ease integration of a development into the landscape whilst achieving the objectives the Community Forest.

C1 – Fobbing Marshes

Key Characteristics

- Level, low lying and exposed.
- Large scale landscape.
- Extensive areas of grazing marsh enclosed by post and wire fences.
- Absence of settlement and roads.
- Sense of wildness and remoteness.
- Network of winding ditches.
- Wide sweeping views dominated by sky.
- Confusion of vertical structures to the south of the character area.
- Vange and Fobbing Marshes SSSI.

Overall Character

Fobbing Marshes LCA is located in the east of Thurrock and extends beyond the Borough Boundary to Benfleet Creek. The majority of the character area within Thurrock lies immediately to the west of Holehaven Creek and to the east of the low ridge north of Fobbing village. The character area coincides with part of the Essex Coast Environmentally Sensitive Area (ESA), which contains important historic field pattern of grazing marsh. A finger of marshland extends between the south facing scarp slope of Fobbing Ridge LCA and Shellhaven LCA. The area is low lying, open, windswept and exposed consisting mostly of grazing marsh with pockets of intensive arable farmland. The visual horizon to the north is formed by the broad ridge on which Basildon and South Benfleet are situated. To the south, structures within the BP Coryton Refinery interrupt views to River Thames and the south side of the Estuary.

Evaluation

Sensitivity to very large-scale urban development – **High**
Within the character area are a number of environmental designations, including part of the Essex Coast ESA, that contribute to its value and character. The essentially open and exposed character of Fobbing Marshes and the historic land use pattern within it would be changed by very large scale urban development.

Sensitivity to substantial-scale urban developments – **High**
The essentially open and exposed character of Fobbing Marshes and the historic land use pattern within it would be changed by very large-scale urban development.

Sensitivity to small-scale urban developments – **Moderate**
The current absence of settlement within this character LCA, and its open and exposed nature, means that the area is moderately sensitive to even a small scale urban development.

Key Qualities Desirable to Safeguard:

- Level, low lying and exposed.
- Large-scale landscape.
- Absence of settlement and roads.
- Sense of wildness and remoteness.
- Wide sweeping views dominated by sky.
- Holehaven Creek SSSI.
- Fobbing Marsh SSSI.
- Fobbing Marsh County Wildlife Site.

Key Landscape Conditions and Options for Sustainable Development:

- The Essex Coast ESA, valued for its archaeological and wildlife interest coincides with most of the character area.
- Development would need to be located outside the ESA boundary.

C2 – BP Coryton and Marshes

Key Characteristics

- Low lying, level landscape.
- Industrial landscape dominated by vertical features.
- Remnant marsh grasslands.
- Transport infrastructure.
- Sense of 'exclusion'.

Overall Character

BP Coryton is located in the east of Thurrock to the south of Fobbing Marshes LCA and beside the River Thames. It is a landscape dominated by the refining, storage and distribution of oil, and the various structures associated with these functions. Large industrial sheds, broad cylindrical storage structures and tall chimneys are characteristic built forms within the character area. Between the structures and building plots the undeveloped land retains remnant marsh characteristics.

Evaluation

Sensitivity to very large-scale urban development – **Low**
The dominant characteristic of this landscape is the presence of industry on a very large scale, mingled with remnant marsh landscape. Very large-scale urban development would potentially result in the removal of industrial buildings. There would be a change in character from industrial marshland to urban which would not degrade the character or value of this area.

Sensitivity to substantial-scale urban developments – **Low**
Substantial-scale urban development would potentially result in the removal of some industrial buildings. There would be a change in parts of the character area from industrial marshland to urban which would not degrade the character or value of this area.

Sensitivity to small-scale urban developments – **Low**
A small scale urban development would cover a very small proportion of this already industrial marshland landscape. Hence the low sensitivity of the character area to this type of change.

Key Qualities Desirable to Safeguard:

- Remnant marsh grasslands.
- Habitats along Thames foreshore.

Key Landscape Conditions and Options for Sustainable Development:

- Development would need to be designed such that views through to the Thames Estuary are conserved.

C3 – Mucking Marshes

Key Characteristics

- Low lying, level landscape.
- Large scale landscape.
- Sparse settlement and absence of roads.
- Disturbed land restored to rough grassland.
- Absence of hedgerows.
- Long distance views inland to Buckingham Hill and Langdon Hills.

Overall Character

The character area is in the east of Thurrock and forms part of an extensive area of Estuarine Marsh that extends from Holehaven Creek in the east to Tilbury Docks near Grays. The landscape is level, low lying, exposed and windswept consisting predominantly of grazing marsh. Part of the Essex Coast ESA coincides with the character area. There is an absence of settlement, with the exception of the village of East Tilbury in the west of the character area. The western part of the village contains a large conservation area, East Tilbury (Bata) Conservation area, which was designed and built to house the workforce of the British Bata Shoe Company. The eastern part of the village consists of a modern housing development, which together with the Bata area protrudes into the marshland landscape. Coalhouse Fort at the southern end of the character area is an important landmark features and site of historic importance.

Evaluation

Sensitivity to very large-scale urban development – **High**
The introduction of very large-scale development within this LCA would change its character from that of an open, exposed sparsely populated marshland landscape to an urban character. The marshlands within the character area are valued as open countryside and as wildlife habitats.

Sensitivity to substantial-scale urban developments – **High**
Substantial-scale urban development would markedly increase the urban character of the marshlands. There would be degradation of the open, exposed and predominantly rural character of the marshlands.

Sensitivity to small-scale urban developments – **Moderate**
Small scale development would be intrusive within this area although there would be some potential to mitigate.

Key Qualities Desirable to Safeguard:

- The important landmark of Coalhouse Fort (site of historic importance).
- Low density of settlement and absence of roads.
- Disturbed land restored to rough grassland.
- Exposed and windswept character.
- Setting of East Tilbury (bata) Conservation Area.
- County Wildlife Site.
- Stanford Warren - Essex Wildlife Trust Reserve.
- Mucking Flats and Marshes SSSI, SPA and Ramsar Site.

Key Landscape Conditions and Options for Sustainable Development:

- Ensure development is sited adjacent to existing urban areas and roads.
- Soften urban edges through the use of wetland habitats to act as a buffer between the settlement and the majority of the character area.
- Ensure that development respects the open experience and horizontal appearance of the landscape.

C4 – Mucking Flats and Marshes

Key Characteristics

- Low lying, level landscape.
- Horizontal landform.
- Sense of exposure and wildness.
- Complex pattern of small inlets, ditches and creeks.
- Long distance views to prominent natural and man made features.
- Strong tidal influence.

Overall Character

Mucking Flats LCA is located in the east of Thurrock and consists of an extensive area of mudflats and saltmarsh designated as a SSSI, SPA and a Ramsar site. The area is low-lying and level with a complex pattern of small inlets, ditches and creeks adjoining extensive mudflats that are revealed at low tide. There is a sense of exposure and wildness at times, which is compromised by the presence of passing river traffic and the industrial structures of BP Coryton & Marshes LCA visible within views to the north. Some areas of saltmarsh have been previously subject to localised tipping. The engineered structure of the sea wall is a strong physical boundary between the tidal flats and the Mucking Marshes LCA. However, the wall does not detract from the important long distance views to the Langdon Hills, and across the River Thames, to hills in Kent. Coalhouse Fort is a distinctive landmark and visual focus within views to the south of the character area.

Evaluation

Sensitivity to very large-scale urban development – **High**
The area is a tidal mudflat, SSSI and Ramsar site. It is internationally valued as a site of importance to migratory wading birds.

Sensitivity to substantial-scale urban developments – **High**
The area is a tidal mudflat, SSSI and Ramsar site. It is internationally valued as a site of importance to migratory wading birds.

Sensitivity to small-scale urban developments – **High**
The area is a tidal mudflat, SSSI and Ramsar site. It is internationally valued as a site of importance to migratory wading birds.

Key Qualities Desirable to Safeguard:

- Sense of exposure and wildness.
- Complex pattern of small inlets, ditches and creeks.
- Long distance views to prominent natural and man made features.
- Mucking Flats and Marshes SSSI part of Thames Estuary and Marshes SPA and Ramsar Site.

Key Landscape Conditions and Options for Sustainable Development:

- It is unlikely that development of the scales listed in section 3.2.5 would be able to be accommodated successfully whilst safeguarding those attributes that contribute to the distinctiveness of the Mucking Flats LCA.

C5 – Tilbury Marshes

Key Characteristics

- Low lying, level landscape.
- Horizontal landform.
- Large scale landscape.
- Network of linear ditches.
- Southern skyline of dock cranes, chimneys, pylons and power lines.
- Close proximity of residential areas.

Overall Character

The character area is located in the south east of Thurrock adjacent to the River Thames. To the north the area is bounded by the Chadwell Escarpment Urban Fringe LCA which rises abruptly from the level marshland landscape. A broad wedge of the character area penetrates the Urban Landscape between the settlements of Chadwell St Mary and Tilbury. In general Tilbury Marshes LCA consists of level, low lying, drained alluvial marshland under predominantly arable farmland but with smaller concentrations of rough grazing land around Little Thurrock, Tilbury Fort and Goshems Farm. The enclosure pattern is defined by straight ditches and dykes creating predominantly rectilinear field shapes particularly in the west of the character area where the influence of the Chadwell Escarpment LCA is not as strong. Within the east fields are larger with irregular boundaries. In the south of the area adjacent to the River Thames there are two markedly different landmark buildings that visually articulate the long settlement period of this landscape and its changing function. The existing building at Tilbury Fort originated as a British Castle Fortress type Fort with four diamond shaped buttresses forming an overall pentagon, and was used as a defence throughout its history until the late 19th century. Tilbury Power Station is a 1400 Megawatt coal fired power station. Its concrete chimneys are visible from many locations within Thurrock and Kent Thames-side. A tight network of pylons and power lines emerges north from the power station across Tilbury Marshes LCA.

Evaluation

Sensitivity to very large-scale urban development – **High**
Very large-scale development would result in extensive degradation of the large-scale low-lying character of Tilbury Marshes LCA.

Sensitivity to substantial-scale urban developments – **Moderate**
The character area is strongly influenced by urban areas and utilities infrastructure. The addition of development of this scale, if sited appropriately would not degrade the overall character of the LCA.

Sensitivity to small-scale urban developments – **Low**
Small-scale development would result in only limited degradation of the elements that together combine to give the area's open, exposed character.

Key Qualities Desirable to Safeguard:

- The setting to Historic Tilbury Fort.
- Horizontal landform.
- Large scale landscape.
- Sense of exposure and openness.
- County wildlife and nature conservation sites.
- Historic pattern of drainage ditches.
- Historic green lanes.

Key Landscape Conditions and Options for Sustainable Development:

- Ensure that new development respects the setting of Chadwell Escarpment Urban Fringe LCA.
- Opportunity to create new landscapes associated with urban extensions in the west of the character area.
- Ensure that a linear area of marshland habitat is retained within Substantial-scale developments.

- Facilitate access to the marshes from settlement edges via green links.
- Soften the edges of developments with areas of open water and reed beds reflecting the moats at Tilbury Fort.

D1 – Aveley/South Ockendon Urban Fringe

Key Characteristics

- Pockets of agricultural land use.
- Weak enclosure pattern of gappy, incomplete or absent hedges.
- Harsh urban edges to some parts of Aveley and South Ockendon.
- Flooded gravel pits.
- Paddocks and equestrian land uses.
- Chaotic, fragmented character.
- Strong physical barriers formed by roads.
- Movement of traffic through major transport corridors.
- Noise intrusion from road traffic.

Overall Character

This character area lies to the north of the Mar Dyke River Valley Urban Fringe LCA and envelops the small settlements of Aveley and South Ockendon. It lacks the unifying elements that give a sense of cohesion and order to Bulphan or Langdon Hills LCAs and has a chaotic character. As an urban fringe landscape, it is transitional in nature and strongly influenced by the two settlements, which are separated by Belhus Park and the M25. The M25, A13, CTRL and C2C rail network are concentrated within the western half of the character area. Generally it is a degraded, impoverished working landscape subjected to a diverse range of land uses including recreation, transport and utility corridors, agriculture, mineral extraction, landfill and equestrian uses. The underlying physical character of the landscape is a gently undulating plateau that slopes gradually down to the eastern Fenland Landscape. Certain locations along the edges of the plateau afford long distance views across the Mar Dyke River Valley towards the predominantly industrial character of West Thurrock and Purfleet Urban LCA and the cluttered skyline of pylons, bridges and other structures.

Evaluation

Sensitivity to very large-scale urban development – **High**
The character area is strongly influenced by the two urban areas adjacent to it. The area contains valuable historic landscapes and wildlife conservation sites. Development of this scale would result in the loss of these features that are important to the LCA's overall character.

Sensitivity to substantial-scale urban developments – **Moderate**
Substantial-scale urban development could potentially make use of the less valuable landscapes within the area without degrading the overall character of the LCA.

Sensitivity to small-scale urban developments – **Low**
Low sensitivity due to the already strong influence and visual prominence of the two existing settlements of Aveley and South Ockendon adjacent to the character area.

Key Qualities Desirable to Safeguard:

- Flooded gravel pits which provide important habitats.
- Outward looking long distance views across the Mar Dyke River Valley.
- County Wildlife Sites.
- Local Historic Landscape at Belhus Park.
- Pockets of agricultural land that create a rural character.
- Inner Thames Marshes SSSI.

Key Landscape Conditions and Options for Sustainable Development:

- Ensure that development respects the existing historic landscape framework of the area and nature conservation sites.
- Potential to enhance the environment of the A13 corridor to complement appropriate development.
- Soften urban edges through structure planting and by strengthening existing hedgerows.
- Retain and enhance existing open space on the settlement edges and utilise them to enhance connectivity between them wildlife and recreation sites.
- Opportunity to create community woodlands.
- Thames Chase Forest initiative, Green Grid South Essex, RSPB Rainham, Wennington and Aveley Marshes Reserve (London Conservation Park), could attract funding and support establishment of an appropriate landscape framework for development.

D2 - Mar Dyke River Valley Urban Fringe

Key Characteristics

- River valley with moderate to steep valley sides to the east and broader floodplain to the west.
- Well wooded valley sides with significant areas of ancient woodland.
- Dominant infrastructure in the west.
- Areas of wet grazing on floodplain.
- Evidence of past mineral extraction.

Overall Character

The character area comprises the middle and lower sections, including the channel, floodplain and valley sides of the Mar Dyke River Valley. The M25/A282 and A13 (with their associated junctions) dissect the character area. To the east, the valley has moderate to steep valley sides, formed from clay and sand/gravel pebble beds. The narrow level alluvial floodplain contains a broad tract of grassland and is fringed by damp pastures with wet grazing. The valley sides are well wooded, including ancient semi natural ash/hazel or oak and mixed woodland of Brannet's Wood, Millards Garden and Brick Barn Wood. Individual pollarded willow riverside trees and small areas of self-regenerating scrub/woodland are also a feature of parts of the valley floor. The small settlement of North Stifford forms a focal point for attractive views along the eastern part of the valley and the Victorian brick railway viaduct and Edwardian Stifford Pumping Station provide distinctive historic built features. To the west, as the river approaches its confluence with the River Thames at Purfleet, the valley is broader, flatter and more open. Intrusive pylons, situated on the river terraces, dominate long views along the valley, with Watt's Wood providing a framing backdrop on the southern valley side. Warehouse buildings on the urban fringe of Purfleet, and a caravan site also detract from visual amenity. Rough grassland, with remnant hedges is predominant on the more open valley sides. There is some sense of seclusion within the east of the character area, however tranquillity is disturbed in proximity to the major roads and settlements.

Evaluation

Sensitivity to very large-scale urban development – **High**
The Mar Dyke River Valley LCA has along its length many countryside management initiatives and is the focus of nature conservation and recreational activities. It is also a relatively small character area. It is therefore assessed as highly sensitive to very large-scale development.

Sensitivity to substantial-scale urban developments – **High**
Development of this scale would cause extensive degradation to those features of value and characteristics that distinguish the LCA.

Sensitivity to small-scale urban developments – **Moderate**
Small scale urban development would cause some degradation of landscape character. However there may be scope to integrate the development within the landscape.

Key Qualities Desirable to Safeguard:

- Areas of wet grazing within the floodplain.
- Ancient woodland on valley sides (Brannett's wood, Millard's Green & Brick Barn Wood).
- Distinctive built heritage features – Victorian brick-built viaduct/Edwardian Stifford pumping station.
- Small areas of self-regenerating scrub/woodland and individual pollarded trees.
- Local nature conservation designation (Mar Dyke River Corridor).
- Extensive County Wildlife Site.

Key Landscape Conditions and Options for Sustainable Development:

- It is unlikely that development of the scales listed in section 3.2.5 would be able to be accommodated successfully whilst safeguarding those attributes that contribute to the distinctiveness of the Mar Dyke River Valley Urban Fringe LCA. However, small scale development could potentially be accommodated given the provision of extensive new green infrastructure.

D3 - North Stifford Corridor Urban Fringe

Key Characteristics

- Relatively flat land.
- Visual clutter of pylons and infrastructure.
- Mixed urban fringe land uses.
- Extensive road network.

Overall Character

The character area is delineated on all sides by major roads (A13 to the north, M25 to the west and A1036 to the south). Located to the north of Chafford Hundred and Lakeside Retail Park and to the

south of the Mar Dyke river valley, the area is predominantly flat with some landform screening mounds and small patches of woodland close to the roads. Localised steeper slopes and cliff faces provide visual interest. The area has a fragmented character, arising from mixed urban fringe-related land-use, including farmland, areas of past mineral extraction, Thurrock motorway services, lake, Motor Sports Complex and Coach Park. Pylons and other infrastructure dominate the visual amenity in the south of the character area.

Evaluation

Sensitivity to very large-scale urban development – **High**
Due to its small size the character area would not be able to accommodate development of this scale.

Sensitivity to substantial-scale urban developments – **High**
Due to its small size the character area would not be able to accommodate development of this scale. Purfleet Chalk Pits SSSI in the west of the LCA is of geological significance. Its presence reduces the overall developable area of the LCA.

Sensitivity to small-scale urban developments – **Low**
Urban fringe is the dominant characteristic of this LCA. The introduction of small scale development could be beneficial.

Key Qualities Desirable to Safeguard:

- Small patches of woodland.
- Purfleet Chalk Pits SSSI.
- Vegetation along transport corridors.

Key Landscape Conditions and Options for Sustainable Development:

- It is unlikely that development of the scales listed in section 3.2.5 would be able to be accommodated successfully within the North Stifford Corridor LCA. However, small scale development could potentially be accommodated given the provision of new green infrastructure.

D4 – White Crofts/Orsett Heath Urban Fringe

Key Characteristics

- Gently undulating encapsulated urban fringe farmland.
- Large fields with weak enclosure pattern.
- Abrupt urban edges.
- Noise and visual intrusion from roads.
- Visual intrusion form pylons and power lines.
- Remnant hedgerow lined lanes.

Overall Character

The character area is located to the north of Grays and east of Chadwell St Mary. The area consists predominantly of gently undulating urban fringe farmland strongly influenced by the presence of transport corridors and utilities infrastructure. The centre of the area, in the vicinity of White Crofts, consists of a bowl shaped farmland landscape. The hedgerow lined Hornsby Lane, connecting the A1013 with Orsett Heath, crosses this landform and gives a sense of the rural farmland landscape that has since been encapsulated by roads and settlement and crossed by pylons and power lines. Settlement pattern consists of farm steadings adjacent to the numerous minor roads and lanes that cross the character area. Other than the tiny hamlet of Orsett Heath, the only other settlement is the village of Southfields in the north east of the character area. Southfields is linear in shape with a sprawling suburban eastern fringe. The harsh northern urban edge of Chadwell St Mary is dominated by three residential tower blocks that contrast with the open undulating farmland immediately adjacent to them. Western parts of the character area are dominated by the large junction on the A13 south of Baker Street. The north and north-eastern urban edge of Grays is abrupt, delineated by built form. However, some vegetation has been retained adjacent to distributor roads on the northern edges of Grays, providing some screening to the A13. Pylons and power lines are visually intrusive features within this character area.

Evaluation

Sensitivity to very large-scale urban development – **High**
Development of this scale would mask the remnant farmland landscape within this urban fringe landscape changing it to a predominantly urban area. The character of rural lanes would be lost.

Sensitivity to substantial-scale urban developments – **Low**
Development of this scale would leave some areas of farmland untouched and a sense of openness would be retained. There would be some visual intrusion to receptors on the fringes of the existing settlements.

Sensitivity to small-scale urban developments – **Low**
Development of this scale would not degrade the character of the landscape which is strongly influenced by adjacent urban areas.

Key Qualities Desirable to Safeguard:

- Remnant hedgerow lined lanes.
- County Wildlife Site.
- Local Nature Conservation Sites.
- Narrow lanes.
- The character of the hamlet of Orsett Heath.

Key Landscape Conditions and Options for Sustainable Development:

- Ensure that development is not sited at prominent skyline locations.
- Create a more 'permeable' urban fringe by promoting recreational use
- Utilise existing areas of open space within the urban fringe to create 'green wedges' through which access opportunities to countryside to the north of the A13 could be facilitated.
- Ensure that small lanes are integrated into appropriate development.

D5 – Linford/Buckingham Hill Urban Fringe

Key Characteristics

- Elevated, broad rounded ridge.
- Urban/rural fringe character.
- Multiple land uses including mineral extraction and industrial land uses.
- Extensive views to the south.
- Concentration of woodland around the Durox site.
- Rough pasture on the crest of the ridge.
- Dispersed settlement pattern of farmsteads.

Overall Character

This character area is a distinctive area of mostly elevated landform forming a high point extending from Stanford-le-Hope in the north-east to Hoford Road in the south-west. It is bounded to the north by lower lying land of the Sticking Hill LCA, to the south by undulating farmland of West Tilbury LCA and to the east by Mucking Marshes LCA. A visually prominent, broad, flat to undulating topped ridge is the principal unifying feature within this area. This relief is in marked contrast to adjacent character areas, particularly Mucking Marshes LCA. There is a diverse range of land uses within the area including, rough grazing on the ridge top, mineral extraction, Durox Industrial Plant, landfill, recreation and agriculture. Despite the elevated landform and the sense of separation from settlement edges there is an urban fringe character to the area to which the busy Buckingham Hill Road, pylons and power lines contribute. There is a concentration of woodland around the Durox site and extensive woodland and thick hedgerows on the south-western part of the hill. Settlement pattern consists of dispersed farm buildings, the village of Linford being the only settlement within the area. From the ridge there are extensive views towards the Thames Estuary, Kent Hills and the Sticking Hill and Langdon Hills LCAs to the north. There is a sense of elevation and separation between industrial/urban areas.

Evaluation

Sensitivity to very large-scale urban development – **High**
Development of this scale would mask the visually prominent ridge which is the unifying feature within this character area. There are small areas of nature conservation importance within the area.

Sensitivity to substantial-scale urban developments – **High**
Development of this scale would mask the visually prominent ridge which is the unifying feature within this character area. There are small areas of nature conservation importance within the area.

Sensitivity to small-scale urban developments – **Low**
Development of this scale could potentially be achieved whilst retaining the integrity of the character of visually prominent ridge and its valuable landscape features.

Key Qualities Desirable to Safeguard:

- Extensive views to the south.
- Concentration of woodland around the Durox site.

Key Landscape Conditions and Options for Sustainable Development:

- Introduction of new small-scale development should avoid the prominent broad flat to undulating topped ridge.
- Extensive open views to the south should be maintained.
- Within this landscape character area, there is also the potential for the creation of new escarpment woodlands and hedgerows.

D6 – Chadwell Escarpment Urban Fringe

Key Characteristics

- Steep-sided, south facing sand and gravel escarpment.
- Irregular fields of rough grassland and pasture.
- Small copses and areas of scrub.
- Series of narrow lanes enclosed by hedgerows.
- Series of individual historic farmsteads.

Overall Character

The character area encompasses a steep sided, south facing sand and gravel escarpment, which marks the edge of the lowest part of the Thames Terraces. Relatively low in height, the escarpment provides a marked contrast to the flat, drained alluvial farmland of Tilbury marshes to the south. A few small dry valleys also indent the east to west aligned escarpment. Small copses and areas of scrub (comprised of hawthorn, blackthorn, field maple, elm, oak and ash) frame small-scale, irregular fields of rough grassland and pasture. The escarpment is accessible via a series of narrow, winding lanes, enclosed by hedgerows. The church tower within the small settlement of West Tilbury is a focal point on the skyline. Other than west Tilbury, settlement patterns consist of a series of individual historic farmsteads. Power lines dominate the visual amenity to the west of the character area, and there is adverse impact from major roads around Chadwell, together with localised intrusion from urban edge housing, industrial and mineral sites.

Evaluation

Sensitivity to very large-scale urban development – **High**
Chadwell LCA is a small scale intimate landscape that would be masked by development of this scale.

Sensitivity to substantial-scale urban developments – **High**
Chadwell LCA is a small scale intimate landscape that would be masked by development of this scale.

Sensitivity to small-scale urban developments – **High**
Intrinsic to the character of this area is its steep topography that contrasts with the adjacent low lying areas. The land use pattern on these slopes consists of a mosaic of small fields and paddocks and wildlife sites. The intrinsic character of the area would be degraded by small scale development.

Key Qualities Desirable to Safeguard:

- Small copses and areas of scrub (comprised of hawthorn, blackthorn, field maple, elm, oak and ash).
- Series of narrow lanes enclosed by hedgerows.
- Series of individual historic farmsteads.
- County Wildlife Sites, e.g. Broom Hill.

Key Landscape Conditions and Options for Sustainable Development:

- It is unlikely that development of the scales listed in section 3.2.5 would be able to be accommodated successfully whilst safeguarding those attributes that contribute to the landscape character of the Chadwell Escarpment.

D7 – West Tilbury Urban Fringe

Key Characteristics

- Gently undulating farmland.
- Large, open fields.
- Absence of hedgerows and woodland cover.
- Harsh urban edges.
- Visual intrusion of pylons and power lines.
- Concentration of settlement in the east of the area.
- Dispersed farmsteads.
- Network of minor roads and lanes.
- County Wildlife Sites, e.g. Broom Hill.

Overall Character

This character area forms a broad swathe of farmland between Chadwell St Mary and East Tilbury. Its northern boundary is clearly defined by the Linford/Buckingham Hill LCA Escarpment, and its south-western boundary by Chadwell St Mary and the West Tilbury Escarpment. The urban edges of Chadwell St Mary, Linford and the western edge of East Tilbury are abrupt with very little softening of the urban edge by vegetation or landform. Parts of the eastern edge to Chadwell St Mary are poorly defined by open space and agricultural land that appears unmanaged having the appearance of derelict land. To the south and east of the area are the low-lying character areas of Mucking Marshes and Tilbury Marshes. The area is generally open in character with landcover consisting mostly of large arable fields. There is a remnant historic field pattern in the south east of the area. Tree cover is limited, primarily due to the loss of hedgerow elm trees. Where hedgerows have not been lost they frequently occur along historic lanes and tracks. Localised small copses consisting of hawthorn, elm, field maple and ash, and areas of scrub, are found around West Tilbury, Low Street, and east of Princess Margaret Road around Coalhouse Battery. Settlement is concentrated towards the eastern boundary with the pattern throughout the area being predominantly scattered farm buildings. The character area is crossed by a network of minor roads and lanes that carry some heavy traffic associated with local mineral works within the Linford/Buckingham Hill LCA. A railway line dissects the eastern half of the area. Pylons and power lines are a dominant feature traversing north to south across the middle of the character area.

Evaluation

Sensitivity to very large-scale urban development – **High**
The dispersed settlement pattern of this area would change to predominantly urban with the introduction of development of this scale. This type of development would also be visually intrusive as the topography of the area rises to the south and the scarp edge of Chadwell Escarpment Urban Fringe LCA.

Sensitivity to substantial-scale urban developments – **Moderate**
Development of this scale could potentially be mitigated.

Sensitivity to small-scale urban developments – **Low**
A small urban extension would not represent degradation of this character area which is strongly influenced by adjacent urban areas.

Key Qualities Desirable to Safeguard:

- Remnant historic field pattern in the south east.
- Historic lanes and tracks, sometimes lined with hedgerows.

Key Landscape Conditions and Options for Sustainable Development:

- Development should respect and retain the remnant historic field pattern in the southeast of the area.
- Introduction of very large-scale development into the area would change the sense of openness within the large arable fields of the character area. The essentially open, rural character of the landscape would be lost.
- There is potential that well-mitigated urban extensions at the western edge of East Tilbury could soften the current abrupt urban edge.
- There are possibilities for small to medium-scale development on the eastern edge of Chadwell St. Mary.

E1 - Aveley Urban Area

Key Characteristics

- Linear settlement contained by, and overlooking the Mardyke River Valley to the south.
- Layout of the settlement is dissected to the north and south by B1335 road corridor.
- Development within the small town is formed of a mixture of 1950's, 1960's and 1970's style housing, with some more recent housing development at the edges of the settlement.
- Limited distribution of publicly accessible greenspace within the settlement, with open space mainly consisting of school playing fields. Although not within the Urban Area, there is large area of greenspace consisting of sports fields and a golf course at Belhus Park to the north east of the settlement.

E2 – South Ockendon Urban Area

Key Characteristics

- Settlement is nucleated in the northeast around an old historic core, which focuses on St. Nicholas' church with a round flint (13th century) tower and adjacent green. Development also spreads to the south in a linear form along the B186 and main railway line.

- Settlement expanded to the west into a large 1960's/1970's suburban housing area containing a library, sports centre and two schools. A 1960's/1970's shopping precinct and flats are also located adjacent to the historic core, with some modern flats also included within the current urban fabric. There is also a large factory site, containing Ford warehouses and other large vacant factory units to the west of the Station.
- Within the large housing area, there are two significant areas of publicly accessible greenspace (Dike's Park and Bonnygate Wood). There is also access to the Mardyke River Valley to the south and Oak and Ash woods to the north east of the settlement. In comparison with Aveley Urban Area, there is a high proportion of greenspace within the settlement.

E3 – West Thurrock and Purfleet Urban Area

Key Characteristics

- West Thurrock, to the east of the Urban Area is a small linear settlement with a block-shaped form. Purfleet, is nucleated around an older settlement core (abutting the River Thames to the south) and is contained to the east by the railway line.
- Settlement layout has developed in relation to several major road and railway corridors such as A282 and A1306, which dissect the area in north south and east west directions. The older core of Purfleet, now surrounded by modern housing to the north, developed in the 18th Century around the military gunpowder magazine. West Thurrock church is isolated amongst large modern factory buildings and West Thurrock is bordered to the north by the large retail and commercial Lakeside Development.
- Around West Thurrock, a range of large commercial buildings and warehouses dominate the area. Closer to the River Thames, heavy industrial buildings associated with the Purfleet Thames Terminal (e.g. Esso) combine with the strong influence of associated utilities infrastructure.
- Other than the Lake within Lakeside retail development, there is lack of public amenity greenspace within the Urban Area. There are, however, pockets of sports fields and recreation areas at the edges of Purfleet and West Thurrock.
- The area supports a number of sites of significance for nature conservation (geological and wildlife sites), such as Purfleet Chalk Pits SSSI, West Thurrock Lagoon and Marshes SSSI, county wildlife sites and important sites for biodiversity (eg. anchor fields and St.Clements churchyard).

E4 – Grays/Chadwell St Mary Urban Area

Key Characteristics

- Grays and Chadwell St Mary are both nucleated settlements, which are divided from each other by the A1089 road corridor and settled within a network of arterial and local roads. 1970's housing.
- Settlement layout of Chadwell St Mary is concentrated on the crossroads of Brentwood Road and Linford Road, with the church as a focal point at this location. Grays spreads from the A13 corridor (in the north) to the shores of the River Thames (in the south) and contains several suburban housing areas ranging from the 1950's to modern style. There are also pockets of Victorian housing and the large new housing development at Chafford Hundred is also located to the north of the Urban Area.
- The town centre is focused around a central High Street and 1950's shopping precinct containing shops, civic offices the museum.
- There are several areas of greenspace within Grays, some of which are comprised of disused pits and workings.
- There are several areas of greenspace within Grays including Hangmans Wood and Deneholes SSSI and disused pits, (including Lion Pit SSSI, Grays Chalks Pit SSSI and the county wildlife sites Warren Gorge and Sand Martin Cliff), that support both geological and wildlife interest.

E5 – Tilbury and Docks Urban Area

Key Characteristics

- Tilbury is a nucleated settlement, which, although located in close proximity to the docks, is separated from the main waterfront industry by a main railway line.
- The docks, part of the Port of London, were built in the 1880's and contain large commercial warehouses and distinctive vertical cranes. From within the docks, there are substantial cross-river views. Housing development within Tilbury is predominantly post-war and includes some tower blocks and flat-roofed housing blocks.
- Adjacent to the docks, a large industrial and commercial area serves Tilbury and contains large warehouses and ASDA supermarket.
- There are several areas of publicly accessible greenspace within Tilbury, distributed within housing areas and to the northeast of the settlement (Karting Stadium).
- The southern boundary is adjacent to Vange and Fobbing Marshes SSSI.

E6 – Corringham/Stanford-le-Hope Urban Area

Key Characteristics

- Corringham and Stanford le-Hope have an elevated location and are physically separated by the A1014.
- The layout of Stanford le-Hope is based around two main shopping streets (Kings Street and Victoria Road), which contain a variety of local shops. Corringham has an older village core, which contains mainly weather-boarded houses and a Norman church with an extensive churchyard. There is also a modern precinct shopping centre within Corringham.
- Housing development within both settlements is comprised of a range of housing ages and styles ranging from Victorian to modern.
- There is a significant distribution of publicly accessible open greenspace surrounding the southern edges of Stanford le-Hope and Corringham also has several well-distributed areas of open greenspace.

4.0 CAPACITY OF URBAN FRINGE LANDSCAPES

4.1 General

4.1.1 This chapter sets out an assessment of the indicative capacity of the landscapes immediately surrounding the main urban area within Thurrock to accommodate urban expansion. The assessment considers the capacity of all undeveloped urban fringe landscapes to accommodate urban development. Land allocated for proposed housing development and land safeguarded for transport infrastructure is considered to be undeveloped land for the purposes of the capacity assessment.

4.2 Definition of Urban Fringe Landscapes

4.2.1 The urban fringe Landscape Character Type and Areas within Thurrock are defined in Sections 3.4 and 3.5, and are shown on Figure 2.6. For the purposes of this evaluation, 'Urban Fringe Areas' have been identified:

- Aveley (Urban Fringe Area 1)
- South Ockendon and North Stifford (Urban Fringe Area 2)
- North and East of Grays (Urban Fringe Area 3)
- Chadwell St Mary and Tilbury (Urban Fringe Area 4)

4.3 Areas of Search for Potential Urban Fringe Expansion

4.3.1 The area of search for potential urban expansion focuses on areas of undeveloped land within one kilometre of the urban fringe.

4.3.2 The location of each area of search is shown in Figure 4.1.

4.4 Evaluation Methodology

4.4.1 Each urban fringe area has been evaluated at a scale of 1:10,000 in terms of

- ***major environmental constraints to development***
- potential for ***urban expansion*** taking into account:
  * *features desirable to safeguard*
  * *opportunities for enhancement/creation of new green infrastructure*
  * *indicative landscape capacity to accommodate development*

4.4.2 Indicative landscape capacity for development for each urban expansion opportunity has been calculated based on a housing density of 30 to 70 dwellings per hectare and 10% open space provision (based on Thurrock Unitary Development Plan, Deposit Draft 2003-para 3.4.4/6.4.23), plus an indicative area set aside for the provision of new and retention/enhancement of green infrastructure in the locality. Green infrastructure includes features such as linear parks, river valleys. Woodlands, ponds and hedgerows.

4.4.3 For the purposes of this Study, the indicative landscape capacity for housing development is expressed as follows:

Indicative Landscape Capacity	***Indicative Development Size/No. of Dwellings***
High	1,000 – 1,500
Moderate	400 – 999
Low	150 – 399
Limited	0 - 149

4.4.4 For each urban fringe area the Indicative Landscape Capacity to Accommodate Development is listed and numbered below. The numbers refer to the locations shown on the corresponding Figure for each urban fringe area.

4.4.5 Estimates of the Indicative Capacity for urban fringe landscapes to accommodate development do not take into account the potential constraints of buried archaeology and upstanding archaeological monuments that are not protected by legislation. Section 6.3, Recommendations for Further Work describes how the Historic Environment Record (HER) for Thurrock might be used to inform future development.

4.5 Urban Fringe Area 1

Major Environmental Constraints to Development

4.5.1 Urban Fringe Area 1 is bounded to the east by the M25, to the south by the A13 and to the west by the Borough boundary.

4.5.2 Figure 4.2 shows the environmental and historic/archaeological designations within the search area. Environmental designations include:

- Purfleet Road, Aveley SSSI
- County Wildlife Sites
- Areas of Local Nature Conservation Significance
- Country Park
- Local Historic Landscape
- Tree Preservation Orders
- Scheduled Ancient Monument
- Listed Buildings

Potential for Settlement Expansion

4.5.3 North east Aveley (land west of the M25 and north of High Street and Stifford Road):

Features desirable to safeguard

- The existing soft urban edge to Aveley to the south of the Aveley By-pass.
- Existing hedge pattern and woodland edge to Belhus Park.
- The existing hedge pattern to the west of the M25.
- Belhus Chase, a 55.5 ha site to the north of Aveley owned by the Woodland Trust.
- Kennington Park.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Create new woodland to the north of Aveley By-Pass to link in with the existing linear woodland forming the southern edge to Belhus Park.
- Create woodland to the north of the roundabout that connects Aveley By-Pass with Stifford Road.
- Plant new hedges along the existing field boundaries to the east of Aveley FC Stadium.
- Create new woodland on the south side of Aveley By-Pass where it emerges from the eastern edge of Aveley.

Indicative Landscape Capacity to Accommodate Development

- **1**: Land south of Aveley By-Pass: **Limited - Low**

4.5.4 South east Aveley (land south of Stifford Road and east of Ship Lane):

Features desirable to safeguard

- The existing soft urban edge to the south of Stifford Road.
- Existing vegetation adjacent to Aveley Hall Farm and the School Grounds.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Enhance the environment adjacent to Junction 30 of the M25 by new planting to create a buffer between Aveley and the motorway.
- Potential to create a waterbody adjacent to Junction 30.
- Strengthen the existing hedgerow pattern within this area.

Indicative Landscape Capacity to Accommodate Development

- **2**: Land south of Stifford Road: **Limited**

4.5.5 South west Aveley (land south of Purfleet Road and Hall Road and west of Ship Lane):

Features desirable to safeguard

- Allotment Gardens to the south of Hall Road.
- Views south to important landmarks such as the Dartford Crossing and Power Station.
- Woodland to the south of Purfleet Road.
- The soft urban edge to the south of Purfleet Road and to the west of Love Lane.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Create new hedgerows to the south of Hall Road and supplement existing hedges with new planting where sufficient vegetation exists within them.
- Plant trees within the new and existing hedges.
- Opportunity to create new parkland landscape to the west of Love Lane that connects with the Mar Dyke River Valley via an existing footbridge.

Indicative Landscape Capacity to Accommodate Development

- **3**: Land south of Hall Road: **Low**
- **4**: Land south of Purfleet Road and west of Love Lane: **Low**

4.5.6 North west Aveley (land north of Purfleet Road and west of Romford Road):

Features desirable to safeguard

- Woodland to the north of Purfleet Road.
- Woodland to west of Rowan Grove.
- Ponds and drainage features between Purfleet Road and Sandy Lane.
- Kennington Park.
- The scattered settlement pattern of moated properties and isolated dwellings to the west of Romford Road.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Opportunity to create new wetland feature to the south of Sandy Lane.
- Enhance landscape to the south of the roundabout at Sandy Lane with new woodland planting to link with the existing trees that form an integral part of the townscape at Rowan Grove.
- Opportunity to create area of informal parkland within the east side of the disused workings to the south of Sandy Lane.
- Enhance the northern gateway to Aveley via Romford Road by the creation of a small area of parkland landscape with a low tree planting density.
- Strengthen the existing hedgerows to the west of Romford Road.

Indicative Landscape Capacity to Accommodate Development

- **5**: Land south of Sandy Lane: **Low to Moderate**
- **6**: Land north of Kennington Park: **Low to Moderate**

Summary of Landscape Capacity

4.5.7 The main options for settlement expansion are situated in Aveley's south western fringes where the landscape character consists predominantly of paddocks, playing fields and encapsulated urban fringe farmland. Disused workings present possibilities for both development and landscape enhancement whilst former land fill sites restrict the capacity of the landscape to accommodate development but invite opportunities to create new landscapes. Enhancement opportunities would strengthen existing recreation and nature conservation initiatives such as Kennington Park and Belhus Chase to create a multifunctional landscape providing a high quality setting around Aveley.

4.6 Urban Fringe Area 2

Major Environmental Constraints to Development

4.6.1 Urban Fringe Area 2 is bounded to the west by the M25, to the south by the A13 and to the east by the Mar Dyke river Valley. The capacity of the landscape to accommodate development within one kilometre of South Ockendon railway station is evaluated in section 5.7; this area is therefore excluded from the area of search for Urban Fringe Area 2.

4.6.2 Figure 4.3 shows the environmental and historic/archaeological designations within the search area. Environmental designations include:

- Ancient Woodland
- County Wildlife Site
- Local Historic Landscape
- Area of Local Nature Conservation Significance
- Listed Buildings
- Tree Preservation Order

4.6.3 Within the south and west of the area of search environmental constraints are greatest. In the south the Mar Dyke River Valley County Wildlife Site and extensive areas of ancient woodland reduce the capacity of the landscape to accommodate urban development. However these existing assets present opportunities for enhancement if managed appropriately.

4.6.4 Within the west of the area adjacent to the M25, the Belhus Park Local Historic Landscape designation covers most of the land between the western edge of South Ockendon and the motorway. An Ancient Woodland and County Wildlife Site is located to the west of Hamble Lane. These existing assets reduce the capacity of the landscape to accommodate urban development. However, they also present opportunities for enhancement to South Ockendon's western fringe.

4.6.5 The environmental designations within the south and west fringes of South Ockendon substantially reduce the capacity of the landscape to accommodate development. As a result, only the eastern fringes of South Ockendon have been subject to further evaluation below.

Potential for Settlement Expansion

4.6.6 East South Ockendon (land east of the railway line and east of South Road):

Features desirable to safeguard

- Existing ponds to the east of South Road.
- Existing hedge vegetation adjacent to South Road to the north of the Garden Centre.
- Existing hedge leading south from Mollands Lane to Buckles Lane.
- Little Palmers Shaw and Great Palmers Shaw County Wildlife Sites that connect with Hill Cottages via a drainage ditch and associated vegetation.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Open up views to the east from South Road.
- Strengthen the existing hedge network particularly the hedge that follows a footpath (not a Public Right of Way (PROW)) between Mollands Lane and Buckles Lane.
- Enhance vegetation adjacent to the drainage ditch connecting Little Palmer's Shaw with Hill Farm Cottages.
- Create new hedgerow adjacent to the PROW between the drainage ditch and the track leading east from Hill Farm.
- Enhance the South Road corridor by planting street trees on the eastern side of the road.

Indicative Landscape Capacity to Accommodate Development

- **1**: Land north of Buckles Lane: **Low**
- **2**: Land south of Buckles Lane: **Low - Moderate**

Summary of Landscape Capacity

4.6.7 The landscape within a one kilometre radius of the railway station is the subject of evaluation in section 5.7. Outside of this area, the main options for settlement expansion are situated in South Ockendon's eastern fringes. The southern and eastern fringes of South Ockendon are covered extensively by nature conservation designations, which presents both constraints to development and opportunities for enhancement through appropriate management.

4.6.8 Within South Ockendon's eastern fringes there is a mixture of land uses including a garden centre, travelling showpeoples' site, disused workings, a driving range and nature conservation sites. The existing urban edge is poorly defined as a result of this mosaic of contrasting land uses. There is an opportunity to define South Ockendon's eastern urban edge by providing a strong landscape framework within which development could be situated.

4.7 Urban Fringe Area 3

Major Environmental Constraints to Development

4.7.1 Urban Fringe Area 3 is bounded to the north by the A13 and to the east by the A1089(T). Land use south of the A1013 and west of the A1089(T) is used predominantly for education sites including Thurrock College and Palmer's College. This land is therefore excluded from this analysis which has concentrated on the landscape between the northern fringes of Grays and the A13.

4.7.2 Figure 4.4 shows the environmental and historic/archaeological designations within the search area. Environmental designations include:

- Scheduled Ancient Monument
- Listed Buildings
- Area of Local Nature Conservation Significance

4.7.3 To the south of Stifford Clays Road, an extensive area of cropmarks are Scheduled to the north and south of the A13. The A13 route corridor and an extensive area of level land south of the Baker Street interchange are designated as an Area of Local Nature Conservation Significance (ALNCS).

Potential for Settlement Expansion

4.7.4 North Grays (land north of Stifford Clays Road):

Features desirable to safeguard

- The existing hedge adjacent to Stifford Clays Road that provides a green urban edge to the north of Grays and screens the A13 within views from properties on the south side of Stifford Clays Road.

- The ALNCS within the verges of the A13 route corridor.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Opportunity to enhance the existing ALNCS beside the A13 by the addition of new planting and creation of a diverse range of habitats.
- Strengthen the existing hedge on the north side of Stifford Clays Road.

Indicative Landscape Capacity to Accommodate Development

- **1**: Land between the A13 and Stifford Clays Road: **Limited - Low**

4.7.5 North east Grays (land south of the A13 and west of the A1089(T)):

Features desirable to safeguard

- The Scheduled Ancient Monument (SAM) to the south of the A13.
- The ALNCS within the verges of the A13 route corridor and on the level land to the south of the junction with the A1089(T).
- Existing hedgerows to the north of Stanford Road that provide structure within the otherwise level prairie field landscape.
- Vegetation within the soft urban edge in the east of Grays.
- Retain the open, agricultural landscape to the north and south of Long Lane and west of the A1089(T) which would provide the setting to a potential urban expansion.
- Preserve the agricultural setting of listed buildings within Grey Goose Farm and Little Wellhouse Farm.

Opportunities for Enhancement/Creation of New Green Infrastructure

- The existing hedgerows should be strengthened with new planting including tree planting within the existing field boundaries.
- Opportunity to create new parkland adjacent to the existing ALNCS.
- Create a wildlife wedge that links the existing ALNCS with new parkland and would create an informal edge to potential settlement expansion.

Indicative Landscape Capacity to Accommodate Development

- **2**: Land south of the A13 and north of Long Lane: **Low - Moderate**
- **3**: Land south of Long lane: **Limited - Low**

Summary of Landscape Capacity

4.7.6 Landscape capacity within this area is restricted in the east by existing land uses associated with educational institutions. Within the north of the area to the south of the A13 capacity is restricted by the presence of an extensive SAM and by the ALNCS that extends south from the A13 route corridor.

4.7.7 The large area of encapsulated urban fringe farmland landscape in the north east of the area presents an opportunity for urban expansion. Landscape character is currently strongly influenced by urban land use and transport infrastructure. Existing landscape features such as hedgerows could be strengthened. New areas of parkland and green corridors could be created to link with existing local nature conservation designations whilst providing the setting to new development and buffering those existing features of value.

4.8 Urban Fringe Area 4

Major Environmental Constraints to Development

4.8.1 Urban Fringe Area 4 is bounded to the west by the A1089(T), to the south by the settlement of Tilbury and to the east by High House Lane. Within the area of search there are some important environmental conservation designations that limit the capacity of the landscape to accommodate development. However, the proportion of the total area covered by these designations is relatively small.

4.8.2 The environmental designations within the study area include:

- Area of Local Nature Conservation Significance
- County Wildlife Site
- Conservation Area
- Listed Buildings

4.8.3 To the south of Chadwell St Mary, the Chadwell Escarpment is a distinctive strategic feature within the Thurrock landscape. It makes a significant contribution to both the setting of Chadwell St Mary and

accentuates the level and open character of the marsh landscape to the south. It is considered that the capacity of the Chadwell Escarpment landscape to accommodate development is severely restricted.

4.8.4 The southern part of the search area lies within the designated Flood Zone. Whilst the existence of the flood zone does not necessarily preclude development, the risks of developing within such areas is a key consideration that can reduce the scope for development.

Potential for Settlement Expansion

4.8.5 North Chadwell (land north of Chadwell St Mary):

Features desirable to safeguard

- Preserve the semi rural setting of the hamlet of Orsett Heath.
- Retain Hornsby Lane – a winding and narrow lane connecting Orsett Heath with Orsett via an underpass beneath the A13.
- Old House Wood in the north east of Chadwell St Mary is designated as an ALNCS. It is an important local amenity that should be retained.
- Preserve the existing network of PROWs as these provide important pedestrian links to other settlements and to countryside to the north of the A13.
- Retain a substantial rural buffer to the north of Chadwell St Mary to provide the setting to development and to preserve the varied topography within the landscape to the south of the A13.
- Safeguard the scattered settlement pattern between the A13 and Chadwell St Mary.
- Retain the existing enclosure pattern to the south of Stanford Road.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Opportunity to enhance the Old House Wood ALNCS by additional planting to increase the size of the woodland.
- Strengthen the existing hedge that runs north from Old House Wood along a footpath (not a designated PROW) to Murrells Cottages.
- Create a green link connecting Hornsby Lane with the north of Chadwell St Mary.

Indicative Landscape Capacity to Accommodate Development

- **1**: Land south of Hornsby Lane: **Moderate - High**
- **2**: Land west of Brentwood Road: **Low - Moderate**

4.8.6 East Chadwell (land north of Chadwell St Mary):

Features desirable to safeguard

- Existing green space on the edge of Chadwell St Mary to the south of Wickham Road.
- Retain the rural character of High House Lane.
- Retain open countryside to the east of Brentwood Road to the south of the County Wildlife Site.
- Preserve the existing PROWs that connects Old House Wood with High House Lane.
- Retain a countryside buffer to the west of High House Lane.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Opportunity to enhance the harsh edge to the new development on the eastern edge of Chadwell St Mary.
- Opportunity to enhance the existing area of open space south of Wickham road and extend it to create a green wedge providing the settlement to potential development.

Indicative Landscape Capacity to Accommodate Development

- **3**: Land west of High House Lane: **Moderate**

4.8.7 Tilbury (Tilbury Marshes and land around Tilbury west of Fort Road):

Features desirable to safeguard

- Preserve the open windswept character of the landscape between Marshfoot Road and Tilbury and between Biggin Lane and Tilbury.
- Preserve the woodland at Fort Road Common.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Opportunity to link existing open space in the west of Tilbury with Tilbury Marshes through the creation of new open space and footpaths.
- Opportunity to enhance the A1089(T) route corridor through planting of woodland.
- Opportunity to enhance the A126 route corridor through planting of woodland.

Indicative Landscape Capacity to Accommodate Development

- **4**: Land east of Dock Road: **Moderate - High**

Summary of Landscape Capacity

4.8.8 Landscape capacity within this area is restricted in the south by the Chadwell Escarpment and by the need to retain the essentially open and windswept character of the marsh landscapes to the north of Tilbury.

4.8.9 The large area of encapsulated urban fringe farmland landscape in the north of the area presents an opportunity for urban expansion. Although not currently strongly influenced by urban land use and transport infrastructure, the landscape in this area exhibits an absence of diverse features. Existing landscape features such as hedgerows could be strengthened. New areas of parkland and green corridors could be created to link with existing local nature conservation designations whilst providing the setting to new development and buffering those existing features of value.

5.0 CAPACITY OF SELECTED SETTLEMENT EDGE LANDSCAPES

5.1 General

5.1.1 This chapter sets out an assessment of the indicative capacity of selected settlement edge landscapes to accommodate urban expansions. The assessment considers the capacity of all undeveloped settlement edge landscapes to accommodate urban development. Land allocated for proposed housing development and land safeguarded for transport infrastructure is considered to be undeveloped land for the purposes of the capacity assessment.

5.2 Selection of Settlements

5.2.1 The following four settlements were selected for assessment:

- Stanford-le-Hope
- East Tilbury
- South Ockendon
- West Horndon

5.2.2 These settlements are considered to offer potentially sustainable options for growth due to their location in public transport corridors with existing railway stations, thus providing an available transport interchange to facilitate access to jobs, shops and services by modes other than the car.

5.3 Area of Search for Potential Settlement Edge Expansion

5.3.1 The area of search for potential settlement expansion focuses on areas of undeveloped land within a one kilometre radius of a settlement's railway station. This distance is considered to be an acceptable walking distance for commuters. The capacity of the landscape to accommodate urban development within one kilometre radius of each railway station has been evaluated.

5.3.2 The location of each area of search is shown on Figure 4.1.

5.4 Evaluation Methodology

5.4.1 Each settlement edge landscape has been evaluated at a scale of 1:10,000 in terms of:

- ***major environmental constraints to development***
- potential for ***settlement expansion*** taking into account:
  * *features desirable to safeguard*
  * *opportunities for enhancement/creation of new green infrastructure*
  * *indicative landscape capacity to accommodate development*

5.4.2 The indicative landscape capacity for development for each settlement expansion opportunity has been calculated based on a housing density of 30 to 70 dwellings per hectare and 10% open space provision (based on Thurrock Unitary Development Plan, Deposit Draft 2003 paras 3.4.4/6.4.23), plus an indicative area set aside for the provision of new and retention/enhancement of existing green infrastructure in the locality. Green infrastructure includes features such as linear parks, river valleys, woodlands, ponds and hedgerows.

5.4.3 For the purposes of this Study, the indicative landscape capacity for housing development is expressed as follows:

Indicative Landscape Capacity	Indicative Development Size/ No. of Dwellings
High	1,000 – 1,500
Moderate	400 – 999
Low	150 – 399
Limited	0 - 149

5.4.4 For each settlement edge landscape the Indicative Landscape Capacity to Accommodate Development is listed and numbered below. The numbers refer to the locations shown on the corresponding Figure for each settlement edge landscape.

5.4.5 Estimates of the Indicative Capacity for settlement edge landscapes to accommodate development do not take into account the potential constraints of buried archaeology and upstanding archaeological monuments that are not protected by legislation. Section 6.3, Recommendations for Further Work describes how the Historic Environment Record (HER) for Thurrock might be used to inform future development.

5.5 Stanford-le-Hope Settlement Edge Landscapes

Major Environmental Constraints to Development

5.5.1 Figure 5.1 shows the environmental and historic/archaeological designations within the search area. The south-east quadrant of the search area has a high concentration of environmental designations. These include:

- The Essex Coast ESA
- County Wildlife Sites
- Areas of Local Nature Conservation Significance
- Coastal Protection Belt
- Green Chain
- Listed Buildings

5.5.2 The south-east quadrant is considered unsuitable for development due to the number of nature conservation designations.

Potential for Settlement Expansion

5.5.3 South-west Quadrant (land south of the A13 and west of Butts Lane):

Features desirable to safeguard

- Hedges and vegetation adjacent to the railway and Butts Lane.
- Vegetation forming the soft urban edge to the west of Butts Lane adjacent to the Golf Course.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Between the railway line and Butts Lane, tree planting would provide new structure to development.
- Land south of Oxford Road and west of Butts Lane could be enhanced through structure planting.

Indicative Landscape Capacity to Accommodate Development

- **1**: Land East of Butts Lane: **Low - Moderate**
- **2**: Land West of Butts Lane and south of Oxford Road: **Low - Moderate**

5.5.4 North-west Quadrant (land west of the A13 and west of the railway line):

Features desirable to safeguard

- The existing pattern of hedges to the east of Horndon Road.
- The predominantly dispersed and small-scale rural settlement pattern.
- Sense of separation from large scale urban development.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Strengthening the existing hedgerow network to the east of Horndon Road.
- Potential to create riparian habitat along an existing watercourse.
- Enhance the environment to the south of the roundabout on the A13.

Indicative Landscape Capacity to Accommodate Development

- **3**: Land East of Horndon Road: **Limited - Low**
- **4**: Land West south of the A13 roundabout: **Limited - Low**

Summary of Landscape Capacity

5.5.5 Landscape capacity to accommodate urban development is restricted to the south east of Stanford-le-Hope by a number of environmental and nature conservation designations. Capacity is further restricted to the north west of the settlement where it would be desirable to safeguard the setting of Horndon on the Hill and the sparsely populated rural character of landscape to the north of the A13.

5.5.6 The main options for settlement expansion are situated west of the railway line where there are pockets of undeveloped land on the fringes of the existing settlement and a strong existing landscape character that could be further strengthened or enhanced.

5.6 East Tilbury Settlement Edge Landscapes

Major Environmental Constraints to Development

5.6.1 Figure 5.2 shows the environmental and historic/archaeological designations within the search area. The entire search area east of the railway line is designated in Thurrock UDP as Coastal Protection Zone.

The Bata Conservation Area also lies to the east of the railway and covers over 50% of the urban area of East Tilbury.

5.6.2 The environmental designations that constrain development east of the railway line are:

- Coastal Protection Zone
- Conservation Area
- County Wildlife Site

Potential for Settlement Expansion

5.6.3 South-west Quadrant:

Features desirable to safeguard

- Open space within the existing settlement of Linford.
- The low rise profile of the existing settlement the west of the railway line.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Soften the western edge of Linford by the creation of new woodland.
- Enhance and utilise the existing open space near the railway line at the end of Beechcroft Avenue to form the gateway to a green wedge and the network of footpaths to the west.
- Strengthen existing hedgerows along Low Street Lane leading to the village of Low Street.
- Create linear belts of woodland within the open landscape to the west of Linford and East Tilbury.
- Create new woodland to the west of the railway line opposite Bata Conservation Area.
- Enhance movement of people and manage access to the Thames Estuary from this quadrant.
- Despite the environmental constraints to the east of the railway line there is an opportunity to create high quality parkland, with extensive tree cover, between the Bata Conservation Area and the railway line.

Indicative Landscape Capacity to Accommodate Development

- **1**: Land west of the railway line: **Low - Moderate**
- **2**: Land south of Muckingford Road: **Low**

5.6.4 North-west Quadrant:

Features desirable to safeguard

- Recreation ground between Linford and East Tilbury.
- Soft urban edge to the west of Linford.
- Allotment gardens on the western edge of linford.
- Woodland adjacent to the Durox Works and hedges to the south.
- The Local Historic Landscape to the east of Linford.
- The wedge of farmland between the eastern edge of Linford and the railway line.

Opportunities for Enhancement/Creation of New Green Infrastructure

- The recreation ground could be expanded to form a linear park extending westwards.
- Creation of new footpath to connect the extended recreation ground with PROWs to the south and west.
- Creation of new hedge between the recreation ground and Gobions Lake County Wildlife Site.
- Creation of a wetland feature within a new green wedge to the north of Muckingford Road.
- Creation of new hedges linking to the existing strong hedge network in the north of the quadrant and with a new green wedge to the south.
- Increase the extent of allotments to the west of Linford.

Indicative Landscape Capacity to Accommodate Development

- **3**: Land north of Muckingford Road: **Limited - Low**
- **4**: Land south of allotments and Lower Crescent: **Low**
- **5**: Land south of the Durox Site and west of Somerset Road, Linford: **Limited - Low**

Summary of Landscape Capacity

5.6.5 Landscape capacity is restricted within the search area by the coastal protection zone nature conservation designation and by the need to safeguard the setting of Bata Conservation Area.

5.6.6 The main options are situated west of the railway line where there are opportunities to create new landscapes that complement the existing structure of woodland clumps and strengthen the existing hedgerow pattern that has become depleted as a result of intensive farming. There are opportunities to create new wetland areas within a new landscape and development framework.

5.7 South Ockendon Settlement Edge Landscapes

Major Environmental Constraints to Development

5.7.1 Figure 5.3 shows that there are very few environmental constraints within the South Ockendon search area. The area contains several listed buildings but no sites designated for nature conservation. The Thames Chase Community Forest covers the entire search area and the wider study area. In the context of this capacity evaluation the Thames Chase Community Forest is considered to be an opportunity rather than a constraint.

Potential for Settlement Expansion

5.7.2 North-east Quadrant (land to the east of the railway and north of Brandon Grove development):

Features desirable to safeguard

- Existing hedgerows and vegetation adjacent to the historic core of South Ockendon.
- The essentially open character to the north and east of South Ockendon's historic core.
- The soft urban edge to the north of Cheelson Road.
- The hedgerows and rural countryside to the north of Cheelson Road.
- The rural outlook consisting of hedges and fields to the west of Cheelson Road and Wilsman Road.
- Existing hedgerows to the east of the railway and to the north of the allotment gardens off West Road.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Strengthen the existing hedgerow pattern throughout the quadrant and increase the total length of hedgerow.
- Create new informal public open space containing meadows and tree planting to the west of Cheelson Road and Wilsman Road.
- Create a new water feature and woodland planting to the north west of the existing settlement.
- Plant new woodland adjacent to the railway to the north of the settlement to create a gateway to the settlement.
- Create a new footpath connecting the historic core of South Ockendon with countryside to the north.

Indicative Landscape Capacity to Accommodate Development

- **1**: Land south of Hall Lane: **Limited - Low**
- **2**: Land north of West Road: **Limited - Low**
- **3**: Land east of the railway line: **Low- Moderate**

5.7.3 South-east Quadrant:

Features desirable to safeguard

- Allotment gardens to the south of Mollands Lane.
- Hedgerow adjacent to Mollands Lane and South Road in the south of the quadrant.
- The existing configuration of open space within the Brandon Grove development.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Strengthen and extend existing hedgerows to connect with water bodies to the east of the Garden Centre on South Road.
- Soften the urban edge to the east of the allotments and create new areas of parkland that link with water bodies to the east.

Indicative Landscape Capacity to Accommodate Development

- **4**: Land to the east of South Road and north of the Garden Centre: **Low**

5.7.4 South-west Quadrant:

Features desirable to safeguard

- Water body and associated woodland to the east of the M25.
- Views westwards from the edge of the existing settlement along Eskley Gardens.
- The soft urban edge adjacent to Avontar Road.
- Woodland Belt to the north of Hamble Lane.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Strengthen existing hedgerows to enhance connectivity between the pond, woodland and the ancient woodland adjacent to Hamble Lane.
- Expansion of woodland adjacent to the existing pond to the east of the M25.
- Creation of meadows and community woodland to the south of the existing pond.

- Creation of new parkland to the north of the school ground on Erriff Drive to complement the existing pond whilst retaining the sense of openness experienced from the western edge of the settlement.
- Creation of a new footpath linking the ponds to the urban area and connecting with the footpaths that link with West Road.
- Creation of a linear woodland immediately to the west of Arisdale Avenue to break up the harsh outline of the urban edge.

Indicative Landscape Capacity to Accommodate Development

- **5**: Land to the west of Arisdale Avenue and south of West Road: **Low**

5.7.5 North west Quadrant (land north and west of West Road):

Features desirable to safeguard

- The existing pattern of hedgerows.
- The narrow winding lane of West Road.
- Footpaths linking with West Road.
- Views into countryside to the north from West Road.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Creation of a new linear woodland alongside the railway to the north of West Road. This would buffer the railway and strengthen the ALNCS.
- Creation of new woodland to the north of the track leading to Field House to tie in with existing hedges and the woodland and pond to east adjacent to the railway line.
- Strengthen hedgerows and create new woodland and linear parkland to the east of Dennis Road.

Indicative Landscape Capacity to Accommodate Development

- **6**: Land to the west of the railway line and north of West Road: **Low - Moderate**
- **7**: Land west of West Road and east of the M25: **Low**

Summary of Landscape Capacity

5.7.6 In the east of the search area there are limited possibilities for settlement expansion as it would be desirable to maintain the existing open and rural character of landscape to the east of the settlement.

5.7.7 The main options are situated west of the railway where there is considerable potential to enhance the existing diversity of features inherent in the landscape and to strengthen existing ecological designations and features. There are opportunities to create new landscapes without compromising the landscape character of the area. New landscapes would enhance the local environment for existing and potential residents of South Ockendon. Other opportunities exist immediately to the east of the railway line where again new multifunctional landscapes could be created.

5.8 West Horndon Settlement Edge Landscapes

Major Environmental Constraints to Development

5.8.1 Figure 5.4 shows that there are few major environmental constraints within the West Horndon search area. The Thames Chase Community Forest covers the entire search area and a large proportion of the wider study area. In the context of this capacity evaluation the Thames Chase Community Forest is considered to be an opportunity rather than a constraint. The search area is also covered by the Landscape Improvement policy within Brentwood District Council's Replacement Local Plan 2003 which seeks to encourage improvements to the landscape within the area defined on the proposals map.

Potential for Settlement Expansion

5.8.2 North east Quadrant (land within Brentwood District Council):

Features desirable to safeguard

- The two County Wildlife Sites to the east of Thorndon Road.
- The soft urban edge to the east of Thorndon Road.
- The setting to Thorndon Park a Grade II* Historic Park and Garden.
- The existing hedgerow pattern and vegetation adjacent to the railway to west of Tilbury Road.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Strengthen existing hedgerows to the east of Thorndon Road and plant hedge trees within them.

- Create new hedges running east-west that connect across the predominantly north-south alignment of existing hedges.
- Create grassland habitat in the vicinity of Round Shaw (a County Wildlife Site) to the east of West Horndon Road.
- Create parkland landscape to the south of Woodside Farm.

Indicative Landscape Capacity to Accommodate Development

- **1**: Land to the north of Cadogan Avenue: **Limited**
- **2**: Land south and north of Station Road: **Low – Moderate**

5.8.3 South east Quadrant:

Features desirable to safeguard

- The sparse settlement and lack of roads that give the south east quadrant its essentially rural character.
- The existing pattern of hedgerows and shaws.
- The network of footpaths leading south of the railway line.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Strengthen the existing hedgerows by planting within the gaps and by planting trees within the hedges.
- Opportunity to create new wetland features that serve as both habitats and retention ponds utilising the existing drainage pattern.
- Create a new linear park adjacent to the railway line.
- Retain a green wedge running north-south on the western edge of the quadrant.
- Create new a woodland shaw adjacent to the eastern most footpath in the quadrant.

Indicative Landscape Capacity to Accommodate Development

- **3**: Land to the south of the railway line: **Moderate - High**

5.8.4 South west Quadrant:

Features desirable to safeguard

- The sparse settlement and lack of roads that give the south east quadrant its essentially rural character.
- The existing pattern of hedgerows and shaws.
- The network of footpaths leading south of the railway line.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Strengthen the existing hedgerows by planting within the gaps and by planting trees within the hedges.
- Create a new linear park adjacent to the railway line.
- Retain a green wedge running north-south on the eastern edge of the quadrant.
- Create woodland to the east of Dunnings Lane.

Indicative Landscape Capacity to Accommodate Development

- **4**: Land to the south of the railway line: **Low - Moderate**

5.8.5 North west Quadrant (land within Brentwood District Council):

Features desirable to safeguard

- The soft urban edge to the west of Thorndon Road.
- The existing pattern of hedgerows.
- Public open space within the south of the quadrant.

Opportunities for Enhancement/Creation of New Green Infrastructure

- Strengthen the existing hedgerows and plant new hedgerows to fill gaps in existing.
- Create new public open space adjoining existing open space in the south of the quadrant.
- Enhance the character of Childerditch Lane by planting on the eastern side of the road.
- Create a green wedge or informal parkland to the east of Nuttys Farm.

Indicative Landscape Capacity to Accommodate Development

- **5**: Land to the east of Childerditch Lane: **Moderate - High**

Summary of Landscape Capacity

5.8.6 Within the two southern quadrants the strong rural character should be retained. There is potential to accommodate settlement expansion within the open and rural landscape south of the railway line at West Horndon. An important strategic feature within the landscape framework should be the retention of a broad belt of countryside within the south of the search area. The need for this feature limits the capacity of the landscape to the south of the railway line.

5.8.7 To the north west of the railway line the existing landscape character consists of predominantly open prairie fields with deteriorating, gappy hedgerows. Expansion in this area could be accommodated if the character of the existing intensively farmed landscape were improved or enhanced by the provision of a strong landscape framework.

5.8.8 Enhancement opportunities within the area of search could be based on the east west/north south pattern of land division of ancient origins. Enhancement and restoration of this pattern could be integrated within new development.

6.0 SUMMARY AND CONCLUSIONS

6.1 Summary

Study Aims and Approach

6.1.1 Chris Blandford Associates (CBA) was commissioned in September 2004 by Thurrock Council to assess the capacity of Thurrock's landscapes to accommodate development. The Study is intended to inform the preparation of:

- the Council's new Local Development Documents;
- the strategies and implementation plans of the Thurrock Urban Development Corporation; and
- the Council's input to the preparation of the new Regional Spatial Strategy for the East of England (RSS14).

6.1.2 The main purpose of the Study is as a planning tool for assisting strategic decision-making in relation to development and environmental protection and should be used in conjunction with other studies commissioned by the Council including assessments of Urban Capacity, Infrastructure, Flood Risk Assessment and Open Space. The development options assessed in this study do not represent a formal Thurrock Council endorsement of the need to release any areas from the Green Belt for development purposes nor does this study override current Green Belt policy or in itself support any requirement for the review of boundaries. A review of the Green Belt in Thurrock will be addressed in a separate study. The review of Green Belt land in relation to future growth requirements will also be addressed by a separate study. Landscape character is one of the key influences on the potential location, scale and form of future development.

6.1.3 The assessment set out in this report identifies the 'indicative' capacity of Thurrock's landscapes for development, taking into consideration opportunities for green infrastructure provision; no assessment of the landscape impacts of specific development proposals has been undertaken as part of this study.

6.1.4 The Council's planning policies set out in its Unitary Development Plan seek a balance between making provision for new development in the Borough, whilst ensuring adequate protection and enhancement of both the built and natural environment. A key aim for the Council is to develop a 'character-based approach' to the protection, enhancement and restoration of the Borough. A character-based approach to sustainable landscape planning is about accommodating change in ways that are responsive to the opportunities, constraints and conditions posed by the specific characteristics that contribute to an area's 'sense of place'. In this context, the Council promotes the following key principles in relation to the conservation and enhancement of landscape character. The Council wants to see new development:

- respect its landscape setting;
- protect and maintain existing features and elements that contribute to the distinctiveness of the local landscape;
- make a positive contribution to the character of the local landscape area.

6.1.5 This approach is reflected in this Study, which uses landscape character assessment techniques to understand the existing character of Thurrock's Landscapes and their sensitivity as the basis for evaluating the ability or 'capacity' of different places to accommodate strategic development needs in ways that reflect these principles.

6.1.6 The overall approach to the Landscape Capacity Study was developed in line with current best practice set out in *Landscape Character Assessment – Guidance for England and Scotland* (2002) and relevant supplementary topic papers, published jointly by the Countryside Agency and Scottish Natural Heritage.

6.1.7 In summary, the study process involved three key stages of assessment:

Stage 1 – Understanding the Shape of Thurrock's Landscape (Chapter 2.0)

6.1.8 The first stage involved an analysis of the physical and historical influences that have shaped the Thurrock landscape. This was informed by sources such as the Thurrock Nature Conservation Guide. The forces for change that continue to affect landscape character today are also considered.

Stage 2 - Characterisation of Thurrock's Landscapes (Chapter 3.0)

6.1.9 The next stage involved an assessment of the existing character of Thurrock's landscapes. This process, known as 'characterisation', identifies, classifies and describes areas of different character to provide an understanding of what makes one place distinctive from another and why. In line with the Guidance, this assessment has been carried out at a scale of 1:25,000.

Stage 3 – Evaluating the Sensitivity of Thurrock's Landscape Character Areas (Chapter 3.0)

6.1.10 The third stage involved a strategic evaluation of the sensitivity of Thurrock's Landscape Character Areas to three indicative broad scales of development. The purpose of this stage is to provide a broad

overview of the variations in sensitivity of the Borough's landscapes, as context for the more detailed evaluations of landscape capacity for selected locations in the following assessment stages.

Stage 4 – Evaluating the Capacity of Urban Fringe and Selected Settlement Edge Landscapes (Chapters 4.0 and 5.0)

6.1.11 This final stage involved a detailed evaluation at a scale of 1:10,000 of the capacity of the Borough's urban fringe and selected settlement edge landscapes to development, including consideration of the acknowledged values attached to these landscapes. The purpose of this stage is to provide information on the indicative landscape capacity of these areas to support decision-making by the Council regarding the identification of sustainable locations for potential urban extension/settlement expansion.

Characterisation of Thurrock's Landscape

6.1.12 Based on an analysis of the physical and cultural influences that have shaped the landscape, and consideration of the forces for change affecting landscape character, 5 generic Landscape Character Types and 23 unique Landscape Character Areas were identified and described at a scale of 1:25,000. This new classification updated the Council's Draft Landscape Character Assessment completed in 1994, bringing it into line with the Countryside Agency's Guidance.

6.1.13 The Landscape Character Types and their constituent Landscape Character Areas identified by the assessment area:

A – Fenland Landscape
A1 – Bulphan Fenland

B – Rolling Farmland/Wooded Hills Landscape
B1 – Sticking Hill Rolling Farmland/Wooded Hills
B2 – Langdon Hills Rolling Farmland/Wooded Hills
B3 – Fobbing Ridge Rolling Farmland/Wooded Hills
B4 – Belhus Rolling Farmland/Wooded Hills

C – Marsh Landscape
C1 – Fobbing Marshes
C2 – BP Coryton and Marshes
C3 – Mucking Marshes
C4 – Mucking Flats and Marshes
C5 – Tilbury Marshes

D – Urban Fringe Landscape
D1 – Aveley/South Ockendon Urban Fringe
D2 – Mar Dyke River Valley Urban Fringe
D3 – North Stifford Corridor Urban Fringe
D4 – White Crofts/Orsett Heath Urban Fringe
D5 – Linford/Buckingham Hill Urban Fringe
D6 – Chadwell Escarpment Urban Fringe
D7 – West Tilbury Urban Fringe

E – Urban Landscape
E1 – Aveley Urban Area
E2 – South Ockendon Urban Area
E3 – West Thurrock and Purfleet Urban Area
E4 – Grays/Chadwell St Mary Urban Area
E5 – Tilbury and Docks Urban Area
E6 – Corringham/Stanford-le-Hope Urban Area

Sensitivity of Thurrock's Landscape Character Areas

6.1.14 A strategic evaluation of the relative sensitivity of each of the Landscape Character Areas to three indicative scales of urban development was undertaken using professional judgement in relation to the following key criteria:

- effects of development on physical components of the landscape;
- effects of development on how the landscape is experienced;
- the visual effects of development;
- the potential for mitigation of development impact on the landscape.

6.1.15 For each Landscape Character Area in turn, the key qualities or important characteristics that give a particular Landscape Character Area its distinctiveness and sense of place, and need to be sustained, are

highlighted. These represent the key sensitivities that are considered to be constraints (or conditions) on development.

6.1.16 The assessment not only identifies landscape constraints, but also considers opportunities for 'green' infrastructure provision and environmental enhancement in each Landscape Character Area. Where appropriate, relevant opportunities are highlighted as suggested conditions necessary for enabling potential sustainable development to be successfully accommodated within a particular location.

Capacity of Urban Fringe and Settlement Edge Landscapes

6.1.17 Within the context of the strategic sensitivity analysis work, a detailed evaluation assessed the indicative capacity of the Borough's urban fringe and selected settlement edge landscapes to support decision-making by the Council regarding identification of suitable locations for urban extension/settlement expansion development options. The areas subject to evaluation included:

Urban Fringe Areas

- Aveley
- South Ockendon and North Stifford
- North and East of Gray's
- Chadwell St Mary and Tilbury

Settlement Edge Landscapes

- Stanford-le-Hope
- East Tilbury
- South Ockendon
- West Horndon

6.1.18 The selection of settlements chosen reflects the existing main settlements in the borough and principles of sustainable development, including the sequential approach to location of development and access to key transport centres and other services.

6.1.19 Areas of search within these landscapes were evaluated at a scale of 1:10,000 to identify:

- major environmental constraints to development;
- potential settlement expansion options, taking into account:
  * features desirable to safeguard
  * opportunities for enhancement/creation of new green infrastructure
  * indicative landscape capacity to accommodate development.

6.2 Conclusions

6.2.1 The revised and updated classification of Landscape Character Types and Landscape Character Areas (Section 3.0) confirmed the relatively diverse nature of Thurrock's landscapes. This diversity is a key attribute that needs to be reflected both in development plan policies and planning guidance, and in land management practices within the Borough.

6.2.2 At the strategic scale, the Study concludes that much of the Borough's landscape is highly sensitive to most scales of urban development without substantial investment in green infrastructure provision.

6.2.3 In more detail, the Study concludes that there is scope within the urban fringe and selected settlement edge landscapes to accommodate varying scales of development without significant adverse effects on important qualities of the landscapes which are considered desirable to safeguard. Furthermore, the Study has identified a range of opportunities for the positive enhancement and creation of green infrastructure within these potential development locations, which if implemented would assist in accommodating any new development within a strong landscape framework offering new benefits for both people and wildlife.

6.2.4 National and regional strategies such as The Countryside in and Around Towns and South Essex Green Grid Strategy provide the framework within which green infrastructure enhancement opportunities could be realised.

6.2.5 This study seeks to inform the options and alternatives for development and to assist in the preparation of and sustainability appraisal of the Council's Local Development Documents.

6.3 Recommendations for Further Work

6.3.1 The following areas of further work are recommended for consideration by the Council:

- in line with the Countryside Agency's Guidance, consultation with relevant stakeholder groups should be undertaken to build consensus on the key landscape character issues to be addressed by future growth proposals;

- development of a ‘Thurrock Green Infrastructure Plan’ to set out a detailed implementation strategy to take forward proposals set out for Thurrock in the Thames Gateway South Essex Partnership Green Grid Strategic Area Framework, and also the Council’s forthcoming Open Space Strategy;

- preparation of ‘Townscape Character Appraisals’ for all urban areas within the Borough to inform and guide urban renewal proposals in relation to securing development that protects and enhances important historic and cultural assets and contributes to the provision of a high quality and well-connected public realm and urban-rural fringe landscape transition;

- for any areas of search around the urban fringe/settlement edge landscapes identified as potential locations for strategic growth, development of ‘Landscape Frameworks’ to inform the preparation of Area Action Plans as Local Development Documents;

- undertake work to link the habitat and species conservation priorities set out in the Essex Biodiversity Action Plan with opportunities for enhanced green infrastructure provision associated with future growth provision in the Borough;

- undertake work to link the forthcoming Thames Gateway Historic Environment Strategy with opportunities for enhanced green infrastructure provision associated with future growth provision in the Borough.

- Undertake a full review of the status and boundaries of the County Wildlife Sites.

- Use the Essex Historic Environment Record to inform decisions regarding the location and form of future development, and the landscape impacts of specific development proposals.