Brentwood Borough

Strategic Environmental Assessment Baseline Information Profile 2006-2007

July 2007

Prepared for
Brentwood Borough Council
by
Essex County Council

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1. INTRODUCTION

A Strategic Environmental Assessment (SEA) has been defined as,

> *'The formalised, systematic and comprehensive process of evaluating the environmental impacts of a policy, plan or programme and its alternatives, including the preparation of a written report on the findings of that evaluation, and using the findings in publicly accountable decision making.' (Therival et al, 1992)*

The European Directive on SEA (2001/42/EC) was adopted by the European Union in July 2001. It was transposed into English law in 2004 by the adoption of 'The Environmental Assessment of Plans and Programmes Regulations, 2004 (SI 2004 No. 1633 Environmental Protection)'. The SEA Directive was introduced to ensure that the environmental impacts of certain plans and programmes are recognised and assessed before plan implementation. The SEA Directive requires that all local authorities collect and maintain an environmental baseline dataset.

This report has been prepared for Brentwood Borough Council by Essex County Council. The County Council has entered into an agreement with several local authorities in Essex to collect and maintain the baseline information to meet the requirements of the SEA Directive.

The purpose of this report is to ensure that Brentwood Borough Council is in an informed position, with regard to environmental issues and policy making, in accordance with the requirements of the SEA Directive. The report presents the SEA Baseline Information Profile for Brentwood Borough Council for 2006-2007. It draws together national, regional and local data to enable assessment of the current situation within the Borough. Targets and standards at international, national and local level are also reviewed to provide the necessary context and to facilitate the focussing of resources into areas of non-compliance or significant failure. The report also examines limitations in the data collected.

Less than 20% of Brentwood Borough is considered to be built up, with the town of Brentwood displaying a well landscaped character which softens the impact of the built environment. There are a number of important green wedges which extend into the built up area. Two of these, Hartswood/Shenfield Common and the Brentwood School/former Anglia Polytechnic Playing Fields, extend into the centre of the town. Thriftwood is an extensive area of woodland set within the town. The remainder of the Borough is predominantly of agricultural use, with much of the rural area characterised by rolling landscape incorporating small woodlands, hedges and trees.

The baseline data are collated from a variety of sources, both internal and external to Essex County Council and Brentwood Borough Council. The data are presented with analysis and interpretation. Monitoring arrangements are in place for the data to be updated on an annual basis.

The baseline information is organised into the following topic areas, covered by the SEA Directive. The report is divided into two parts. Part I deals with the Natural Environment, including the topics of,

- Biodiversity, Flora and Fauna
- Landscape Character
- Air Quality
- Water Quality
- Flooding
- Geology and Soil
- Climatic Factors

Part II of the report deals with the Built Environment, including the topics of,

- Industry and Commerce
- Employment
- Road Accident Data
- Housing
- Homelessness
- Development on Previously Developed Land
- Population
- Educational Achievement
- Crime
- Indices of Multiple Deprivation
- Cultural Heritage and Material Assets

Each topic is presented in a separate chapter, with each chapter divided into 4 sections,

- Introduction
- Policy Context – with sub-sections, as appropriate, on International, National, Regional, County and Brentwood context;
- Current Baseline Information – with sub-sections defined by the subject matter, including contextual and comparative information for broader geographic areas as appropriate and where possible;
- Summary

A Bibliography, listing references and sources by topic chapter, is included at the end of the report.

PART 1

NATURAL ENVIRONMENT

2. BIODIVERSITY, FLORA AND FAUNA

2.1 Introduction

Biodiversity, flora and fauna simply describes all living things, the variety of life on earth, all plants, animals and the places in which they live. Much of what makes the environment we inhabit special is linked to biodiversity. Equally much of what comprises biodiversity, as part of a natural system, also has a function in the system we live in. Pollution can be filtered, flood waters alleviated, and air cleaned by biodiversity.

2.2 Policy Context

A. International Context

The first Earth Summit in Rio de Janeiro in 1992 resulted in more than 150 world leaders signing the Convention on Biological Diversity. The principle objectives of the Convention on Biological Diversity include,

- conservation of biodiversity;
- sustainable use of its components; and,
- fair and equitable sharing of the benefits arising from use of generic resources.

The UK Government was one of the signatories of the Convention. This prompted the preparation of the UK Biodiversity Action Plan (1995) by the UK Biodiversity Steering Group. The UK Biodiversity Action Plan describes the UK's biological resources, commits to a detailed plan for the protection of these resources and has 391 Species Action Plans, 45 Habitat Action Plans and 162 Local Biodiversity Action Plans with targeted actions.

B. National Context

National planning policies are published by the Department for Communities and Local Government in Planning Policy Statements (PPS), which are gradually replacing Planning Policy Guidance Notes (PPG). In respect of Biodiversity, Flora and Fauna, national guidance is presented in two PPSs:

- PPS1: Delivering Sustainable Communities sets out the Government's overarching planning policies on the delivery of sustainable development through the planning system. The PPS notes that the Government set out 4 aims for sustainable development in the 1999 UK Sustainable Development Strategy (later updated in 2005 to include guiding principles for sustainable development). It advises that planning policies should seek to protect and enhance the quality, character and amenity value of the countryside and a high level of protection should be given to most valued landscapes, wildlife habitats and natural resources. Those features with national and international designations should receive the highest level of protection. Planning should seek to maintain and improve the local environment and help to mitigate the effects of declining environmental quality through positive policies on issues such as design, conservation and the provision of public space. Where adverse impacts are unavoidable, planning authorities and developers should consider possible mitigation measures. Should adequate mitigation measures not be possible, compensatory measures may be appropriate. Development plan policies will need to take account of the protection of the wider

countryside and the impact of development on landscape quality; the conservation and enhancement of wildlife species and habitats; and the promotion of biodiversity.

- PPS9: Biodiversity and Geological Conservation sets out the Government's objectives for planning within this topic area as,
  - to promote sustainable development by ensuring that biodiversity and geological diversity are conserved and enhanced as an integral part of development;
  - to conserve, enhance and restore the diversity of England's wildlife and geology;
  - to contribute to rural renewal by enhancing biodiversity in green spaces and among developments so that they are used by wildlife, and to understand that biodiversity and a well managed environment can positively contribute to a person's quality of life.

  Detrimental effects to biodiversity that could be caused by a development will need to be either mitigated or offset in another location.

C. Regional/County Context

i) Draft East of England Plan

The Draft East of England Plan, prepared by the East of England Regional Assembly (EERA), was submitted to Government in December 2004. Following a period of public consultation the Plan was subject of an Examination in Public (EiP) between November 2005 and March 2006. The Report of the EiP Panel was published in June 2006. In December 2006 the Secretary of State published Proposed Changes to the Draft Plan for a period of public consultation to March 2007. The final Plan is expected to be published by Government by summer 2007.

Relevant policies in the Draft Plan, as submitted in December 2004, are:

- Policy ENV1: Environmental Infrastructure stresses the need to identify biodiversity conservation areas and biodiversity enhancement areas to deliver large-scale habitat enhancement for the benefit of wildlife and people.
- Policy ENV3: Biodiversity and Earth Heritage will ensure that the internationally and nationally designated sites in the region are given the strongest level of protection. Restoration and re-establishment of habitats and species population in accordance with biodiversity targets in the East of England strategy is to be promoted. Ensuring the appropriate management and further expansion of wildlife corridors that are important for the dispersal and migration of wildlife is also important.
- Policy ENV4: Woodlands states that woodland should be optimised for economic, social and environmental value whilst protecting the biodiversity and character of existing woodland and other areas of established or potential nature conservation. The provision of new woodland, as part of a planning condition should be encouraged, to address local Biodiversity Action Plan (BAP) targets by, for example, expanding and linking areas of native woodland and the creation of new wet woodland for which this region is a priority.
- Policy ENV6: Agriculture, Land and Soils promotes the expansion of agri-environment schemes to increase the landscape, historic and wildlife value of farmland in accordance with regional priorities. Where soil and land has been degraded, opportunities should be maximised for restoration to beneficial after-uses including agriculture, woodland, amenity and habitat creation schemes.

ii) Essex and Southend-on-Sea Replacement Structure Plan April 2001

The Essex and Southend-on-Sea Replacement Structure Plan was adopted in April 2001. The Planning and Compulsory Purchase Act 2004 introduced a 'new' statutory plans system. The transitional arrangements for the 'new' system provide for the Adopted Structure Plan policies to be "saved" to 28th September 2007. Beyond that date policies of the Plan will cease to have effect unless they are "saved" by the Secretary of State. The Secretary of State has published a protocol on the procedures for saving Structure Plan policies. The protocol requires the Regional Planning Body to make requests for extending the life of Structure Plan policies to the Secretary of State by 1st April 2007. Such requests will be considered in the light of criteria set out in PPS11 paragraph 2.57.

Relevant policies in the Adopted Plan, April 2001 are:

- Policy NR6: Nature Conservation Sites states that wildlife and other natural features will be protected from inappropriate development, conserved and enhanced. Development not directly connected with management of the site which would detrimentally affect either designated or candidate sites of International or European importance will not be permitted unless there is no alternative solution. Development which will have an adverse effect, either directly or indirectly on a Site of Specific Scientific Interest (SSSI) or National Nature Reserve (NNR) will not be permitted unless the need for the development clearly outweighs the national nature conservation importance of the site. Planning obligations should be entered into if there is a chance of damage to the site or wildlife. Development will not be permitted which may harm or adversely affect animals and plants protected by law, together with their habitats.
- Policy NR7 Promoting Biodiversity notes that local authorities will work in partnership with statutory and voluntary conservation groups and landowners to increase the size, number, quality and diversity of natural habitats to be safeguarded and managed.
- Policy NR9: Woodland and Tree Cover is concerned with enhancing the landscape by increasing coverage of woodland and hedgerows using locally native species. Where appropriate, existing woods, trees and hedgerows will be protected for their wildlife and historic importance.
- Policy NR11: The Urban Fringe states that local authorities will work with other agencies to provide opportunities for the enhancement and effective management of land in the urban fringe through, for example, such measures as landscape improvement and habitat creation.

D. Brentwood Context

i) Brentwood Replacement Local Plan Adopted 25th August 2005

The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). The policies within the Local Plan of relevance to biodiversity, fauna and flora, are:

- Policy CP1: General Development Criteria states that any development will be expected to take full account of the need to conserve or enhance the character, appearance and biodiversity of the site and surrounding area. If it is considered that the harm or loss of an area is outweighed by the need for the development, the Council will require appropriate compensatory measures, either offsite or on.
- Policy C2: Sites of Special Scientific Interest states that development which would have an unacceptable detrimental impact on a Site of Special Scientific Interest will

not be permitted unless the reasons for the development clearly outweigh the value of the site itself. Mitigation and compensatory measures may have to be provided.

- Policy C3: Local Nature Reserves states that areas of local conservation value, which would benefit from positive management, will be designated as Local Nature Reserves.
- Policy C4: County Wildlife Sites, Local Nature Reserves and Other Habitats and Natural Features of Local Value states that any development which would have an unacceptable detrimental impact upon any of the above features will not be permitted unless there is a demonstrable need for the development. Appropriate mitigation will have to be provided where applicable. Development that would effect a habitat or species identified in either the Essex or Brentwood Biodiversity Action Plans will only be permitted if the Council is satisfied that it wouldn't be to the detriment of those habitats or species.
- Policy C6: Management of Woodlands states that existing woodlands should be retained and managed effectively. In any management scheme, it is essential that the ecological value of the wood is safe.
- Policy C7: Retention and Provision of Landscaping and Natural Features in Development relates to existing trees, hedgerows, watercourses and other natural features. These should be retained, with further landscaping works required to enhance new development. Development plans should clearly display all existing features, detailing what is to be retained and added to the landscape of the site.
- Policy C9: Development Affecting Preserved Trees, Ancient Woodland and Trees in Conservation Areas states that development which would damage, destroy or threaten the survival of the above tree types will not be permitted unless it is for arboriculture works or the development clearly outweighs the amenity or nature conservation value of the tree.
- Policy C10: Special Landscape Areas states that a Landscape Character Assessment should be prepared for Brentwood Borough Council, identifying the different character of land within the countryside. Until this is completed, Special Landscape Areas, where defined in the Local Plan, will be taken as areas where conservation and restoration of existing character should be given high priority.

ii) Brentwood Community Strategy

The Brentwood Local Strategic Partnership (LSP) is committed to working in partnership with the local community and businesses to improve local environmental standards. The LSP's Strategic Objective regarding the Local Environment is,

> *'To seek to make provision for appropriate sustainable development to meet the needs of the Brentwood Borough, whilst conserving and maximising resources and enhancing the character and environmental quality of the Borough for the benefit of current and future generations.'*

This will be achieved through appropriate maintenance of green spaces, promoting the conservation and sustainable development use of natural resources, raising awareness of environmental issues in the Borough across all age groups and working with local businesses to achieve environmental improvements for the Borough.

2.3 Current Baseline Information

A. The Essex Biodiversity Action Plan

The Essex Biodiversity Action Plan contains action plans for 25 species and 10 habitats throughout the County of Essex. In order to ensure that current and future planning policy appropriately addresses issues relating to biodiversity and the natural environment, planning officers need to be aware of the biological factors evident in the local area.

Table 1 illustrates the species native within the administrative boundary of Brentwood Borough Council, as outlined in the Biodiversity Action Plan, in terms of their current status, factors causing loss or decline in the species, and relevant policy actions that may be taken to protect and enhance the species.

Table 2 illustrates the habitats native within the administrative boundary of Brentwood Borough Council, as outlined in the Biodiversity Action Plan, in terms of their current status, factors causing loss or decline in the species, and relevant policy actions that may be taken to protect and enhance the species.

Table 1: Species Native within Brentwood Borough Council area, as outlined in the Biodiversity Action Plan

Species	Current Status in Essex	Factors Causing Loss or Decline	Relevant Actions
A. Plants			
Native Black Poplar (Populus nigra subspecies betulifolia)	Possibly upwards of 200 mature trees in Essex, although as a result of media attention this number could be considerably higher. It is present in all districts in Essex, including Brentwood.	• Little knowledge of actual numbers and locations of trees has meant specimens may have been felled in ignorance; • The tree is widely dispersed across the County and is rarely concentrated. Where concentrations are evident they tend to be male therefore posing a constraint to conservation work; • Only up to 10 trees have been suspected to be female; • Many of the trees are post-mature and can be lost to natural events; • Loss of individual trees through neglect or ignorance; • Absence of their natural habitat (floodplain forest) means that opportunities for natural regeneration are extremely limited.	• Local authorities encouraged to serve Tree Preservation Orders; • Safeguard all known trees; • Encourage and promote new planting in appropriate places; • Add cuttings to the clone bank whenever the opportunity arises; • Advice on care and protection.
B. Mammals			
Brown Hare (Lepus europaeus)	Species locally common in Essex and a general increase in numbers was seen after the onset of myxomatosis in the rabbit population. It is present in all districts in Essex, including Brentwood.	• Loss of habitat diversity in the agricultural landscapes; • Changes in the planting and cropping regimes such as a move from hay to silage and reduction in over wintering stubbles; • Illegal hare coursing; • Road casualties can be an important source of mortality in some areas, especially where new road schemes cross existing populated areas.	• Maintain the current numbers of breeding hares in Essex; • Reduce the amount of illegal hare coursing; • Encourage the uptake of agri-environmental schemes such as Countryside Stewardship and Arable Stewardship and consider the needs of brown hares when implementing changes in land management; • Encourage uptake of flexible set-aside schemes instead of rational set-aside, so that habitats are left in place for longer, providing a more stable environment for this and other species.
Dormouse (Muscardinus Avellanarius)	The distribution is spread over most districts in Essex, including Brentwood.	• Loss of broad leaved ancient woodland, which provides the optimum habitat for dormice when managed in a suitable way. Also loss of hedgerows	• Dormice occur in some known, and probably many as yet unknown, sites which have no protection as nature

N.B dormice are in Appendix 3 of the Bonn Convention and Annex IV of the EC Habitats Directive. It is protected under Schedule 2 of the Conservation (Natural Habitats etc.) Regulations 1994 and Schedule 5 of the Wildlife and Countryside Act 1981.		which can provide suitable habitat and corridors between woodland; • Changes in woodland management have also reduced the number of suitable sites for dormice; • Woodland management in plantation forests does not provide good dormouse habitat, consisting of few species, tall straight trees and little or no understorey; • Fragmentation of suitable habitats can leave isolated non viable populations; • Warfrin put out to control grey squirrels may cause a problem locally, whereas large populations of squirrels themselves may reduce the amount of available hazel nuts in places.	reserves or SSSIs. These sites may have value as links or corridors therefore it is important to protect these species as a material consideration.
Pipistrelle Bats (Pipistrellus pipistrellus) N.B. Pipistrelle is listed on Appendix III of the Bern Convention, Annex IV of the EC Habitats Directive and Appendix II of the Bonn Convention. It is also included under the Agreement on the Conservation of bats in Europe. It is protected under schedule 2 of the Conservation (Natural Habitats) Regulations 1994 and schedules 5 and 6 of the Wildlife and Countryside Act (1981).	Both species of pipistrelle bats are present in Essex and Brentwood, although survey work is at an early stage. The 46kHz type has been recorded from 42 10km squares (in all Essex districts) and the 55kHz type from 23 10 km squares (in 10 Essex districts).	• Reduction in insect prey abundance due to high intensity farming practices and inappropriate riparian management. • Loss of insect rich feeding habitat such as wetlands and hedgerows; • Loss and disruption of flight line features (linear landscape elements) such as hedgerows; • Loss of roost sites in buildings and trees due to cavity wall insulation, use of UPVC barge-boarding and soffits and clearance of dead trees; • Disturbance and destruction of maternity roosts due to building works and conflicts with householders.	• Maintain existing populations and range.
Water Vole (Arvicola terretris) N.B received limited protection under the quinquennial review of	Records from the 1997 RSNC national water vole survey indicates that water voles are still present on most of the main river catchments in all districts in Essex, although population numbers are thought to	• Habitat loss – loss of suitable bank-side habitats as a result of engineering, bankside development, over zealous vegetation clearance and general decline of habitat condition have all contributed; • Population fragmentation – populations are fragmented by human interference, new roads,	• Improve riverine and other habitats for water voles throughout the county; • Promote better awareness of water voles; • Mink control; • Publicise risk of pollutants;

the Wildlife and Countryside Act (1981) under schedule 5 section 9(4).	have declined at some sites.	canalisation, development and loss of suitable inter-connecting river corridor habitat and the presence of mink; • Water level fluctuations – due to drought. • Predation – spread of feral mink has increased predation; • Pollution – contamination of freshwater environments by pesticides, heavy metals, DDE, PCB's and organic pollution from slurry and sewage may have contributed to the decline of water voles in certain river catchments, however water voles have been recorded as thriving on polluted watercourses in some areas; • Indirect poisoning.	• Use water vole as indicator of good water quality/riverine habitat.
C. Birds			
Grey Partridge (Perdix perdix) N.B Protected in the close season under the Game Acts. Listed on Annex III/II of the EC Birds Directive and Appendix III of the Bern Convention.	The grey partridge is patchily distributed through all the Essex districts, including Brentwood. Population trends are unclear but it appears to have steadily declined since the 1940's with some stabilisation over the past few years.	• Loss of nest sites (such as hedge bottoms) as a result of farm intensification; • Reduced food supplies and sources for chick food through the use of pesticides and herbicides, as well as the loss of winter stubble used as a food source by adults; • Vulnerability of predators in farmland with poor cover; • Nest destruction caused by early mowing and other farm operations.	• Maintain and enlarge the species and range by encouraging the uptake of agri-environmental schemes. Promote appropriate set aside management.
Skylark (Alauda Arvensis) N.B. The Skylark is a registered UK Red listed species. The Skylark is protected under the 1979 EC Birds Directive and the Wildlife and Countryside Act (1981).	Common and widespread throughout Essex, including Brentwood, although breeding population has apparently declined steadily in recent years, mirroring the national trend.	• Intensification of farming practices on lowland arable land has led to a reduction in available food for the skylark; • Autumn-sown crops and intensively managed grasslands create unsuitable nesting habitat for skylarks; • High densities of skylarks are recorded on salt marshes and are amongst the most widespread species found breeding and wintering on British salt marsh. Inundation by high spring tides during the breeding season can result in almost complete nesting failure on some sites.	• Maintain and enlarge the population of skylarks in Essex. Promote appropriate set-aside management.

Song Thrush (Turdus Philomelus) N.B. Species is protected under EC Birds Directive and the Wildlife and Countryside Act (1981).	Common and widespread throughout the county, including Brentwood, but declining in recent years, mirroring the national trend.	• Changes in farming affecting food supply and the availability of nest sites, particularly the switch from spring to autumn-sown cereals and possibly the increased use of molluscicides; • Severe winter weather and dry soils, especially during drier summers (possibly effect of climate change) affecting food availability; • Predation; • Competition with blackbirds; • Hunting in southern France.	• Promote the uptake of sensitive farming options under existing agri-environment incentive schemes over the whole county to benefit song thrush.
D. Invertebrates			
Shining Ramshorn Snail (Segmentina Nitida) N.B. The species is listed as endangered in the GB Red List.	There are unconfirmed reports that the snail is evident within Essex, including Brentwood. As the reports are unconfirmed there is the possibility that the species is extinct in Essex.	• Excessive ditch clearance; • Eutrophication of water courses due to fertiliser run off; • Conversion of grazing to arable farming with associated water table lowering.	• Seek to maintain water quality within occupied sites; • Safeguard sites where the population is known to exist.

(Source; Essex Partnership, Essex Biodiversity Action Plan)

Table 2: Habitats Native within Brentwood Borough Council area, as outlined in the Biodiversity Action Plan

Habitats	Current Status in Essex	Factors Causing Loss or Decline	Relevant Actions
Ancient and/or Species Rich Hedgerows and Green Lanes	Hedgerows and green lanes are widely spread throughout Essex, including Brentwood. The hedgerows may be divided into 4 categories; 1) Ancient species rich hedgerows found mainly on the chalk and chalky boulder clay soils of North West Essex. 2) Ancient species poor hedges e.g. the elm dominated hedges of Thurrock and Maldon. 3) Enclosure and post enclosure species poor hedges. 4) Modern species rich hedges often planted under grant schemes e.g. the MAFF Countryside Stewardship Scheme or ECC Landscape Conservation Programme. There are no accurate figures regarding the length of hedgerows and green lanes in Essex However there are 6,502km of footpaths, 800km of bridleways, and 194km of byways. This habitat has associated Biodiversity Action Plans for Pipistrelle Bats, Grey Partridge, Song Thrush and Dormouse, all of which are present in Brentwood.	• Drastic loss of hedgerows through removal, neglect and changes in management practice. Loss is due to agricultural improvement, encouraged up until the early 1970's by government policy. • Removal due to mineral working, road construction and general developments. • The composition of the hedgerows altered due to the utilisation of herbicides, pesticides and fertilisers which has resulted in a decline in species diversity. • Dutch Elm Disease also destroyed many hedges particularly in the south and east of Essex and remains a recurring feature of the landscape. • Hedgerow decline, and especially the decline of standard trees within the hedgerow, has been further exacerbated by deep ploughing and drainage which destroyed roots and changed water availability, causing tree stress and die back.	• To halt, maintain and enhance hedgerow numbers within the county and district. • Promote the use of practices that can protect hedgerows from fertilisers and pesticides such as Conservation Headlands and set-aside strips. • Ensure that planning policies and development control decisions promote the protection and management of ancient and/or species rich hedgerows and green lanes within and around developments and seek to minimise the adverse impacts on hedgerows of planning proposals. • Encourage the retention and management of ancient and/or species rich hedgerows and green lanes within and around developments, and seek to minimise the adverse impacts on hedgerows of planning proposals.
Ancient Woodland	Ancient woodlands are those that have been in continuous existence since before 1600. Most are likely to have existed since the end of the last ice age (primary) although some were cleared and then re-	• Lack of function and neglect – decline in demand for traditional wood products, leading to woods being grubbed out, coniferised or neglected. Neglect has increased as there is a lack of knowledge on how to manage those sites and of markets for products. • Loss of woodland from agricultural intensification has	• Halt the loss of ancient woodland by protecting, maintaining and enhancing existing sites. Avoid any further loss due to agriculture and new development. Ensure sustainable management of woodlands.

	established before this date (ancient secondary). In Essex the Phase One Habitat Survey completed 1992 showed that woodland cover was 5.76% of the County, which is below the national average. The County of Essex does not have an even distribution of woodland; coastal districts contain less, while the proportion of Brentwood and Epping Forest with woodland cover is 9%. This habitat has associated Biodiversity Action Plans for Pipistrelle Bats, and Dormouse, both of which are present in Brentwood.	largely stopped, and the main threat is now from new development. • Pest damage. • Inappropriate management by removal of large old trees, uncontrolled grazing by deer and livestock can damage the age structure and prevent regeneration. • Recreation use/pressure. • Amenity factors restricting management. • Dumping. • Loss of dead wood leads to a loss of valuable habitat for a wide range of invertebrates. • Isolation from other habitats by arable fields and housing limits spread of species. • Uncertain impact of climate change but it is highly likely to alter the viability of some species and character of the woodlands.	• Consideration should be given to determine how best to promote biodiversity.
Cereal Field Margins	Cereal Field Margin refers to strips of land lying between cereal crops and the field boundary and extending for a limited distance into the crop, which are deliberately managed to create conditions which benefit key farmland species. They can take a variety of forms. Cereals account for the 51% of the total area of arable land in the UK and approximately 65% of total area in Essex. Cereal Field Margins occur in all districts in Essex, including Brentwood. This habitat has associated Biodiversity Action Plans for Pipistrelle Bats, and Dormouse, both of which are present in Brentwood.	• Intensification of cereal production including the use of herbicides to ensure a weed free monoculture, and summer use of insecticides. • Shift to winter cropping and the associated loss of winter stubbles. • Reduction in rotation of cereal crops with other land covers (including grass leys and fallows). • Reduction in under sown areas associated with the shift to winter cropping.	• Promote management favourable to Cereal Field Margins.
Heathland	British lowland heathland vegetation is a cultural habitat, which is part derived from human activity. Heath formation began during the Mesolithic period, when woodland	Agricultural intensification and afforestation in the 20th century have been the primary cause of loss of heath but this is no longer the case. The current factors include; • Development – High demand for housing, industry or	• Maintain and enhance the wildlife value of existing heathland through appropriate management schemes. • Establish restoration and management projects.

	was first cleared and increased when woodland clearance intensified during the Bronze Age. Heathland once covered an extensive part of Essex, however today only a few remnant heaths remain. The heathland of Essex encompasses dry heath, wet heath and lichen heath, all of which are made up of a mosaic of acid grasslands and heath. Within Brentwood named existing heathland sites are at Mill Green Heath, Navestock Heath, and Thorndon Park, and a Heathland Priority Area is identified in the Borough. The heathland habitat has an associated Biodiversity Action Plan for Skylark, which is present in Brentwood.	leisure facilities e.g. golf courses, has had a serious impact in Essex. • Neglect and mismanagement. • Frequent 'amenity' cutting. • Recreational pressures. • Public opposition – public outcry at tree removal on historical heathland sites often prevents or curtails ambitious heathland management or restoration projects from happening. • Atmospheric pollution – chemical changes affect the soil characteristics and the heath communities.	• Increase awareness and appreciation of the conservation status and management requirements of heathland within Essex. • Designate sites where appropriate.
Old Orchards	Essex was once a major contributor to orchard produce in England. Essex mainly produces apples, predominately the Cox's and Bramleys which are well suited to the windy and coastal aspects and Worcesters in the chalkier regions of Uttlesford. 65ha of registered non commercial orchards exist in Essex and 1093ha of commercial orchards. The majority of orchards occur in Tendring, Colchester, Maldon, Chelmsford and Braintree, but the habitat is identified in Brentwood. The habitat has associated Biodiversity Action Plans for Dormouse, Pipistrelle Bat, Song Thrush and Grey Partridge, which are present in Brentwood.	• Continued removal of orchards and individual fruit trees for agricultural intensification or development. • Neglect and loss of fruiting capacity, when surrounded by secondary woodland. • Lack of knowledge of traditional varieties. • Use of inappropriate grazing and amenity which has led to tree damage.	• Prevent further loss of existing old orchards. • Restore and manage existing old orchards. • Create new orchards (community, school, private) using locally characteristic stock.

Urban Areas	Nature conservation in town and cities is not only providing for wildlife. Wildlife can also play an important part in people's life and therefore should not be restricted to the countryside. Urban habitats can be considered to be distributed throughout Essex. The densest urban areas in Essex are along the Thames estuary and the main towns, including Brentwood. The habitat has associated Biodiversity Action Plans for the species of Water Vole, Skylark, Pipistrelle Bat, and Song Thrush, and for the habitats of Ancient Woodland and Ancient and/or Species Rich Hedgerows and Green Lanes, all of which are present in Brentwood.	• Poor perception of site value – especially open and disturbed ground. • Conflicting pressures for land use and the consequent loss of habitat. • Inappropriate management of valuable habitats to create 'tidy' landscapes. • Lack of management of wildlife sites, often due to numerous small and dispersed sites increasing costs. • Disturbance, trampling and heavy use of sensitive sites.	• Provide accessible natural open space for environmental education and the informal enjoyment of nature; • Maintain and improve natural networks of wildlife sites and green space in major urban areas; • Protection, mitigation and management policies in local development plans.

(Source; Essex Partnership, Essex Biodiversity Action Plan)

B Sites of Special Scientific Interest (SSSIs)

Natural England has highlighted that there are in excess of 4,000 Sites of Special Scientific Interest (SSSIs) in England, covering around 7% of the country's land area. Over half of these sites, by area, are internationally important for their wildlife, and designated as Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites. Many SSSIs are also National Nature Reserves (NNRs) or Local Nature Reserves (LNRs). SSSIs are the country's very best wildlife and geological sites. They include some of our spectacular and beautiful habitats - large wetlands teeming with waders and waterfowl, winding chalk rivers, gorse and heather-clad heathlands, flower-rich meadows, windswept shingle beaches and remote uplands moorland and peat bog.

PPS9 (ODPM, 2005) cites that "many SSSIs are also designated as sites of international importance and will be protected accordingly. Those that are not or those features of SSSIs not covered by an international designation should be given a high degree of protection under the planning system" (Paragraph 7). The condition of SSSIs in England is assessed by Natural England annually using agreed categories across England, Scotland, Wales and Northern Ireland through the Joint Nature Conservation Committee. The conditions may be categorised as favourable, unfavourable recovering, unfavourable no change, unfavourable declining, part destroyed and destroyed. The definition of the categories for condition of SSSIs is outlined in Table 3.

Table 3: Definition of Categories for Condition of SSSIs in England

Category	Definition
Favourable	The SSSI is being adequately conserved and is meeting its conservation objectives. However, there is scope for enhancement of these sites.
Unfavourable Recovering	Whereby the SSSI is not yet fully conserved but all the necessary management measures are in place. Provided that the recovery work is sustained, the SSSI will reach a favourable condition in time.
Unfavourable No Change	Whereby the special interest of the SSSI unit is not being conserved and will not reach favourable condition unless there are changes to the site management or external pressures. The longer the SSSI remains in this poor condition, the more difficult it will be, in general, to achieve recovery.
Unfavourable Declining	This means the special interest of the SSSI is not being conserved and will not reach favourable condition unless there are changes to site management or external pressures. The site condition is becoming progressively worse.
Part Destroyed	Whereby there has been lasting damage to part of the special conservation interest of a SSSI unit such that the part has been irretrievably lost and will never recover.
Destroyed	Means that lasting damage has occurred to all the special conservation interest of the SSSI unit that it has been irretrievably lost. This land will never recover.

(Source; Natural England Website 2006).

The overall condition of SSSIs throughout Essex in 2005 and 2006 is illustrated in table 4. Table 4 highlights the proportion of SSSIs that meet the PSA target. Natural England defines the PSA target as the proportion of SSSI sites that are defined by the 'Favourable' or 'Unfavourable Recovering' condition.

Table 4: Condition of SSSIs throughout Essex County in 2005 and 2006

Condition of Essex SSSIs	2005	2006	Change
Meeting PSA target	56.47%	57.02%	0.55%
Favourable	51.23%	51.79%	0.56%
Unfavourable recovering	5.24%	5.23%	-0.01%
Unfavourable no change	2.74%	2.71%	-0.03%
Unfavourable declining	40.79%	40.27%	-0.52%
Destroyed/part destroyed	0.00	0.00%	0.00%

(Source: http://www.english-nature.org.uk/special/sssi/reportAction.cfm?Report=sdrt18&Category=C&Reference=1015)

Policy with regard to SSSIs should be consistent with meeting the PSA target. The conservation and necessary management to preserve the condition of the SSSIs characteristics should be promoted in order to ensure that sites are categorised as 'Favourable' and 'Unfavourable Recovering'. Within Essex the majority of SSSI sites met the PSA target in 2005 and 2006. There was also an increase in the proportion of SSSIs meeting the PSA target in 2006 compared to the 2005 baseline position. However, the categorisation also demonstrates a worrying situation for Essex because the 'Unfavourable Declining' category was the second most prevalent grouping, accounting for 40.27% of sites in 2006. Some improvement is shown compared to 2005 when 40.79% of sites were classed as 'Unfavourable Declining'. Nevertheless, these statistics demonstrate that unless appropriate management objectives are adopted to conserve and enhance SSSIs then the condition of sites is likely to get progressively worse.

Figure 1 illustrates the spatial distribution of SSSIs throughout Essex.

Figure 2 illustrates the spatial distribution of SSSIs in Brentwood. There are 3 SSSIs in Brentwood - Thorndon Park, Kelvedon Hatch and Curtismill Green.

Natural England collates information on over 4000 SSSIs throughout England, furthermore the number of SSSIs continually alters as new sites are notified and in some circumstances sites have their SSSI status removed. Tables 5 – 10 illustrate the 3 SSSIs located within Brentwood Borough in detail.

Figure 1: Sites of Special Scientific Interest in Essex County

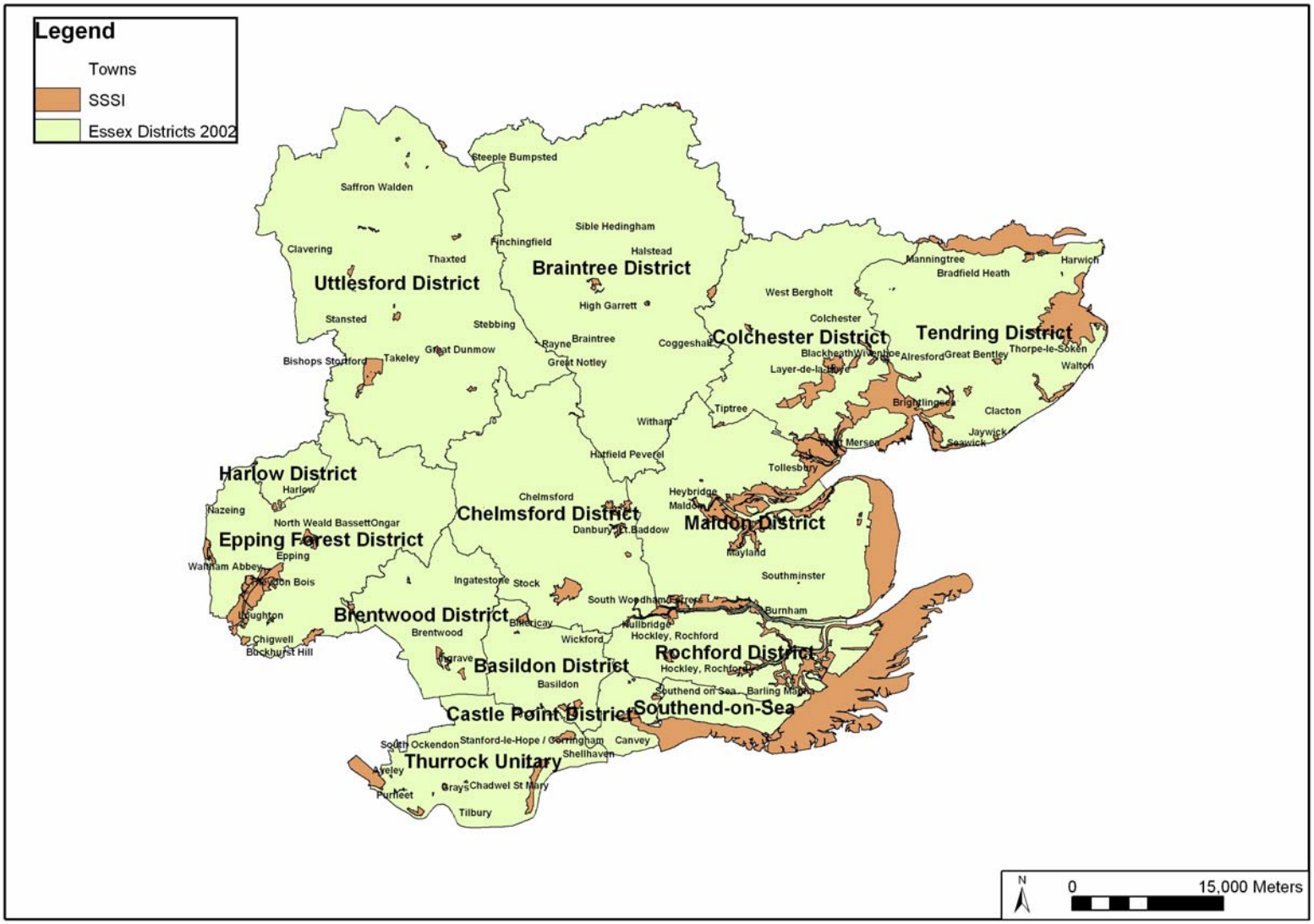

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Figure 2: Sites of Special Scientific Interest in Brentwood

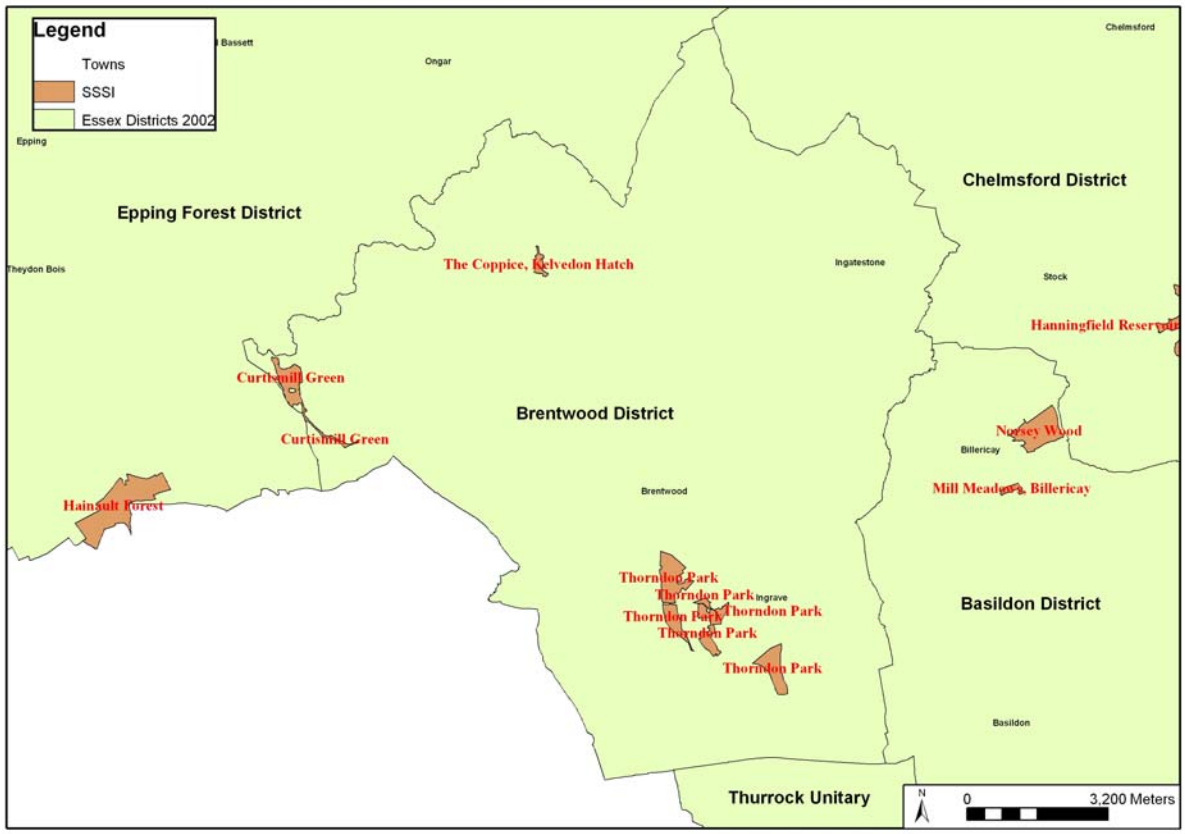

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Table 5: Characteristics of Thorndon Park SSSI

Site Name		Thorndon Park	
Status		SSSI notified under Section 28 of the Wildlife and Countryside Act (1981)	
Date Notification (Under 1949 Act)	1966	**Date of Last Revision**	1971
Date Notification (Under 1981 Act)	1986		
Other Information		Part of this is owned and managed by Essex County Council as a Country Park.	
Description and Reasons for Notification			
Thorndon Park is an area of semi natural broad leaved woodland and ancient parkland supporting a range of habitat types developed over Claygate and Bagshot Beds and gravel to the south of Brentwood. The woodland includes the lowland Birch-Sessile Oak and Pedunculate Oak Hornbeam types and the site supports an outstanding assemblage of Beetles (Coleoptera) including one species which is rare and vulnerable in Britain.			

(Source; Natural England Website)

Table 6 illustrates the principal habitats within the Thorndon Park SSSI and their associated categorisation, condition assessment and, if appropriate, the reasons for adverse condition.

Thorndon Park SSSI had a high proportion of favourable habitats when last assessed by English Nature. However further action is required within the SSSI to improve, particularly parts of the site deemed unfavourable declining and unfavourable no change. The type of action required is weed control and forestry management within the site in order to ensure appropriate growth within the respective habitats.

Table 6: Detailed Characteristics of Thorndon Park SSSI

Main habitat	Unit number	Unit area (ha)	Latest assessment date	Assessment description	Condition assessment comment	Reason for adverse condition
Broadleaved, mixed and yew woodland - lowland	1	18.57	11 Mar 2005	Unfavourable no change		Forestry and woodland management
Broadleaved, mixed and yew woodland - lowland	2	4.82	20 Jun 2000	Favourable		
Broadleaved, mixed and yew woodland - lowland	3	7.30	20 Jun 2000	Unfavourable no change	This area needs to be opened up and managed.	Forestry and woodland management
Broadleaved, mixed and yew woodland - lowland	4	32.50	20 Jun 2000	Favourable		
Broadleaved, mixed and yew woodland - lowland	5	8.78	12 Jul 2000	Favourable	No active coppice at present but other coppice work going on in area.	
Dwarf shrub heath - lowland	6	4.17	20 Jun 2000	Unfavourable declining	Old parkland covered in birch scrub.	Inappropriate weed control
Dwarf shrub heath - lowland	7	3.01	20 Jun 2000	Unfavourable recovering	Acid grassland and heather with loads of birch and oak scrub. The area is being opened up and managed.	
Dwarf shrub heath - lowland	8	2.37	20 Jun 2000	Unfavourable no change	Old parkland covered in birch scrub.	Inappropriate weed control
Broadleaved, mixed and yew woodland - lowland	9	13.53	30 Jun 1999	Favourable	Visited during SSSI award, management apparantly meeting objectives. Planned introduction of grazing should improve matters further.	
Broadleaved, mixed and yew woodland - lowland	10	16.03	10 Jul 2002	Unfavourable recovering	Biodiversity Grant funds allocated to this part of the SSSI (December 2001) to deal with Cherry Laurel. Work carried out by time of visit on 10 July 2002. Some small patches remain to be eradicated. AM to follow up. Site visited with someone from ECC and Chris Keeling (EN).	
Broadleaved, mixed and yew woodland - lowland	11	20.96	12 Jul 2000	Unfavourable recovering	This area being well managed as parkland but needs to be opened up further and more conifers removed. Good progress so far.	
Broadleaved, mixed and yew woodland - lowland	12	16.48	12 Jul 2000	Favourable		

(Source; http://www.english-nature.org.uk/special/sssi/reportAction.cfm?Report=sdrt13&Category=C&Reference=1015

Table 7: Characteristics of The Coppice, Kelvedon Hatch SSSI

Site Name		The Coppice, Kelvedon Hatch	
Status		SSSI notified under Section 28 of the Wildlife and Countryside Act (1981)	
Date Notification (Under 1949 Act)	-	**Date of Last Revision**	
Date Notification (Under 1981 Act)	1986		
Other Information		This is a new site.	
Description and Reasons for Notification			
The Coppice, Kelvedon Hatch, is an ancient semi-natural broad-leaved wood, developed over a complex geology of Claygate Beds, Bagshot Beds and Head, in the small valley of a tributary of the River Roding. Two main woodlands types are present, base rich spring line Alder Woodland and Oak-Hornbeam Woodland. The base-rich spring line Alder Woodland is uncommon, but nationally and in Essex, and the Coppice contains a more diverse flora than other local examples of this stand type.			

(Source; Natural England, 2006)

Table 8 illustrates the principle habitats within the Coppice, Kelvedon Hatch SSSI and their associated categorisation, condition assessment and, if appropriate, the reasons for adverse condition.

The assessment demonstrates that the Coppice, Kelvedon Hatch SSSI is in favourable condition. However there is scope for improvement particularly with reference to the future maintenance of the sites condition and possible use of grants.

Table 8: Detailed Characteristics of The Coppice, Kelvedon Hatch SSSI

The Coppice, Kelvedon Hatch						
Main habitat	**Unit number**	**Unit area (ha)**	**Latest assessment**	**Assessment description**	**Condition assessment comment**	**Reason for adverse condition**
Broadleaved, mixed and yew woodland - lowland	1	9.34	28 Sep 2004	Favourable	Met with representative of owners to discuss Site Management Statement - progress, issues etc. Coppice regen along bridleway good. Some unauthorised use of SSSI by neighbours continues but owners representative feels garden waste dumping has reduced. Woodland overall still in sartisfactory condition but in the longer term consideration needs to be given to measures to maintain that condition (NB with respect to woodland structure/regeneration) Scope for consideration of new English Woodland Grant Scheme exists and would offer an opportunity to address this.	

(Source; http://www.english-nature.org.uk/special/sssi/reportAction.cfm?Report=sdrt13&Category=C&Reference=1015)

Table 9: Characteristics of Curtismill Green SSSI

Site Name		Curtismill Green	
Status		SSSI notified under Section 28 of the Wildlife and Countryside Act (1981)	
Date Notification (Under 1949 Act)	1955	**Date of Last Revision**	1974
Date Notification (Under 1981 Act)	1986		
Other Information		The Green is registered Common Land.	
Description and Reasons for Notification			
Curtismill Green is an area of unimproved grassland and scrub about five miles west of Brentwood on soils derived from London Clay and Chalky Boulder Clay. These are patches of valley gravel and alluvium locally. It is a small, separate relic of the ancient Forest of Waltham, of which Epping Forest is the largest surviving fragment. The varying soil conditions give rise to both damp and dry grassland containing several species which are uncommon, decreasing or unusual in the country.			

(Source; Natural England, 2006)

Table 10 illustrates the principle habitats within Curtismill Green SSSI and their associated categorisation, condition assessment and, if appropriate, the reasons for adverse condition.

Curtismill Green SSSI site has been categorised as unfavourable no change, therefore the site is not being adequately conserved and will fail to reach a favourable condition. There is clearly a need to manage species size to promote appropriate habitat growth and restoration in the future. Furthermore there is a need to control weeds and grazing. It is important that policy aims to appropriately preserve the character of the SSSI by adopting management approaches that facilitate habitat growth and replenishment.

Table 10: Detailed Characteristics of Curtismill Green SSSI

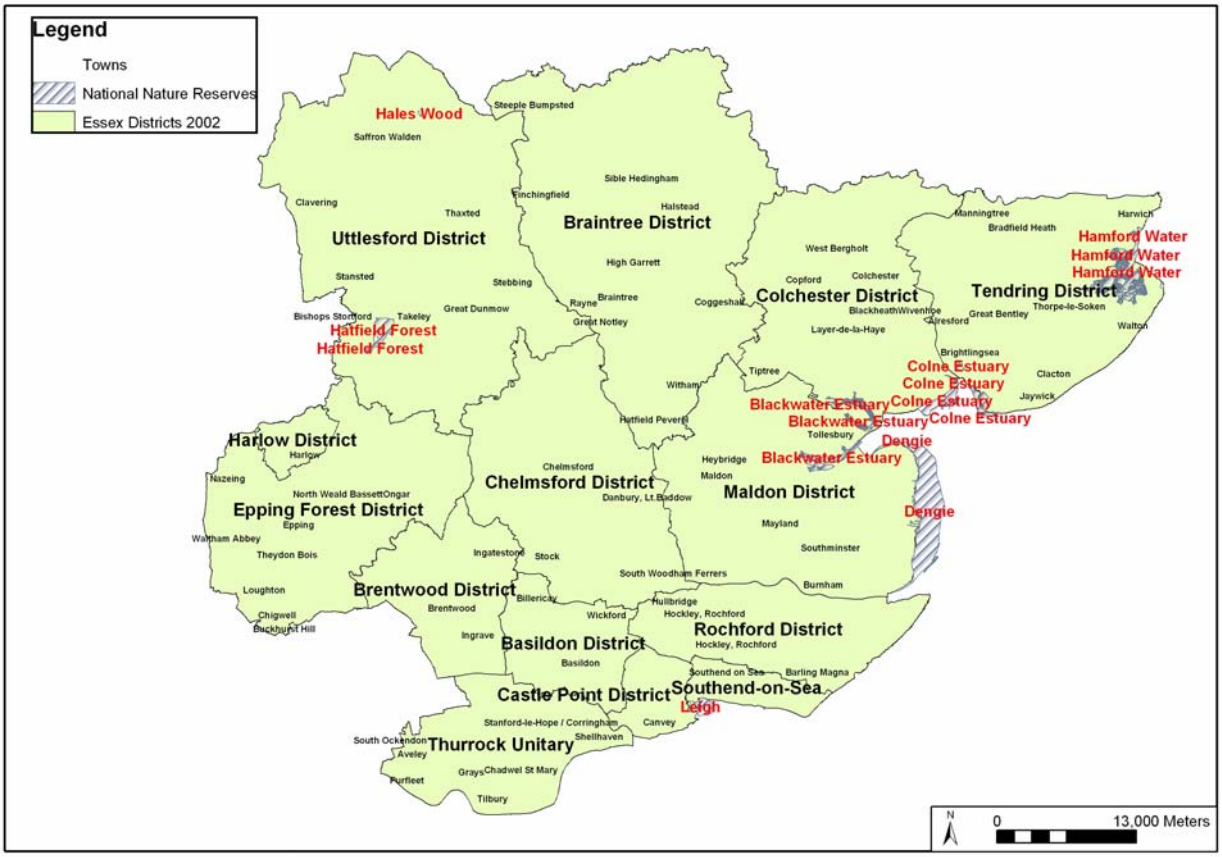
Curtismill Green						
Main habitat	**Unit number**	**Unit area (ha)**	**Latest assessment date**	**Assessment description**	**Condition assessment comment**	**Reason for adverse condition**
Neutral grassland - lowland	3	8.19	20 Jul 2000	Unfavourable no change	Long strip in 3 ownerships. Previous over use of 'byway' by vehicles still very apparent (rutting and very large hollows which are often impassable. Creation of new permissive bridleway through secondary woodland also become very poached. Grassland under managed - either rank and weedy or secondary woodland. Some scrub removal by Brentwood Council. Problems getting suitable management. Positive species under represented and negative species over represented. Area at The Harrow (TQ520958) being encorached and claimed as garden - Brentwood Council to chase up - both in terms of enforcement and clarifying ownership to neighbour.	Public access/disturbance
Broadleaved, mixed and yew woodland - lowland	4	39.61	23 Jun 2003	Unfavourable no change	Visited the unit with Steve Ayliffe, whose comments in July 2000 apply equally now. Marked lack of spp diversity. 3 horses grazing at time of assessment. Key issues = scrub and weed control (large blocks of scrub need knocking back to open up pinch points) and grazing/cutting management (Deschampsia caesp.frequent- dominant in eastern section with creeping thistle patches needing attention too) . Some recent cutting evident but arisings left in situ.	Inappropriate scrub control,Inappropriate weed control,Undergrazing

(Source; http://www.english-nature.org.uk/special/sssi/reportAction.cfm?Report=sdrt13&Category=C&Reference=1015)

C. National Nature Reserves (NNRs)

National Nature Reserves (NNRs) are places where wildlife is of paramount priority. They were established to protect the most important areas of wildlife habitat and geological formations in Britain, and as places for scientific research. These places are fragile environments therefore it is important that due care is taken to prevent damage. A diverse range of habitats are found in England's NNRs. At the end of March 2004 there were 215 NNRs covering 87, 900 hectares distributed throughout England. Within the County of Essex there are 7 NNRs. However there are no NNRs in Brentwood Borough.

Figure 3: National Nature Reserves in Essex



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D. Local Nature Reserves

Figure 4 shows the spatial distribution of Local Nature Reserves in Essex and Figure 5 their distribution in Brentwood Borough.

Figure 4: Local Nature Reserves In Essex

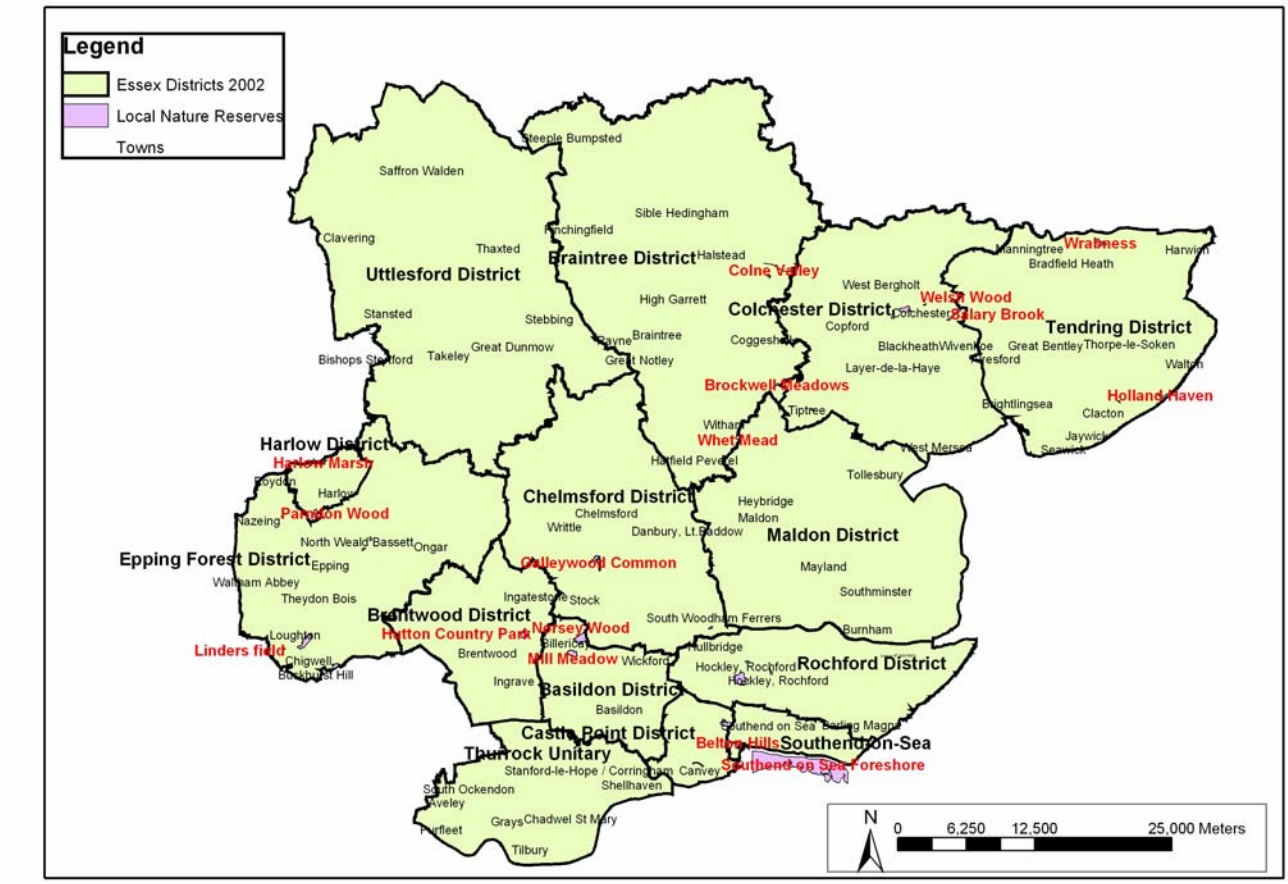

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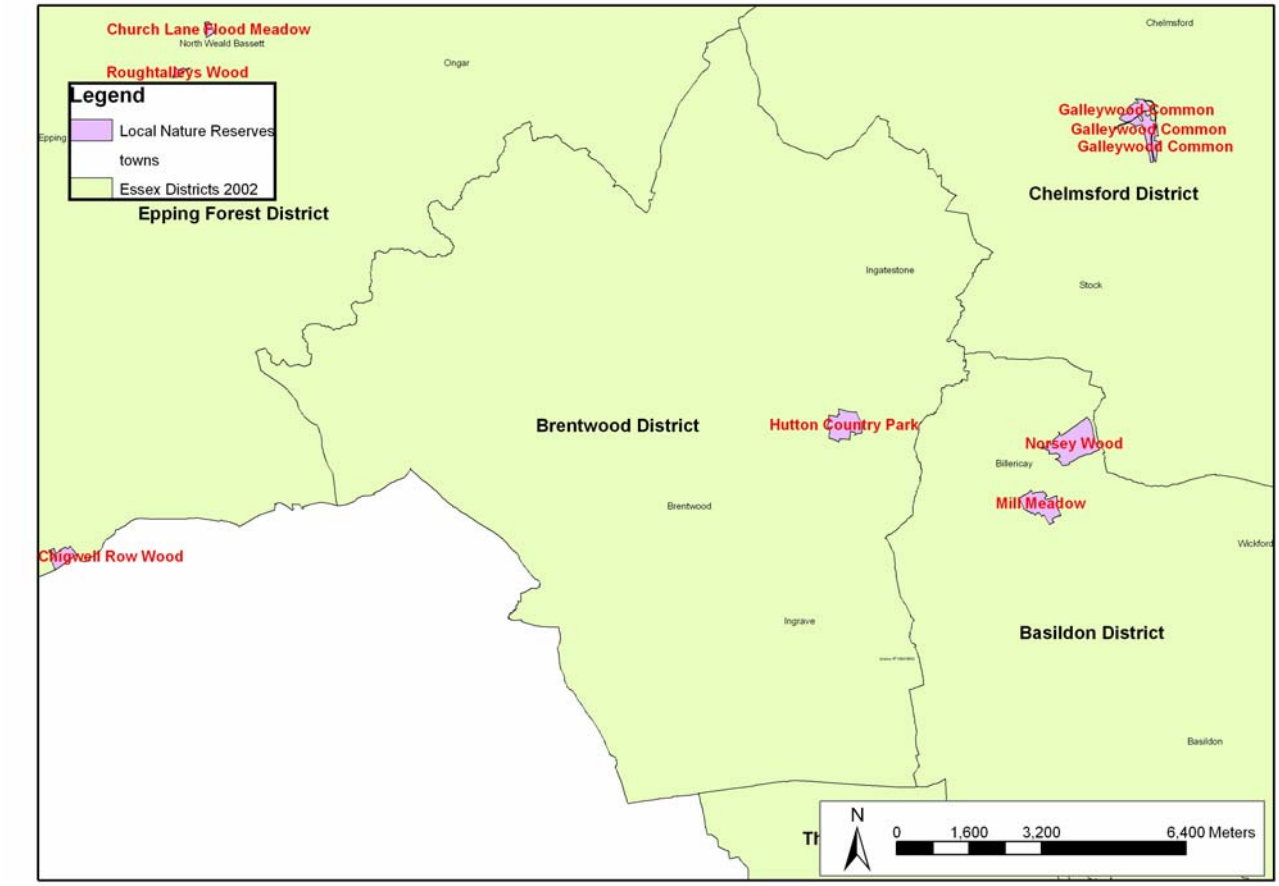
Figure 5: Local Nature Reserves In Brentwood Borough



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Local Nature Reserves (LNRs) are for both people and wildlife. They are places with wildlife or geological features that are of special interest locally. They offer people special opportunities to learn and enjoy nature. Within England there are 1,050 LNRs of varying natural habitats containing a range of wildlife communities (Natural England, 2006). English Nature recommends that LNRs should,

- normally exceed 2ha in size;
- be capable of being managed with the conservation of nature and/or the maintenance of special opportunities for study, research or enjoyment of nature as the priority concern.

Natural England also advises that LNRs should be;

- of high natural interest in the local context or,
- of some reasonable natural interest and of high value in the local context for formal education or research or,
- of some reasonable natural interest and of high value in the local context for the informal enjoyment of nature by the public.

The Brentwood Adopted Replacement Local Plan identifies one site as an LNR – Hutton Country Park, off Wash Road, which totals 34ha of mainly unimproved grassland. However, current evidence, as displayed on the Natural England website, fails to demonstrate that Hutton Country Park is a LNR. Action is therefore needed by Brentwood Borough Council to confirm with Natural England that Hutton Country Park is an LNR. Natural England highlights the process for designating an LNR as,

"if a local authority has, or knows of, any area of land which it thinks would make a good LNR; they should contact their English Nature area team (Essex, Hertfordshire and London Team) and discuss the proposal informally. The area team will be able to advise whether they consider the land to be suitable and, if so, the sort of management it might require….. The local authority should consult local communities and voluntary conservation bodies such as the county Wildlife Trust and put together outline management proposals for the site, making it clear what the long term objectives are. Thought should be given as to how the desired management of the site could be funded and any costs involved. The local authority then needs to write formally to the English Nature area team to the effect that it intends to make the LNR declaration" (Natural England, 2006).

2.4 Summary

- Policy at the national, regional and local level seeks to conserve and maintain natural environmental features, and specific policies related to, for example, ancient woodland are outlined. Brentwood Borough is seeking to ensure consistency with PPS9 by conserving and maintaining natural environmental features as an integral component of social and economic development.
- The Biodiversity Action Plan sets out species and habitats that should be a priority throughout the County of Essex. Of the 25 species requiring action within County, Brentwood Borough contains 9 of these species. The county contains 10 habitats that require action, and Brentwood Borough has 6 of these priority habitats.
- There are 3 Sites of Special Scientific Interest in the Borough of Brentwood – Thorndon Park; The Coppice, Kelvedon Hatch; and Curtismill Green.
- Thorndon Park SSSI has a high proportion of favourable habitats, action is required to improve parts of the SSSI with unfavourable declining and unfavourable no change.
- The Coppice, Kelvedon Hatch SSSI is a favourable site but there is scope for improvement with particular emphasis on site maintenance.
- Curtismill Green SSSI, categorised as unfavourable no change, is not being adequately conserved and will fail to meet a favourable condition.
- There are no National Nature Reserves in the Borough of Brentwood.
- Brentwood Adopted Replacement Local Plan identifies Hutton Country Park as a Local Nature Reserve but the site is not listed as a Local Nature Reserve by Natural England. The designation of the site should be confirmed with Natural England.

3. LANDSCAPE CHARACTER

3.1 Introduction

Since the end of the ice-age over 10,000 years ago, the processes and patterns of landform, land cover and land use change have combined to create the contemporary appearance of the Essex landscape. The landscape includes visible physical components such as landform, vegetation, land use, settlement; visible spatial components, for example scale, pattern, texture; and non visible components which could include sound and cultural associations. Successive phases of human activity have influenced the development and character of the landscape in different ways.

Essex is a county of low hills and undulating valleys, with extensive areas of low flat land near to the coast. The altitude rises very gently from the coast toward the north-west, reaching approximately 30m around Chelmsford and just over 130m to the west of Saffron Walden. This gentle rise is interrupted by a series of low hills and ridges, the highest of which is Danbury at 116m. The county has a large number of rivers, largely as a consequence of the proportion of clay soils. These are an important part of the county's topography, character and identity.

The Essex coast forms part of the Greater Thames complex of estuaries and stretches for over 300 miles. It is of international importance for nature conservation and supports an abundance of birds and wildlife. The coast contains a number of extensive rural landscapes and houses many archaeological and historical features.

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 then allows the classification of the landscape into areas that share common combinations of components (Landscape Character Types), and single, unique areas which are discrete geographical areas of a landscape type (Landscape Character Areas) (Essex Landscape Character Assessment, Essex County Council, July 2002).

3.2 Policy Context

A. National Context

i) National planning policies are published by the Department for Communities and Local Government in Planning Policy Statements (PPS), which are gradually replacing Planning Policy Guidance Notes (PPG). In respect of this topic, national guidance is presented in three documents:

- PPS1 Delivering Sustainable Development (2005) states that policies should be based on a proper assessment of the character of the surrounding built and natural environment, and should take account of the defining characteristics of each local area and consider the protection of the wider countryside and the impact of development on landscape quality.
- PPG7 Sustainable Development in Rural Areas contains a specific section on the character of the countryside and makes reference to the Character of England Map which contains information on landscape, wildlife and natural features. It states that the character approach "should help in accommodating necessary change without sacrificing local character. It can help ensure that development respects and enhances the distinctive character of the land and the built environment."

- PPG15 Planning and the Historical Environment (1994) states that in the countryside, the details of patterns of fields and farms, of hedgerows and walls, and of hamlets and villages are among the most highly valued aspects of our environment. It notes that "the physical survivals of our past are to be valued and protected for their own sake, as a central part of our cultural heritage… their presence adds to the quality of our lives, by enhancing the familiar and cherished local scene and sustaining the sense of local distinctiveness which is so important an aspect of the character of our towns, villages and countryside."

ii) Landscape Assessment emerged in the 1980s as a tool to separate the classification and description of landscape character (what makes one area 'different' or 'distinct' from another) from landscape evaluation. During recent years emphasis has been placed on the role of landscape character and the process has become known as Landscape Character Assessment (LCA). Assessments have been based upon the Landscape Character Assessment Guidance for England and Scotland, published by the Countryside Agency in 2002.

iii) The Rural White Paper (2000), Our Countryside: The Future – A Fair Deal for Rural England deals with the importance of understanding, evaluating and protecting countryside character and diversity. In particular it stresses the need to find ways of "ensuring that the valued features and attributes of the whole countryside are conserved and enhanced". The White Paper cites the guidance on landscape character assessment as a means to help those carrying out character assessment at sub-regional level, using the national character map as a starting point and guide as well as a tool for local authorities to maintain the local countryside and its distinctive features.

B. Regional / County Context

i) Draft East of England Plan

The Draft East of England Plan, prepared by the East of England Regional Assembly (EERA), was submitted to Government in December 2004. Following a period of public consultation the Plan was subject of an Examination in Public (EiP) between November 2005 and March 2006. The Report of the EiP Panel was published in June 2006. In December 2006 the Secretary of State published Proposed Changes to the Draft Plan for a period of public consultation to March 2007. The final Plan is expected to be published by Government by summer 2007.

The East of England region contains 22 different countryside character areas and there are dramatic and often sharp contrasts in the landscape range. Policy ENV2 in the RSS (Regional Spatial Strategy for the East of England, East of England Regional Assembly, 2004) states that the diversity and local distinctiveness of landscape character throughout the East of England should be protected and enhanced by use of area-wide strategies based on character assessments in order to set long-term goals for landscape change, particularly in the regional growth areas identified within the RSS. Further, Policy SS8: Land in the Urban Fringe seeks the enhancement, effective management and appropriate use of land in the urban fringe.

ii) Essex and Southend-on-Sea Replacement Structure Plan, Adopted April 2001

The Essex and Southend-on-Sea Replacement Structure Plan was adopted in April 2001. The Planning and Compulsory Purchase Act 2004 introduced a 'new' statutory plans

system. The transitional arrangements for the 'new' system provide for the Adopted Structure Plan policies to be "saved" to 28th September 2007. Beyond that date policies of the Plan will cease to have effect unless they are "saved" by the Secretary of State. The Secretary of State has published a protocol on the procedures for saving Structure Plan policies. The protocol requires the Regional Planning Body to make requests for extending the life of Structure Plan policies to the Secretary of State by 1st April 2007. Such requests will be considered in the light of criteria set out in PPS11 paragraph 2.57.

Policy NR4 of the Essex and Southend-on-Sea Replacement Structure Plan (April 2001) states that until a Landscape Character Assessment has been completed, Special Landscape Areas will be taken to identify areas where conservation or restoration of existing character should be given high priority. For instance, the Maldon District Replacement Local Plan (November 2005) states that when completed, the Landscape Character Assessment for the District will be used in conjunction with the Local Plan's policy on Special Landscape Areas (Policy CC6). This policy states that permission will not be given for development unless its location, sitting, design, materials and landscaping conserve or restore the character of the area in which the development is proposed.

C. Brentwood Context

i) The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). Relevant policies within the Local Plan are:

- Policy C10 – Special Landscape Areas states that "a Landscape Character Assessment should be prepared for the Brentwood Borough Council administrative area, identifying the particular character of different localities within the countryside. Until such an assessment has been completed, Special Landscape Areas, where they are defined in this Local Plan, will be taken to identify areas where, in the interim, conservation or restoration or existing character should be given high priority."
- Policy C11 – Ancient Landscapes and Historic Parks and Gardens, states that, "the Council will seek to conserve, enhance and manage Ancient Landscapes and designated parks and gardens of Special Historic Interest. Development which would damage the character or appearance of an ancient landscape or of a park or garden of Special Historic Interest or its setting will not be permitted."

3.3 Current Baseline Information

A. Landscape Character Assessment

Three Landscape Character Types represented by 9 Landscape Character Areas have been identified in Brentwood Borough by The Braintree, Brentwood, Chelmsford, Maldon and Uttlesford Landscape Character Assessment (Chris Blandford Associates, September 2006). The Landscape Character Types are:

- River Valley - this Landscape Character Type is represented by one Landscape Character Area in Brentwood – the Roding River Valley. The key characteristics of this Landscape Character Type are:
  - V-shaped or U-shaped landform which dissects Boulder Clay/Chalky Till plateau.
  - Main river valley supplied by several tributaries.
  - Flat or gently undulating valley floor.
  - Wooded in places.

- Wooded Farmland - this Landscape Character Type is represented by 7 Landscape Character Areas in Brentwood - Blackmore Wooded Farmland, Doddinghurst Wooded Farmland, Little Warley Wooded Farmland, Heybridge Wooded Farmland, Great Warley Wooded Farmland, Ingrave and Herongate Wooded Farmland, and Weald Wooded Farmland. The key characteristics of this Landscape Character Type are:
  - Elevated undulating hills or ridges and slopes
  - Mixture of arable and pasture farmland
  - Pockets of common and pasture
  - Views to wooded horizons
  - Well wooded with blocks of mature mixed and deciduous woodland (including areas of ancient and semi-natural woodland); copses, hedges and mature single trees
  - Mature field boundaries
  - Framed views to adjacent character areas
  - Enclosed character in places
  - Network of quiet, often tree-lined narrow lanes

- Fenland - this Landscape Character Type is represented by one Landscape Character Area in Brentwood – Horndon Fenland. The key characteristics of this Landscape Character Type are:
  - Level relief
  - Open, exposed landscape
  - Large-scale arable and pasture farmland
  - Gappy hedges
  - Linear roads on causeways

The key characteristics and issues for each of these landscape character areas, together with their sensitivities to change and suggested planning and management guidelines are described below.

1) Roding River Valley - a River Valley Landscape

The key characteristics of this Landscape Character Area are,

- Gently undulating slopes of the Roding Valley
- Linear patches of woodland lining the valley sides.
- Mature, treed field boundaries.
- Dispersed settlement pattern.
- Sense of remoteness away from B175 and M25 corridors.

Key Planning and Land Management Issues

- Conversion of valley-side pasture to arable.
- Pressure of increasing traffic on minor rural roads.
- Noise and visual intrusion associated with the A128 and B175 and also the M25.
- Potential loss of mature field boundaries as a result of lack of management or further intensification of agricultural practices.

Sensitivities to Change

Sensitive landscape features within this character area include the linear woodlands lining the valley sides and mature, treed field boundaries, which are sensitive to changes in land management. Remote areas away from main road corridors are also sensitive to potential

new development as is the skyline of the valley slopes which may be particularly intrusive within views to the area from farmland to the north and south. There is relatively strong historic integrity as a result of a complex network of heaths and commons within the area (which are sensitive to changes in land management) extensive enclosed meadow along the banks of the River Roding and a dispersed settlement pattern, comprising isolated manors, farms and very small hamlets.

Suggested Landscape Planning Guidelines

- Ensure any development on the valley sides is small-scale, responds to historic settlement pattern, form and building materials.
- Maintain cross-valley views.
- Ensure that new woodland planting is designed to enhance existing landscape character and species composition reflects local provenance.
- Conserve the largely undeveloped character of the area.
- Conserve the largely undisturbed and tranquil nature of the area.

Suggested Land Management Guidelines

- Conserve and manage areas of ancient and semi-natural woodland upon the valley slopes as important historical, landscape and nature conservation features.
- Conserve and restore pastures.
- Conserve and manage the existing hedgerow pattern, and strengthen where appropriate through planting.
- Conserve the predominantly rural character of the area.

2) Blackmore Wooded Farmland (shared with Chelmsford Borough) – a Wooded Farmland Landscape

The key characteristics of this Landscape Character Area are:
- Undulating wooded farmland.
- Medium to large-scale patches of woodland interspersed with irregular arable fields.
- Mature hedgerows and deciduous treed field boundaries.
- Patches of smaller-scale pasture fields and pony paddocks.
- Views to wooded horizons.
- Several small hamlets and farmsteads lining routes through the area.
- Sense of tranquillity away from major roads.
- Network of narrow lanes.

Key Planning and Land Management Issues

- Pressure of increased traffic on major roads, rural and minor lanes.
- Potential for visually intrusive development around the edges of Chelmsford (for example within the floodplain of the River Wid to the west of Chelmsford).
- Noise and visual intrusion associated with A414, A12 and A1016 road corridors.
- Potential major road improvements (A414, A12 and A1016).
- Potential visually intrusive development of new farm buildings.
- Deterioration and eventual loss of mature treed hedgerows and single mature trees through lack of appropriate management.

Sensitivities to Change

Sensitive key characteristics and landscape elements within this character area include medium to large-scale patches of woodland, mature hedgerows and deciduous tree field boundaries, and patches of small-scale pasture fields and paddocks, which are sensitive to changes in land management and increases in traffic flow associated with new development. Historic integrity, resulting from a historic settlement pattern of dispersed villages, focussed on greens and commons and scattered farmsteads in an irregular field and woodland pattern, is similarly sensitive to large scale new development. Sensitive visible historic features also include Hylands Park and a few smaller areas of parkland attached to mansion houses. There are several important wildlife habitats within the area (including 18 sites of importance for nature conservation, comprising unimproved grassland woodland habitats and ancient woodland).

Suggested Landscape Planning Guidelines

- Conserve and enhance the landscape setting of Chelmsford town and Ingatestone village.
- Ensure that any appropriate new development responds to historic settlement pattern and uses materials, which are appropriate to local landscape character. Such development should be well integrated with the surrounding landscape.
- Conserve the mostly rural character of the area.
- Conserve views into the Wid valley from the eastern edge of the area.
- Conserve the setting of Hylands House and Park.
- Seek to screen visual detractors (such as major road corridors, for example with planted shelter belts).

Suggested Land Management Guidelines

- Conserve and manage the existing mature hedgerow network.
- Conserve, manage and enhance patches of woodland (consider the use of traditional methods, such as coppicing and pollarding where appropriate to locality and local landscape character).
- Conserve historic lanes and unimproved roadside verges.
- Plant half-standard trees within field hedgerow boundaries to succeed over mature trees.
- Introduce arable field margins as a means of ensuring that mature trees within hedgerows are not disturbed by ploughing.
- Conserve and enhance areas of semi-natural and ancient woodland as important heritage, nature conservation and landscape features.

3) Doddinghurst Wooded Farmland– a Wooded Farmland Landscape

The key characteristics of this Landscape Character Area are:
- Mature wooded farmland
- Patches of mature deciduous and mixed woodland
- Undulating, predominately arable farmland
- Mature, treed-field boundaries
- Tree-covered narrow lanes
- Small nucleated and linear villages
- Sense of tranquillity away from major A128 and A12 road corridors.

Key Planning and Land Management Issues

- Loss of mature field boundaries.
- Noise and visual intrusion associated with the main A128 and A12 road corridors.
- Increased pressure on historic lanes and minor roads.
- Potential expansion of Doddinghurst, Stondon Massey, Kelvedon Hatch and Mountnessing settlements.

Sensitivities to Change

Sensitive key characteristics and landscape elements within this character area include patches of mature deciduous and mixed woodland, mature-treed field boundaries and tree-covered narrow lanes, which are sensitive to changes in land management. Open views to wooded horizons and views into and along the Roding Valley (from the northern edges of the area) are sensitive to potential new development. There is a highly dispersed historic settlement pattern of isolated manors, farms and hamlets, which is particularly sensitive to large-scale new development. Sensitive visible historic features also include a few parks (some of which are Medieval in origin) and areas of ancient woodland. There are also several important wildlife habitats within the area (including 10 sites of importance for nature conservation, predominantly comprising ancient woodland).

Suggested Landscape Planning Guidelines

- Ensure that the design of new agricultural buildings reflects the local vernacular style and uses materials which are appropriate to local landscape character.
- Conserve the mostly rural character of the area.
- Ensure that any new development responds to the historic settlement pattern and uses materials which are appropriate to local landscape character.
- Seek ways to ensure that any potential new development at the fringes of Brentwood or the other smaller settlements is not visually intrusive within the surrounding landscape setting.
- Conserve the landscape setting of settlements within the character area.

Suggested Land Management Guidelines

- Conserve and manage areas of ancient and semi-natural woodland within the area as important historical, landscape and nature conservation features.
- Conserve and manage the existing hedgerow pattern, and strengthen where appropriate through planting.
- Seek ways to mitigate the visual impact of the A12 and A128 road corridors through introducing news and strengthening existing parallel shelter belts.
- Conserve historic, tree lined and covered lanes and unimproved roadside verges.
- Establish arable field margins as important nature conservation habitats.

4) Little Warley Wooded Farmland– a Wooded Farmland Landscape

The key characteristics of this Landscape Character Area are:

- Undulating, sloping wooded farmland containing the expansive Thorndon Country Park.
- Patchwork of mixed and deciduous semi-natural and plantation woodland, interspersed with commons, pasture and arable fields.

- Important recreation and nature conservation resource.
- Sense of enclosure provided by patches of woodland, framing views to surrounding wooded horizons.
- Sense of tranquillity at distance from the A127 and A128 road corridors and Brentwood urban edge.
- Scattered settlement pattern.
- Network of quiet, narrow rural lanes.

Key Planning and Land Management Issues

- Pressure of increased traffic on major roads, rural and minor lanes.
- Potential for visually intrusive development at the southern fringes of Brentwood urban area.
- Noise and visual intrusion associated with A127 and A128 road corridors.
- Potential major road improvements to the A127.
- Potential visually intrusive development of new farm buildings.
- Deterioration and eventual loss of mature woodland, single trees and hedgerows.
- Management of Thorndon Country Park as a recreation and nature conservation resource.

Sensitivities to Change

Sensitive key characteristics and landscape elements within this character area include a patchwork of mixed and deciduous semi-natural and plantation woodland, interspersed with commons and pastures and sensitive to changes in land management. The overall sense of tranquillity within parts of the character area (away from main road corridors) and the network of narrow lanes are also sensitive to change and potential new development, or increases in traffic flow associated with such development. Open views to wooded horizons are sensitive to potential new development, which may interrupt or block such views. There is a sense of historic integrity, resulting from a dispersed and linear historic settlement pattern.

Suggested Landscape Planning Guidelines

- Conserve and enhance the landscape setting of Brentwood urban area.
- Ensure that any appropriate new development responds to historic settlement pattern and uses materials, which are appropriate to local landscape character. Such development should be well integrated with the surrounding landscape.
- Conserve the mostly rural character of the area.
- Conserve existing views across the area and to adjacent Landscape Character Areas.
- Conserve the setting of Thorndon Hall and Park.
- Seek to screen visual detractors (such as A127 road corridor, for example with planted shelter belts).

Suggested Land Management Guidelines

- Conserve and manage the existing mature hedgerow network.
- Conserve, manage and enhance patches of woodland (consider the use of traditional methods, such as coppicing and pollarding where appropriate to locality and local landscape character).
- Conserve historic lanes and unimproved roadside verges.

- Plant half-standard trees within field hedgerow boundaries to succeed over mature trees.
- Introduce arable field margins as a means of ensuring that mature trees within hedgerows are not disturbed by ploughing.
- Conserve and enhance areas of semi-natural and ancient woodland as important heritage, nature conservation and landscape features.
- Conserve and manage the diverse patchwork of common and grassland habitats.

5) Heybridge Wooded Farmland (shared with Chelmsford Borough) – a Wooded Farmland Landscape

The key characteristics of this Landscape Character Area are:
- Mature, undulating wooded farmland lining the B1002 road and railway corridor.
- Mixture of medium to large-scale predominately arable fields with mature treed field boundaries.
- Single mature trees and vegetation-lined ditches.
- Strong linear settlement pattern through the centre of the area, becoming more scattered at distance from the road/railway corridor.
- Landmark halls and churches.
- Narrow, often tree-lined rural lanes.

Key Planning and Land Management Issues

- Noise and visual intrusion associated with the B1002 and A12 roads and main railway corridor.
- Potential visually intrusive expansion of the urban edges of Brentwood, Mountnessing and Ingatestone.
- Pressure of increased traffic on rural and minor lanes.
- Potential visually intrusive farm buildings.

Sensitivities to Change

Sensitive features within this character area include mature treed field boundaries, single mature trees and vegetation-lined ditches, which are sensitive to changes in land management. Open views to wooded horizons are sensitive to potential new development, which may interrupt or block such views. Similarly sensitive to change from new development and subsequently the newly created increases in traffic as a result, is the linear historic settlement pattern and the presence of several areas of co-axial fields as well as several important wildlife habitats within the area (including 13 SINCs, predominantly comprising ancient woodland).

Suggested Landscape Planning Guidelines

- Conserve the mostly rural character of the area.
- Ensure that any appropriate new development responds to historic settlement pattern and uses materials, which are appropriate to local landscape character. Such development should be well integrated with the surrounding landscape.
- Maintain views to landmark churches and halls and also to wooded horizons.
- Maintain open views into the Wid valley from the northern part of the character area.
- Ensure that new farm buildings are sensitively designed and located within the landscape in accordance with existing landscape character.

- Seek measures to screen visually intrusive urban edges around Brentwood, Mountnessing and Ingatestone.

Suggested Land Management Guidelines

- Conserve and enhance mature hedgerow trees.
- Conserve and manage areas of woodland (consider the use of traditional methods, such as coppicing and pollarding), in keeping with local landscape character.
- Conserve and enhance areas of semi-natural and ancient woodland as important heritage, nature conservation and landscape features.
- Conserve historic lanes and unimproved roadside verges.
- Introduce arable field margins as a means of ensuring that mature trees within hedgerows are not disturbed by ploughing.

6) Great Warley Wooded Farmland– a Wooded Farmland Landscape

The key characteristics of this Landscape Character Area are:
- Strongly undulating wooded farmland/wooded hills.
- Extensive patches of woodland.
- Small-scale field pattern with mature treed field boundaries.
- Small-scale settlement pattern comprising small historic farmsteads and hamlets.
- Narrow, quiet sinuous rural lanes.
- Noise and movement associated with the M25 and A127 road corridors.
- Strong sense of place and orientation provided by views across Thames Chase to the west towards London and North Kent.

Key Planning and Land Management Issues

- Loss of mature field boundaries.
- Noise and visual intrusion associated with the main M25 and A127 road corridors.
- Increased pressure on historic lanes and minor roads.
- Potential visually intrusive expansion of Brentwood urban area. Loss of mature woodland.
- Potential expansion or widening of the M25 road corridor.

Sensitivities to Change

Features sensitive to changes in land management within this character area include extensive patches of woodland, mature treed field boundaries, mature deciduous trees and pockets of improved meadows, streams and ponds. The network of narrow tree-lined lanes is also sensitive to change and potential new development, or increases in traffic flow associated with such development. There is a dispersed historic settlement pattern (around commons) and other sensitive historic features include smaller areas of ancient woodland, copses and shaws scattered across the landscape, several small lakes including dammed river valleys and fields of medieval origin. There are also several important wildlife habitats consisting of 7 areas of ancient woodland.

Suggested Landscape Planning Guidelines

- Ensure that the design of new agricultural buildings reflects the local vernacular style and uses materials which are appropriate to local landscape character.

- Conserve the mostly rural character of the area.
- Ensure that any new development responds to the historic settlement pattern and uses materials which are appropriate to local landscape character.
- Seek ways to ensure that potential new development at the fringes of Brentwood or the other smaller settlements is not visually intrusive within the surrounding landscape setting.
- Conserve the southern landscape setting of Brentwood.
- Conserve open views westwards across the Thames Chase towards London.
- Conserve views to wooded horizons within adjacent wooded farmland Landscape Character Areas.
- Seek ways to screen and mitigate the visual impact of the M25 and A127 road corridors through introducing new and strengthening existing parallel shelter belts.

Suggested Land Management Guidelines

- Encourage linking of small copses and shaws, where appropriate to landscape character.
- Conserve and manage areas of ancient and semi-natural woodland within the area as important historical, landscape and nature conservation features.
- Conserve and manage the existing hedgerow pattern, and strengthen where appropriate through planting.
- Retain and encourage the development of hedgerow trees, particularly existing oaks through sensitive management and replanting where necessary.
- Conserve historic, tree lined and covered lanes and unimproved roadside verges.
- Establish arable field margins as important nature conservation habitats.

7) Ingrave and Herongate Wooded Farmland– a Wooded Farmland Landscape

The key characteristics of this Landscape Character Area are:
- Gently sloping wooded farmland.
- Medium to large-scale field pattern.
- Fields delineated by mature hedged field boundaries.
- Patches of mature deciduous woodland dotted across the landscape.
- Small-scale linear and dispersed settlement pattern.
- Sense of tranquillity disturbed by noise and movement associated with the A127 and A128 road corridors.

Key Planning and Land Management Issues

- Potential for visually intrusive development at the southern fringes of Brentwood urban area and also at the edge of Ingrave and Herongate and Billericay (outside the Study Area to the northeast).
- Noise and visual intrusion associated with A127 and A128 road corridors.
- Potential road improvements to the A127 and A128.
- Potential visually intrusive development of new farm buildings.
- Deterioration and eventual loss of mature woodland, single trees and hedgerows.

Sensitivities to Change

Sensitive key characteristics and landscape elements within this character area include mature hedges field boundaries and patches of mature deciduous woodland dotted across

the landscape ditches which are sensitive to changes in land management. Open views to wooded horizons and to the adjacent Thorndon Country Park are sensitive to potential new development. Eight small areas of ancient woodland also provide important wildlife habitats within the character area.

Suggested Landscape Planning Guidelines

- Conserve and enhance the landscape setting of Brentwood urban area and the settlements of Herongate and Ingrave.
- Ensure that any appropriate new development responds to historic settlement pattern and uses materials, which are appropriate to local landscape character. Such development should be well integrated with the surrounding landscape.
- Conserve the mostly rural character of the area.
- Conserve existing views across the area and to adjacent Landscape Character Areas.
- Conserve the setting of Thorndon Hall and Park.
- Seek to screen visual detractors (such as A127 and A128 road corridors) with planted shelter belts).

Suggested Land Management Guidelines

- Conserve and manage the existing mature hedgerow network.
- Conserve, manage and enhance patches of woodland (consider the use of traditional methods, such as coppicing and pollarding where appropriate to locality and local landscape character).
- Plant half-standard trees within field hedgerow boundaries to succeed over mature trees.
- Introduce arable field margins as a means of ensuring that ploughing does not disturb mature trees within hedgerows.

8) Weald Wooded Farmland– a Wooded Farmland Landscape

The key characteristics of this Landscape Character Area are:
- Swathe of relatively open commons
- Wooded rolling hills and slopes
- Narrow, tree-lined roads
- Intricate network of woodland and grassland within Weald Country Park
- Sense of tranquillity away from main road corridors

Key Planning and Land Management Issues

- Pressure of increased traffic on major roads, rural and minor lanes.
- Potential for visually intrusive development around the edges of Brentwood.
- Noise and visual intrusion associated with the M25, A12, A1023 and A128 road corridors.
- Potential major road improvements (M25, A12 and A128).
- Potential visually intrusive development of new farm buildings.
- Deterioration and eventual loss of mature treed hedgerows and single mature trees through lack of appropriate management.

Sensitivities to Change

Sensitive features within this character area include relatively open commons, narrow tree-lined roads, and an intricate network of woodland and grassland within Weald Country Park (including several single mature parkland trees), which are sensitive to changes in land management. There is a sense of historic integrity which is sensitive to development, with the northern (and only surviving) heavily wooded portion of the medieval Royal Forest of Hainault within the area, bounding extensive historic parklands of Weald Park, several small lakes and areas of ancient woodland and historic fields of medieval or earlier origin.

Suggested Landscape Planning Guidelines

- Conserve and enhance the landscape setting of small settlements.
- Ensure that any appropriate new development responds to historic settlement pattern and uses materials which are appropriate to local landscape character. Such development should be well integrated with the surrounding landscape.
- Conserve the mostly rural character of the area.
- Conserve and enhance Weald Country Park.
- Conserve and enhance the landscape setting of Brentwood urban area.

Suggested Land Management Guidelines

- Conserve and manage the existing mature hedgerow network.
- Conserve, manage and enhance patches of woodland (consider the use of traditional methods, such as coppicing and pollarding where appropriate to locality and local landscape character).
- Conserve historic lanes and unimproved roadside verges.
- Plant half-standard trees within field hedgerow boundaries to succeed over mature trees.
- Introduce arable field margins as a means of ensuring that mature trees within hedgerows are not disturbed by ploughing.
- Conserve and enhance areas of semi-natural and ancient woodland as important heritage, nature conservation and landscape features.

9) Horndon Fenland – a Fenland Landscape

The key characteristics of this Landscape Character Area are:
- Large arable and pasture fields
- Predominately flat topography
- Mature hedgerow field boundaries (sometimes gappy), which contain several single mature trees
- Relatively sparse settlement pattern
- Views to surrounding wooded hills to the North
- Long distance views to pylons and Tilbury power station to the south.

Key Planning and Land Management Issues

- Visually intrusive extensions to the small industrial park (west of West Horndon).
- Potential expansion of West Horndon settlement.
- Highway improvements or potential widening of A127 (to the north of the area).

- Potential future decline and loss of field boundaries through lack of management and further introduction of intensive agricultural practices.
- Loss of hedgerow trees due to Dutch Elm disease and changing farming practices.
- Potential new pylons/utilities developments to the south.

Sensitivities to Change

Sensitive key characteristics and landscape elements within this character area include mature hedgerow field boundaries, often containing single mature deciduous trees. The flat and open nature of parts of the character area, combined with the fact that it is overlooked by wooded hills to the north and east, determines that the landscape is visually sensitive to new development (in particular tall development). There is a sense of historic integrity, resulting from historic field boundaries (drains) and distinctive tall hawthorn/elm hedgerows, which follow wide verged historic lanes and tracks across the area and are sensitive to changes in land management.

Suggested Landscape Planning Guidelines

- Conserve the relatively sparse settlement pattern and generally rural character of the area.
- Ensure that any appropriate new development responds to the existing settlement pattern and uses materials which are appropriate to local landscape character.
- Conserve the setting of West Horndon, through careful consideration of the existing landscape structure.
- Conserve views to landmark churches to the north.
- Seek to screen visual detractors (such as the edges of the small industrial estate in West Horndon, and large agricultural buildings).

Suggested Land Management Guidelines

- Conserve and enhance the existing hedgerow network by planting hedgerow species appropriate to local landscape character.
- Establish arable field margins as important nature conservation habitats.
- Seek ways to mitigate the visual impact of the railway and A127 corridor through introducing new, and strengthening, existing parallel shelterbelts where appropriate.
- Introduce new woodland planting in the form of shaws and copses, as well as hedgerow trees.

3.4 Summary

- the policy emphasis is placed on the role of Landscape Character Assessment to identify distinctive landscape character types and areas, their sensitivities to change, and appropriate landscape planning and land management guidelines;
- 3 Landscape Character Types have been identified in Brentwood Borough, represented by 9 Landscape Character Areas, as follows,

Landscape Character Type	Landscape Character Area
River Valley	Roding River Valley
Wooded Farmland	Blackmore Wooded Farmland Doddinghurst Wooded Farmland Little Warley Wooded Farmland Heybridge Wooded Farmland Great Warley Wooded Farmland Ingrave and Herongate Wooded Farmland Weald Wooded Farmland
Fenland	Horndon Fenland

4. AIR QUALITY

4.1 Introduction

The quality of our air affects both human health and life quality, and the natural environment. Poor air quality can also affect the health of our ecosystems, and can adversely affect our built cultural heritage. Local air quality is affected by emissions from industrial activity, airports, power stations and natural sources, but road transport accounts for around 40% of UK nitrogen dioxide emissions. Additionally, diesel vehicles are a significant source of the emissions of fine particulates.

4.2 Policy Context

A. International/National Context

i) National planning policies are published by the Department for Communities and Local Government in Planning Policy Statements (PPS), which are gradually replacing Planning Policy Guidance Notes (PPG). In respect of air quality, national guidance is presented in two PPSs:

- PPS 1: Delivering Sustainable Communities states that development plan policies should take account of environmental issues such as the mitigation of the effects of climate change through the reduction of greenhouse gas emissions and the use of renewable energy and air quality and pollution.
- PPS23: Planning and Pollution Control notes that the Government is committed to the 'precautionary principle' - "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation". The principle should be invoked when there is reason to believe that harmful effects may occur to either humans, animals or the environment or where there is scientific uncertainty in the potential effects of a proposed development. The PPS makes Local Planning Authorities (LPAs) aware that decisions on planning applications can have an immediate impact on the environment, and that LPAs should take account of the risks of, and from, pollution.

  Appendix A, within PPS23, sets out 'Matters for Consideration in Preparing Local Development Documents and Taking Decisions on Individual Planning Applications'. 16 matters are listed as being worthy of consideration in the preparation of development plan documents. These include:

  - possible impact of pollution, both direct and indirect, on land use,
  - potential sensitivity of an area to adverse effects from pollution,
  - environmental benefits that the development might bring,
  - economic and wider social need for the development,
  - existing and likely future air quality in the area, and,
  - a number of other matters related to statutory standards, objectives or control.

ii) The EU Air Quality Framework Directive 1996 (96/62/EC), together with four daughter directives (see Table 11), set out limit values for a series of pollutants which are mandatory for all member states to report progress upon.

Table 11: EU AIR quality framework directive daughter directives (Air Quality Framework Directive, 1996)

Year	Protocol	Entered into force
1999	To abate acidification, eutrophication and ground-level ozone	17 May 2005
1998	Persistent organic pollutants (POPs)	23 October 2003.
1998	Heavy metals	29 December 2003.
1994	Further reduction of sulphur emissions	5 August 1998.
1991	Control of emissions of volatile organic compounds or their trans-boundary fluxes	29 September 1997
1988	Control of nitrogen oxides or their trans-boundary fluxes	14 February 1991
1985	Reduction of sulphur emissions or their trans-boundary fluxes by at least 30%	2 September 1987
1984	Long-term financing of the cooperative programme for monitoring and valuation of the long-range transmission of air pollutants in Europe (EMEP)	28 January 1988.

Iii) The Environment Act 1995 requires local authorities to carry out studies of air quality in their areas to assess whether they are likely to exceeded air quality standards by 2005. These standards have been set by the Government in the National Air Quality Strategy (NAQS) (2000), which looks at major pollutants on a national scale, and which either conform to, or are more stringent than, the limit values set out in the EU framework.

iv) The National Air Quality Strategy (2000), sets out the Government's air quality targets for Nitrogen dioxide, Sulphur dioxide, ozone, Carbon monoxide, particulates, lead, 1,3 - butadiene and benzene. These targets are based on risk to human health. As a statutory duty under Part IV of the Environment Act 1995, each District/Borough Council has been carrying out an annual Air Quality Review and Assessment (AQRA) to determine the levels of air pollution in their area, with annual reporting to DEFRA.

Where areas fail to meet the standards, the Environment Act 1995 requires Air Quality Management Areas (AQMAs) to be established and specific action plans implemented to improve air quality in those areas. The quality of air is constantly changing and so to be of any value, monitoring needs to occur continuously at several sites to measure trends over space and time.

The air quality standards from the National Air Quality Strategy are set out in Table 12

Table 12: NAQS Air Quality Standards

Pollutant	Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25µg/m^3 (5ppb) 5µg/m3 (1.5ppb)	running annual mean annual mean	31 December 2003 31 December 2010
1,3-Butadiene	2.25µg/m^3 (1ppb)	running annual mean	31 December 2003
Carbon monoxide	10mg/m^3 (8.6ppm)	running 8 hour mean	31 December 2003
Lead	0.5µg/m^3	annual mean	31 December 2004
	0.25µg/m^3	annual mean	31 December 2008
Nitrogen dioxide	200µg/m^3 (105ppb) not to be exceeded more than 18 times a year	1 hour mean	31 December 2005
	40µg/m^3 (21ppb)	annual mean	31 December 2005
Particles (PM_{10})	50µg/m^3 not to be exceeded more than 35 times a year	24 hour mean	31 December 2004
	40µg/m^3	annual mean	31 December 2004
Sulphur dioxide	350µg/m^3 (132ppb) not to be exceeded more than 24 times a year	1 hour mean	31 December 2004
	125µg/m^3 (47ppb) not to be exceeded more than 3 times a year	24 hour mean	31 December 2004
	266µg/m^3 (100ppb) not to be exceeded more than 35 times a year	15 minute mean	31 December 2005

(The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. DEFRA in partnership with the Scottish Executive, The National Assembly for Wales and the Department of the Environment for Northern Ireland, 2000.)

The Air Quality Strategy Addendum 2003 (see Table 13) proposed the following additional objectives:

Table 13: Air Quality Strategy Addendum 2003

Pollutant	Objective		Date to be achieved by
	Concentration	Measured as	
Particles (PM_{10}) (NB the objective for London is given in brackets)	50 µg m^{-3} not to be exceeded more than 7 (10) times a year	24 hour mean	31 Dec 2010
	20 (23) µg m^{-3}	Annual Mean	31 Dec 2010

Taken from Third Round Updating and Screening Assessment for Brentwood Borough Council April 2006

v) The National PSA target is:
- To improve air quality by meeting Air Quality Strategy targets for carbon monoxide, lead, nitrogen dioxide, particles, sulphur dioxide, benzene and 1,3 - butadiene.

B. Regional/County Context

i) East of England Plan December 2004

The Draft East of England Plan, prepared by the East of England Regional Assembly (EERA), was submitted to Government in December 2004. Following a period of public consultation the Plan was subject of an Examination in Public (EiP) between November 2005 and March 2006. The Report of the EiP Panel was published in June 2006. In December 2006 the Secretary of State published Proposed Changes to the Draft Plan for a period of public consultation to March 2007. The final Plan is expected to be published by Government by summer 2007.

A relevant policy in the Draft Plan, as submitted in December 2004 is Policy ENV7: Air Quality. The policy states that local development documents and local transport plans will include objectives and policies that seek to reduce or reverse the growth of motor traffic, encourage infrastructure for cleaner transport fuels, ensure that new development does not exacerbate air quality in existing and potential air quality management areas, seek to mitigate existing and potential air quality pollution problems, and pay particular attention to any potential effects on wildlife.

ii) Essex & Southend-on-Sea Replacement Structure Plan April 2001

The Essex and Southend-on-Sea Replacement Structure Plan was adopted in April 2001. The Planning and Compulsory Purchase Act 2004 introduced a 'new' statutory plans system. The transitional arrangements for the 'new' system provide for the Adopted Structure Plan policies to be "saved" to 28th September 2007. Beyond that date policies of the Plan will cease to have effect unless they are "saved" by the Secretary of State. The Secretary of State has published a protocol on the procedures for saving Structure Plan policies. The protocol requires the Regional Planning Body to make requests for extending the life of Structure Plan policies to the Secretary of State by 1st April 2007. Such requests will be considered in the light of criteria set out in PPS11 paragraph 2.57.

Relevant policies in the Adopted Plan, April 2001 are:

- Policy BE6: Polluting, Hazardous or Noisy Development makes clear that any new development involving potentially polluting activities will be assessed in relation to their impact upon existing land uses. If incompatibility exists then permission will not be given.
- Policy BE7: Minimising Pollution Impacts states that where the impacts of a proposed development are likely to be significant, the local planning authority will require developers to prepare an Environmental Assessment where appropriate. The proposed development will not be permitted if potential impacts can not be reduced to an acceptable level, or the cumulative impact caused by existing and proposed developments is deemed unacceptable in terms of EU Directives, UK legislation and advice from agencies.

iii) Air Quality Management Areas (AQMAs)

Air quality in Essex is generally good. Most industrial processes in Essex are concentrated along the Thames Estuary. The air quality in Essex is influenced by its close proximity to mainland Europe. There are currently 10 AQMAs within Essex, 8 of which were newly introduced in 2005. Seven of these are concentrated in Brentwood Borough, 2 in Colchester Borough and 1 in Chelmsford Borough.

A total of 43 AQMAs have been designated within the East of England region (see Table 14). Therefore, Brentwood has a significant proportion of the AQMAs designated in the region.

Table 14: AQMAs within the East of England

Council	Number of AQMAs	Pollutant
Bedford BC	4	SO_2, NO_2
Breckland DC	1	PM_{10}
Brentwood BC	7	NO_2
Broxbourne BC	3	NO_2, PM_{10}
Cambridge City	1	NO_2
Chelmsford	1	NO_2
Colchester	2	NO_2
Fenland DC	2	SO_2, PM_{10}
Hertsmere BC	6	NO_2
Kings Lynn and West Norfolk BC	2	NO_2, PM_{10}
Luton UA	2	NO_2
Mid Bedfordshire DC	1	SO_2
Norwich City	3	NO_2
South Bedfordshire DC	1	NO_2
St Albans City	3	NO_2
Three Rivers DC	5	NO_2

(Air Quality Archive, 2005)

Within Essex the primary elements of concern relate to pollution from transport, specifically nitrogen dioxide and particulates. The delivery of the particulate (PM_{10}) requirements of the 1995 Act are coordinated through the Essex Air Quality Consortium, which includes the Borough/District Environmental Health Offices; the County Council Environmental Strategy Team, and Highways and Transportation Directorate; Essex University; the British Airports Authority; and the Environment Agency.

C. Brentwood Context

i) Brentwood Replacement Local Plan Adopted August 2005

The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). One of the stated aims of the Local Plan is to protect the environment and the amenities of those living, working and visiting the area from the potential negative impacts of development. Relevant policies within the Local Plan are:

- Policy CP1: General Development Criteria requires any proposal to take full account of the need to conserve or enhance the character, appearance, biodiversity and historical or archaeological heritage of the site and the surrounding area. Appropriate compensatory measures would be required if there is a need for the development and there would be an associated harm to, or loss of, environmental habitats.
- Policy PC2: Hazardous Substances makes mention of the fact that development proposals involving the use, movement or storage of hazardous substances will

only be permitted within employment areas and then only where it would not give rise to an unacceptable risk to the health or safety of users of the site, neighbouring land or the environment.

- Policy PC7: Transport Pollution affirms that all new transport proposals and improvements to existing transport infrastructure and services will be assessed against their impact on air quality, noise levels and visual amenity, and will need to be designed so as to minimise any negative impacts and, where necessary, incorporate reasonable and appropriate mitigation measures.
- Policy PC8: Areas of Poor Air Quality states that in previously identified air quality management areas, development for residential or other sensitive uses will need to have regard to PPS23: Planning and Pollution Control and Local Air Quality Management Policy Guidance LAQM.PG(03). Commercial developments which would be likely to detrimentally impact further on air quality will not be permitted.

4.3 Current Baseline Information

A. Air Quality Management Areas (AQMAs)

Air Quality Management Areas (AQMAs) have to be imposed by Local Authorities in the UK if the objectives of The Air Quality Strategy for England, Scotland, Wales and N Ireland are not likely to be met by prescribed dates. This has led Brentwood Borough Council to declare 7 air quality management areas, as listed in Table 15.

Table 15: AQMAs Within Brentwood Borough And Their Associated Major Pollutants

AQMA	Pollutants
M25 / Nags Head Lane Junction	Nitrogen Dioxide (NO_2)
M25 / A12 Brook Street Roundabout	Nitrogen Dioxide (NO_2)
A12 / Greenshaw and Porters Close	Nitrogen Dioxide (NO_2)
A12 / Warescot Road / Hurstwood Avenue / Ongar Road	Nitrogen Dioxide (NO_2)
A12 / Roman Road, Mountnessing	Nitrogen Dioxide (NO_2)
A12 / Fryerning Lane, Pemberton Avenue and Trimble Close	Nitrogen Dioxide (NO_2)
A128 / A1023 Junction (Wilson's Corner)	Nitrogen Dioxide (NO_2)

Information Sourced from LAQM website (http://www.airquality.co.uk/archive/laqm/)

It is evident from the above table that the main pollutant of air within Brentwood is nitrogen dioxide (NO_2). Health Aspects of Air Pollution with Particulate Matter, Ozone and Nitrogen (WHO Working Group, 2003) states that although there are natural sources of NO_2 in an outside environment, over the last 50 years the majority of NO_2 in an outside environment is produced by motor vehicles. Hence, the AQMAs appear to be localised around busy junctions likely to experience at least some degree of congestion. In the UK, 40% of the total amount of NO_2 emissions was from vehicular traffic in 2003 (DEFRA 2005). Vehicle emissions can be responsible for an even greater proportion of total NO_2 emissions, as in, for example, London, where this emission type is responsible for 75% of emissions. Power stations and domestic activities are also responsible for the production of nitrogen dioxide. NO_2, along with other nitrogen oxides, are a precursor for a number of harmful secondary air pollutants, including nitric acid and photo oxidants such as ozone. Secondary pollutants, created by photochemical reactions, can take some time to form and are airborne, allowing them to be carried for great distances.

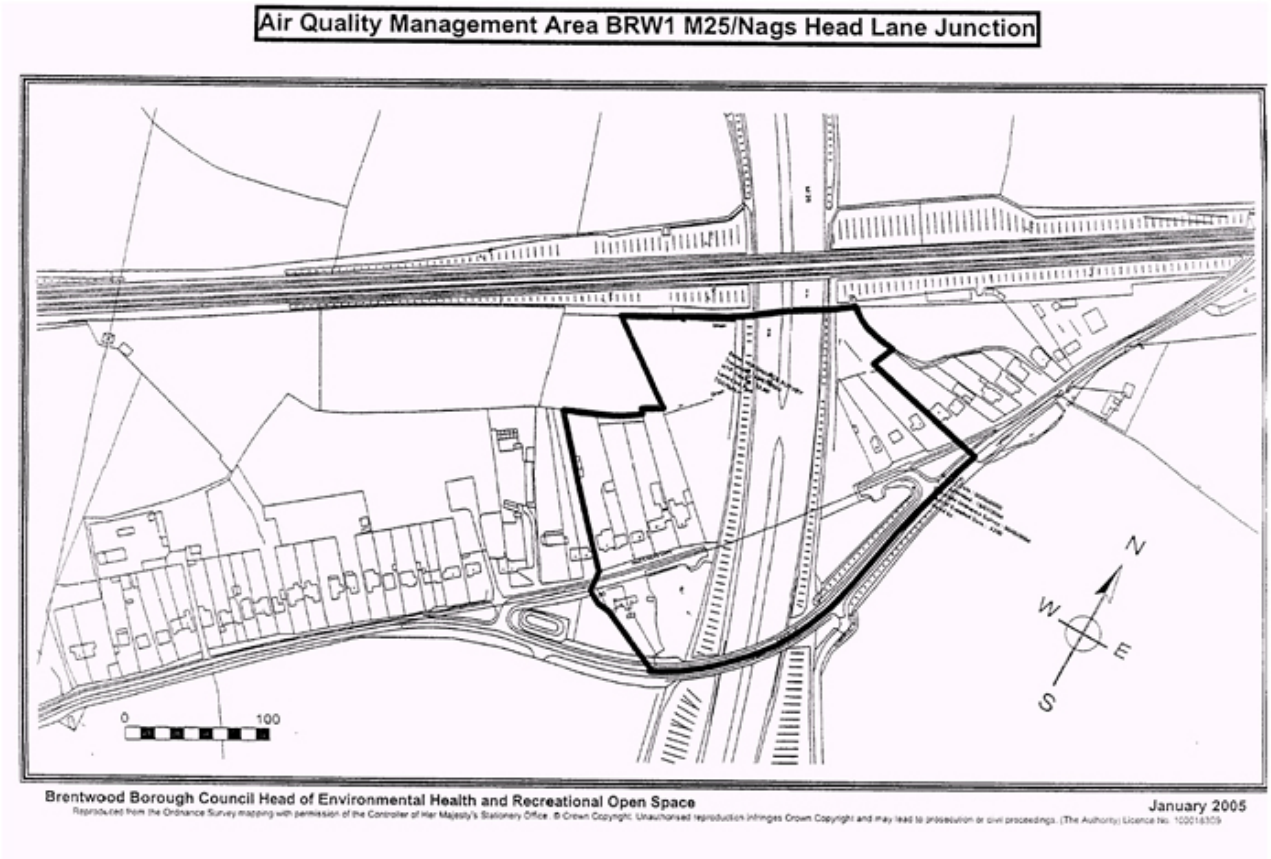
With regard to the protection of human health, the peak-hour average or 24 hour (daily) average NO_2 concentration can be used as a measure of direct short-term exposure. In

the case of long term exposure to NO_2 and its secondary pollutants, effective implementation of a WHO guideline is most appropriate in order to minimise any potential health risk. The current WHO guideline values for NO_2 are a 1-hour level of 200µg/m^3 and an annual average of 40µg/m^3.

B. Spatial Extent of Brentwood Borough's AQMAs

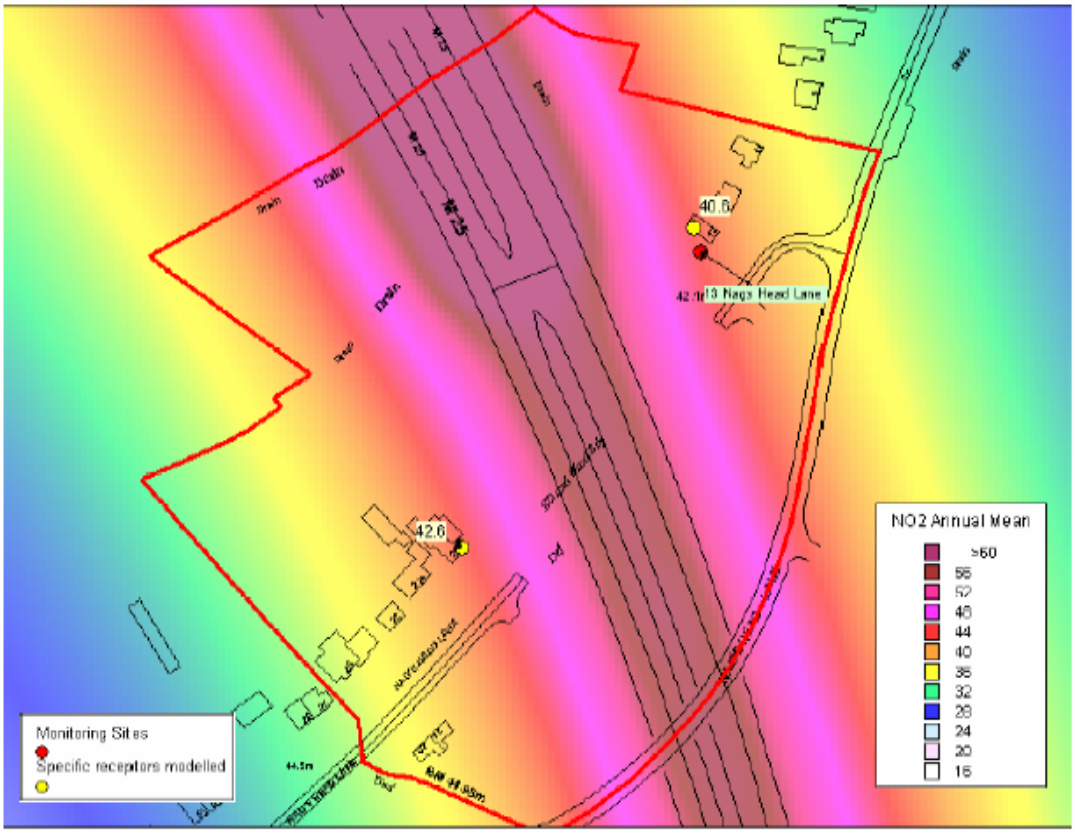
Figures 6-19 present maps of each of the AQMAs. For each AQMA two maps are presented – one showing the extent of each AQMA, and a second showing the prediction of the variation of NO_2 concentrations within each AQMA in 2005.

Figure 6: M25 / Nags Head Lane Junction: Extent of AQMA



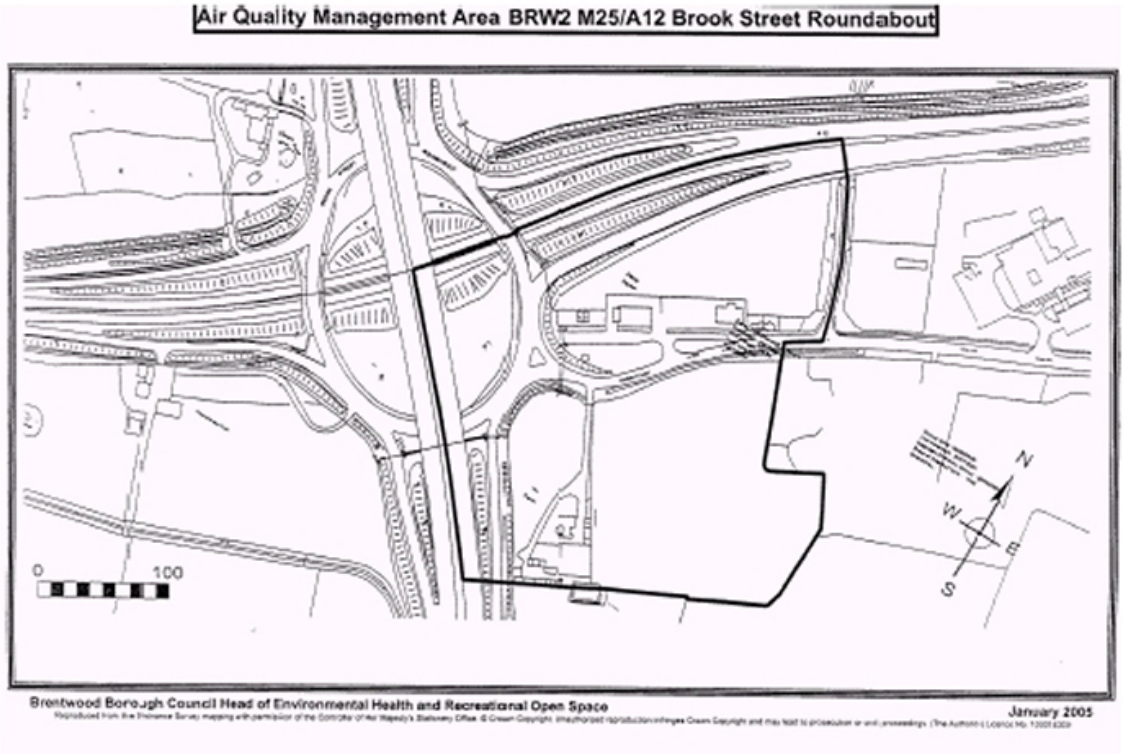
Taken from LAQM website (http://www.airquality.co.uk/archive/laqm/)

Figure 7: M25 / Nags Head Lane Junction: Prediction of the variation of NO_2 concentrations within AQMA in 2005



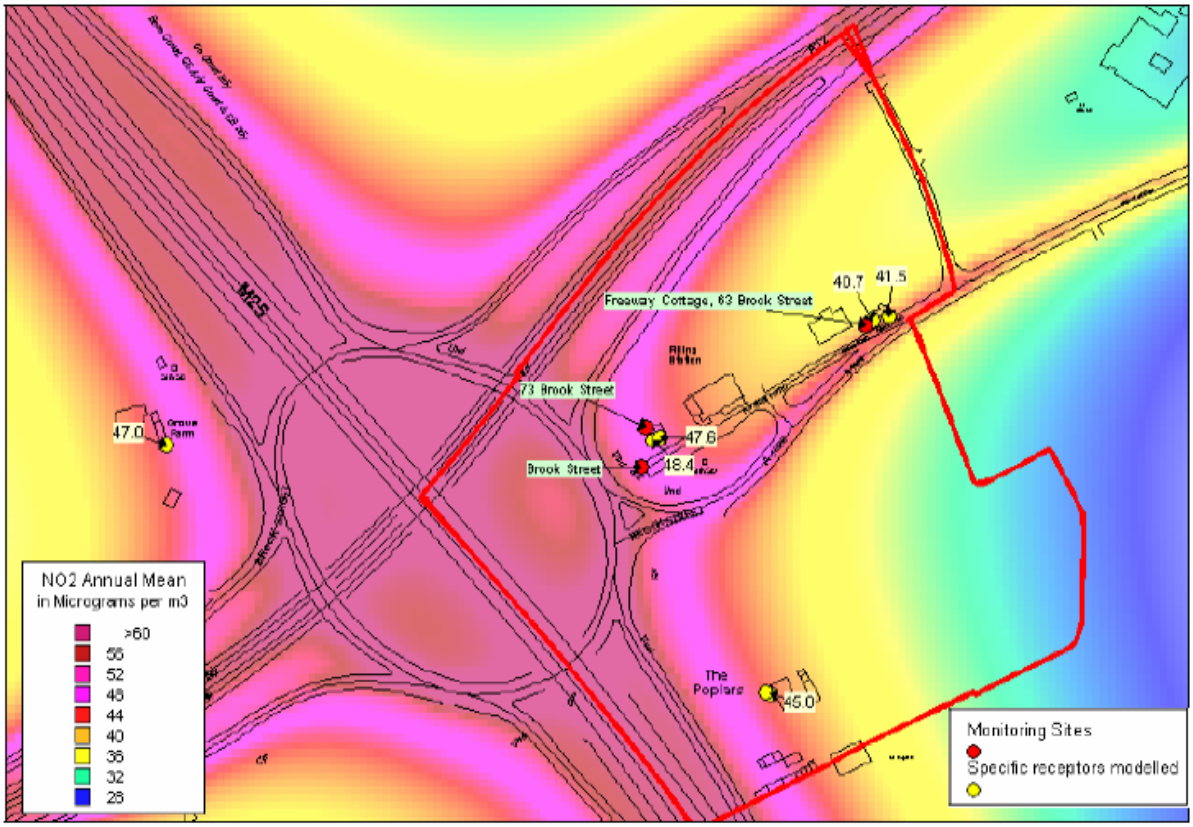
Taken from Brentwood Borough Council Local Air Quality Management – Further Assessment November 2005

Figure 8: M25 / A12 Brook Street Roundabout: Extent of AQMA



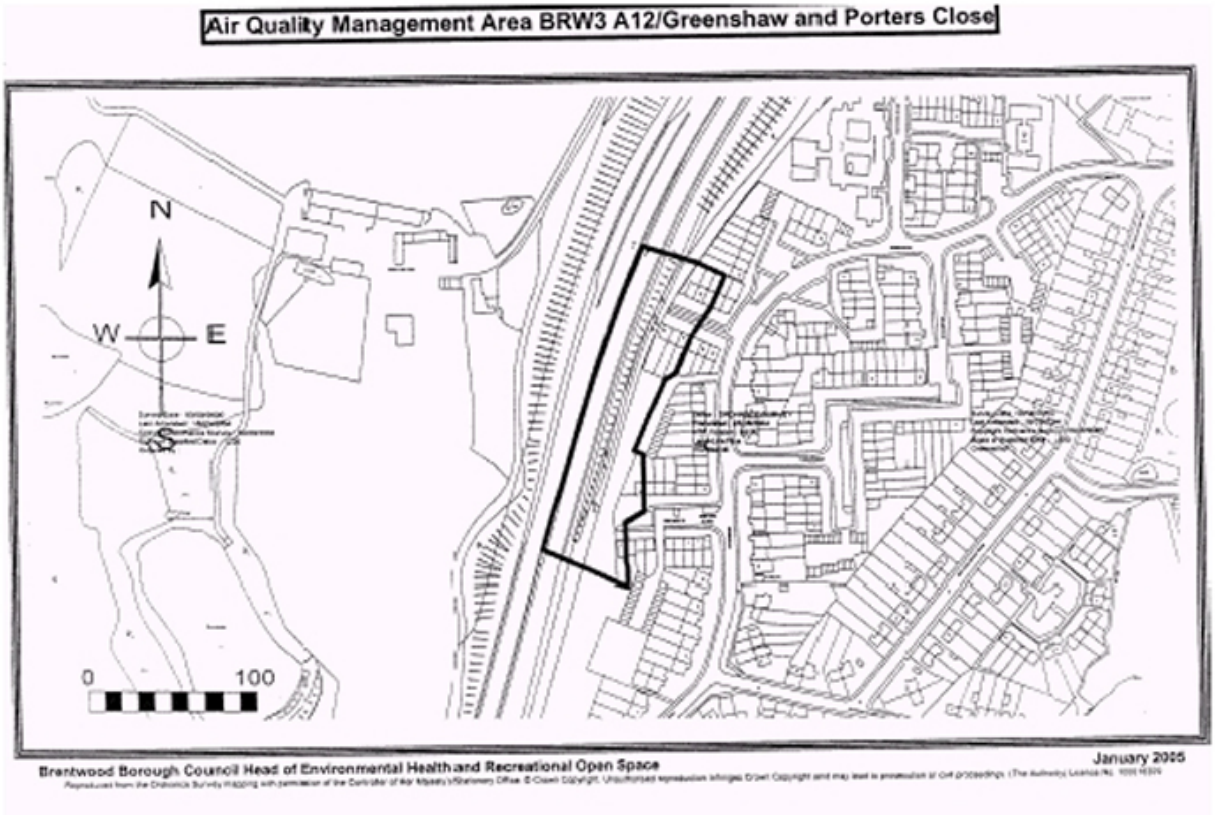
Taken from LAQM website (http://www.airquality.co.uk/archive/laqm/)

Figure 9: M25 / A12 Brook Street Roundabout: Prediction of the variation of NO_2 concentrations within AQMA in 2005



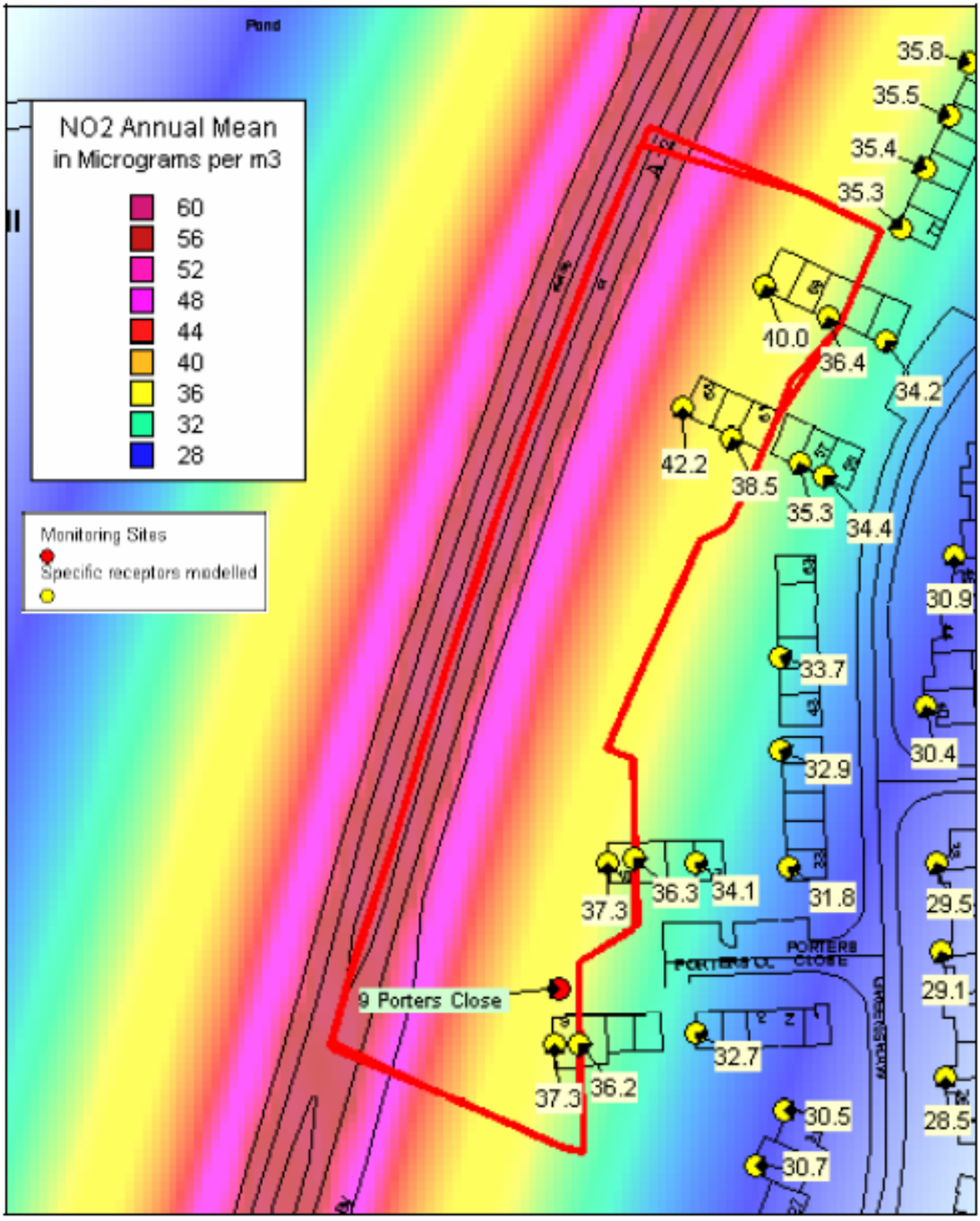
Taken from Brentwood Borough Council Local Air Quality Management – Further Assessment November 2005

Figure 10: A12 / Greenshaw and Porters Close: Extent of AQMA



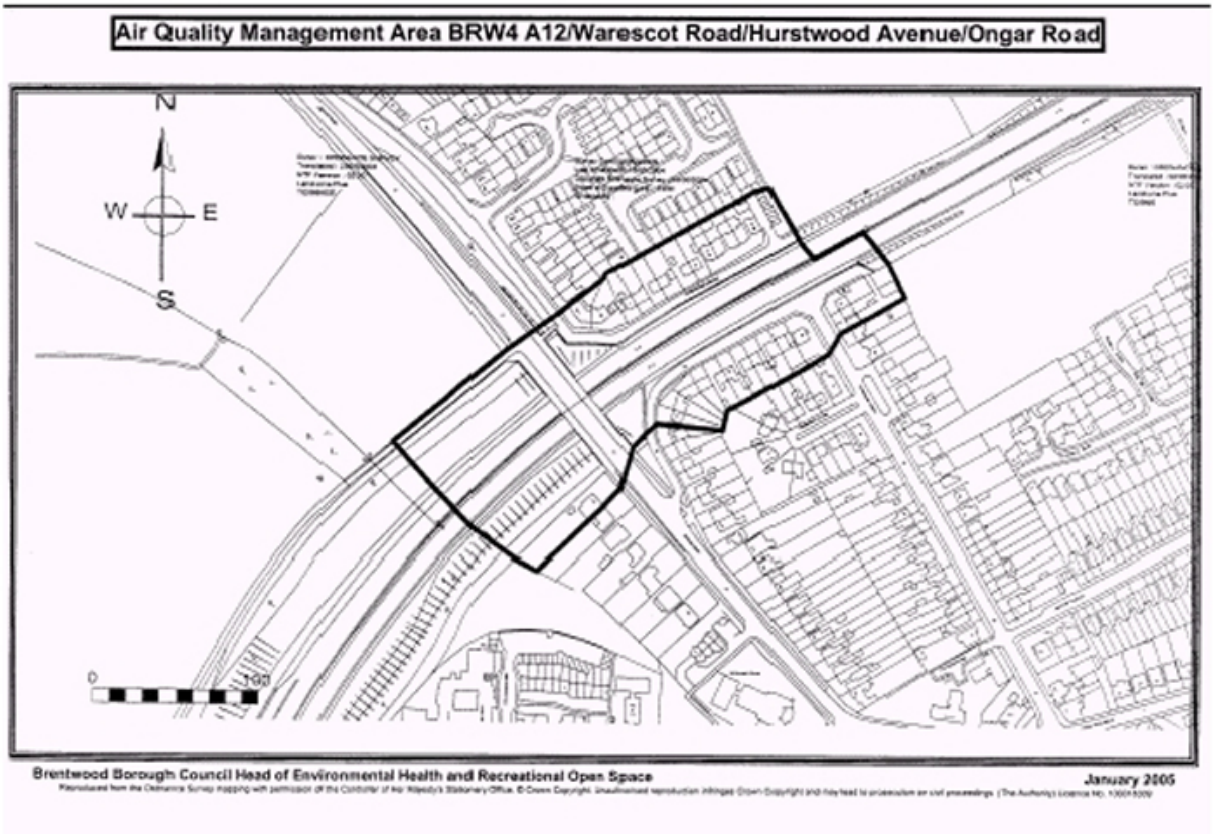
Taken from LAQM website (http://www.airquality.co.uk/archive/laqm/)

Figure 11: A12 / Greenshaw and Porters Close: Prediction of the variation of NO_2 concentrations within AQMA in 2005



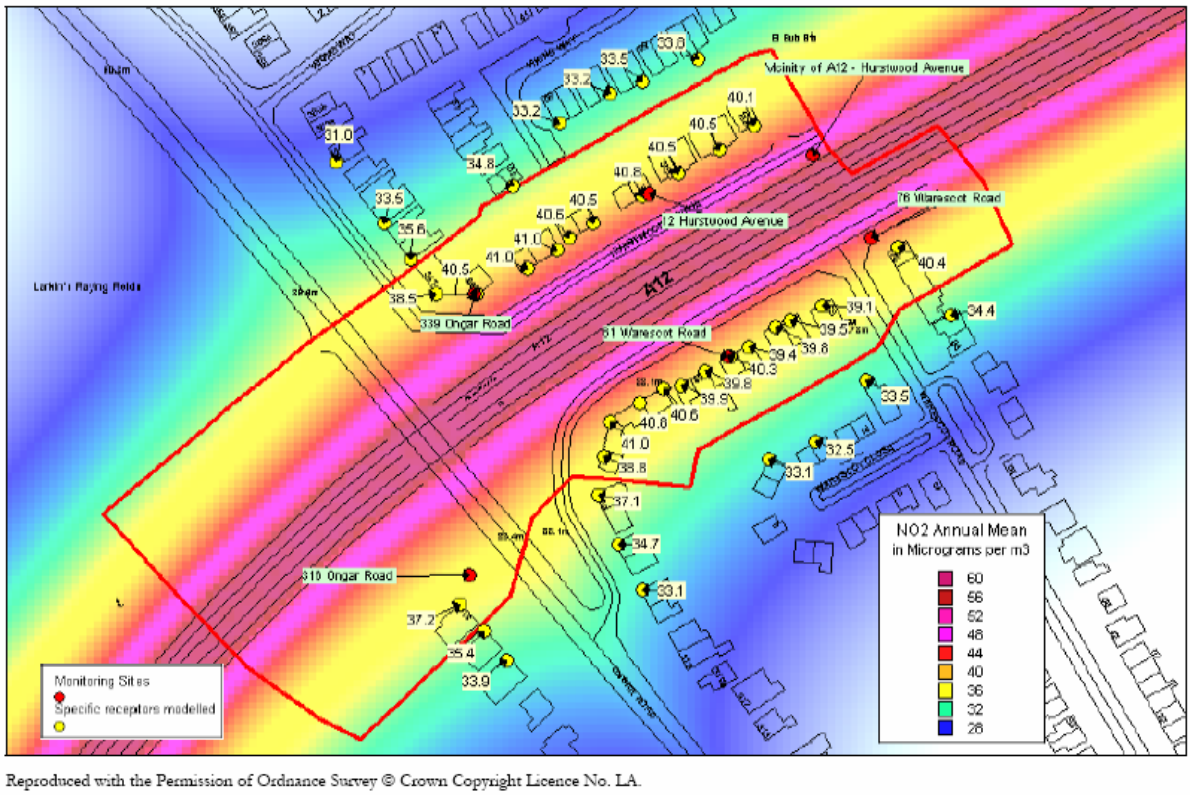
Taken from Brentwood Borough Council Local Air Quality Management – Further Assessment November 2005

Figure 12: A12/Warescot Road/Hurstwood Avenue/Ongar Road: Extent of AQMA



Taken from LAQM website (http://www.airquality.co.uk/archive/laqm/)

Figure 13: A12/Warescot Road/Hurstwood Avenue/Ongar Road: Prediction of the variation of NO_2 concentrations within AQMA in 2005



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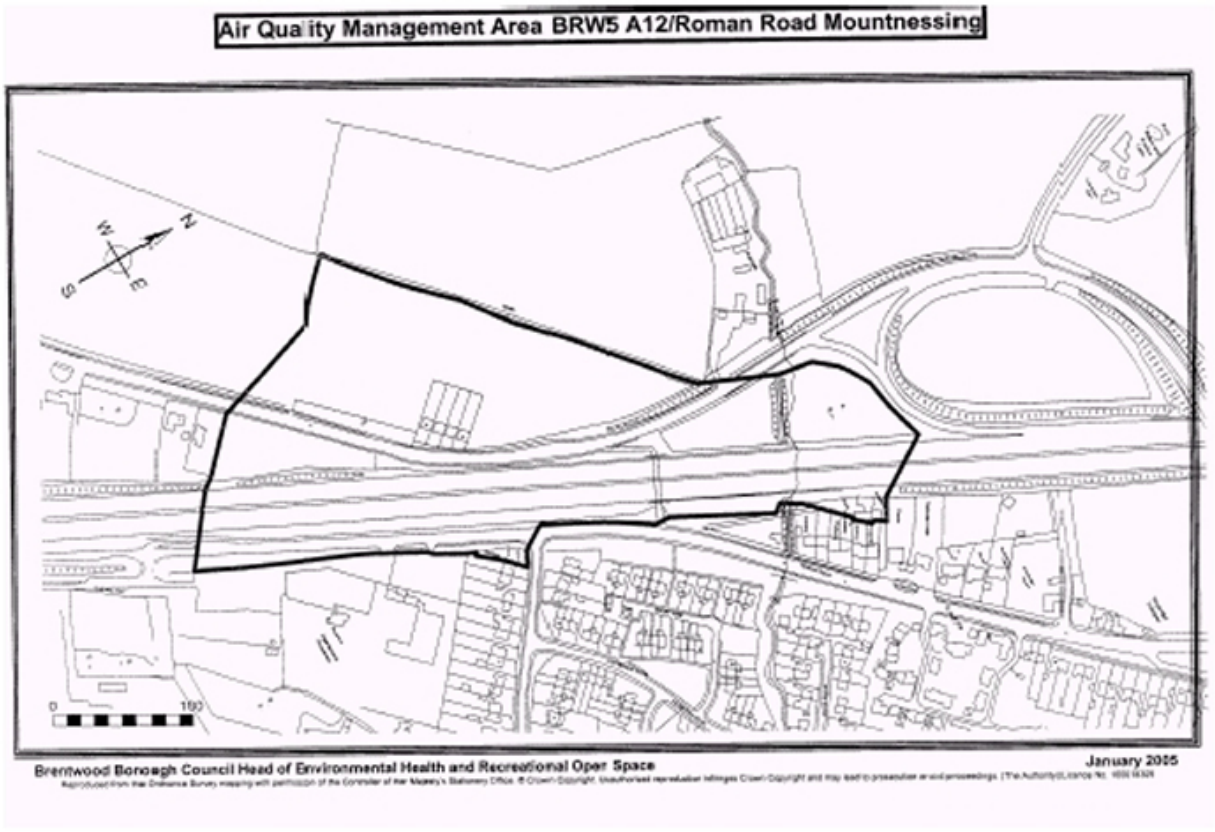
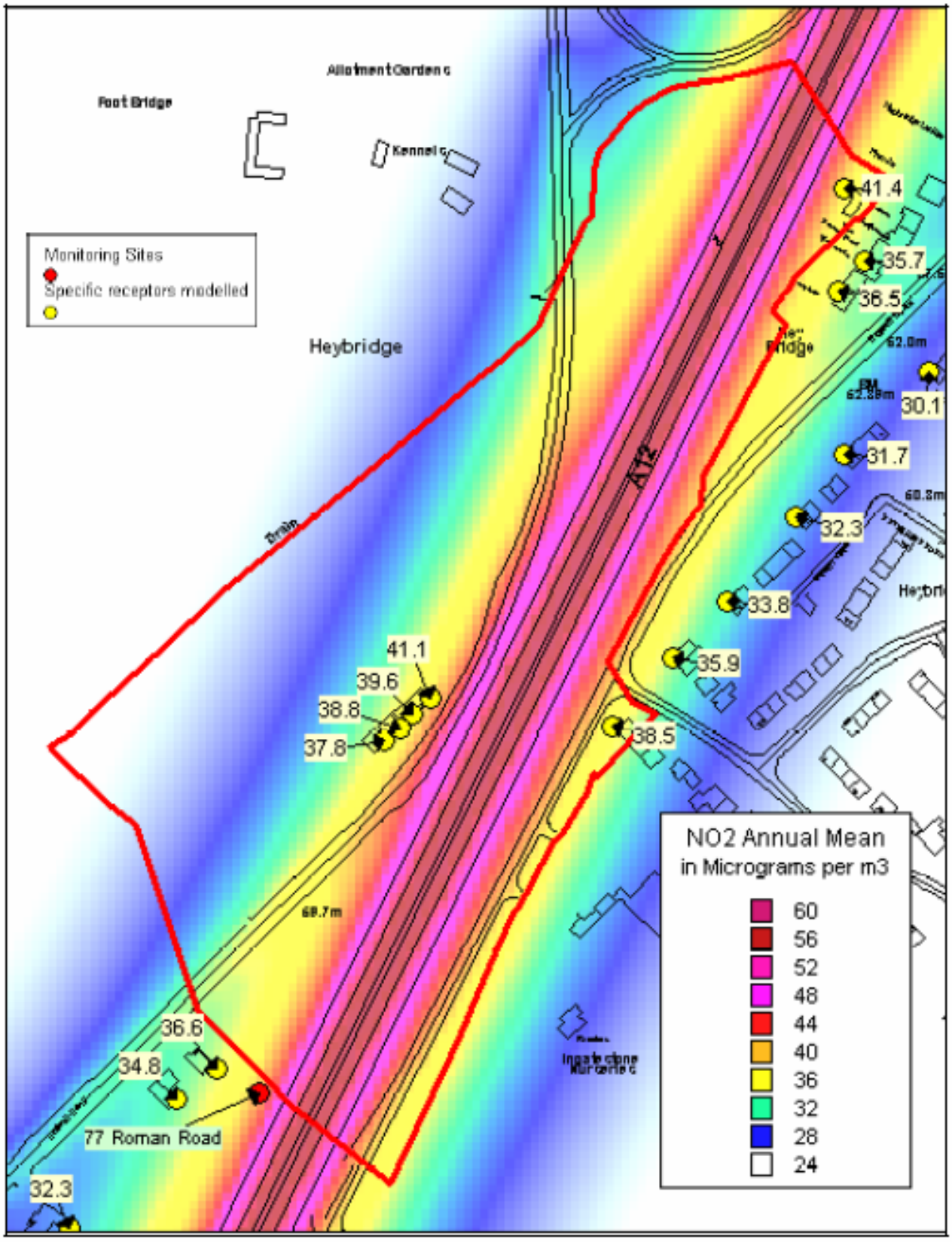
Taken from Brentwood Borough Council Local Air Quality Management – Further Assessment November 2005

Figure 14: A12 / Roman Road, Mountnessing: Extent of AQMA



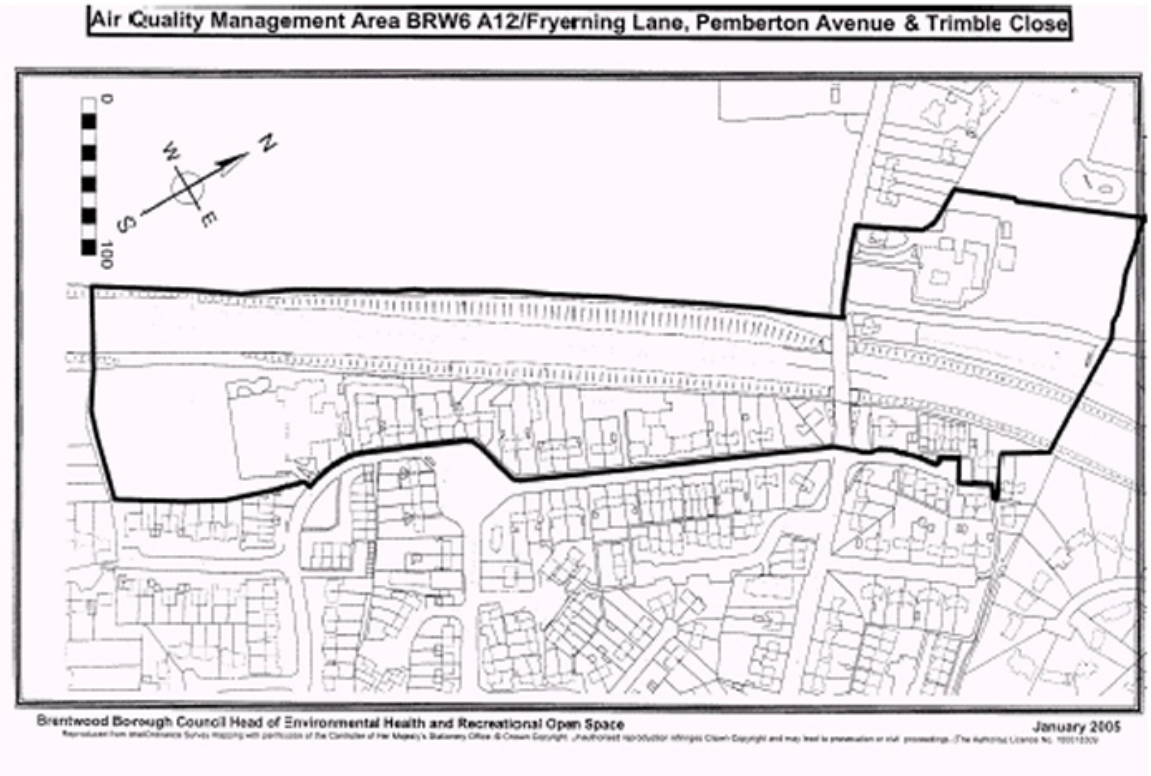
Taken from LAQM website (http://www.airquality.co.uk/archive/laqm/)

Figure 15: A12 / Roman Road, Mountnessing: Prediction of the variation of NO_2 concentrations within AQMA in 2005



Taken from Brentwood Borough Council Local Air Quality Management – Further Assessment November 2005

Figure 16: A12 / Fryerning Lane, Pemberton Avenue and Trimble Close: Extent of AQMA



Taken from LAQM website (http://www.airquality.co.uk/archive/laqm/)

Figure 17: A12 / Fryerning Lane, Pemberton Avenue and Trimble Close: Prediction of the variation of NO_2 concentrations within AQMA in 2005

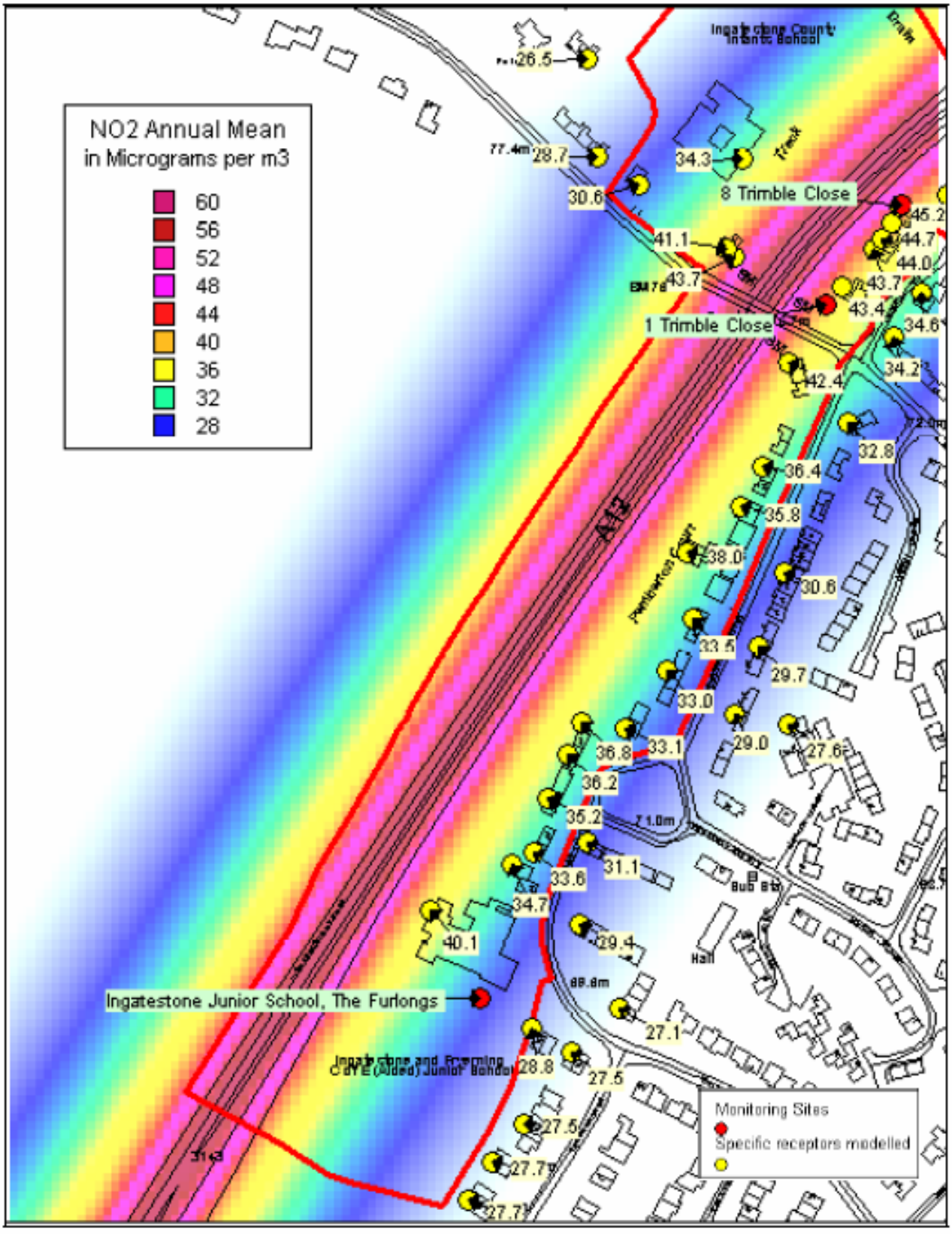


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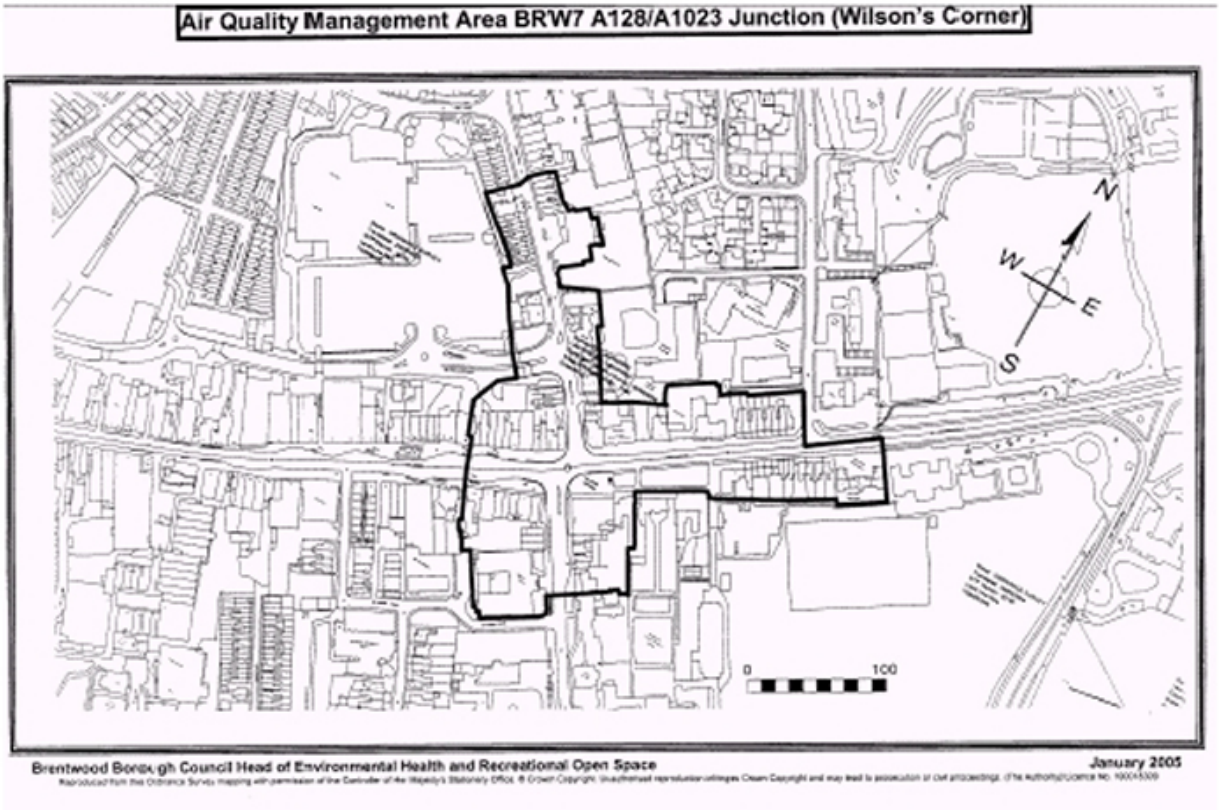
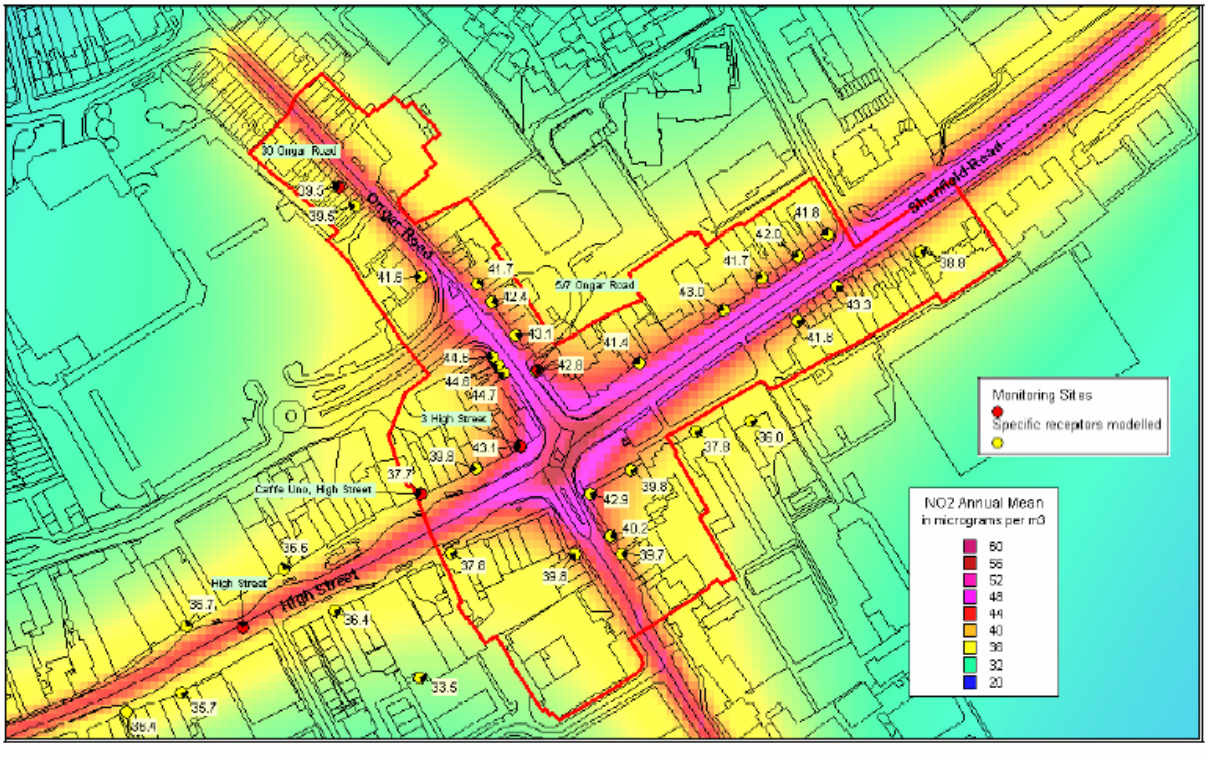
Figure 18: A128 / A1023 Junction (Wilson's Corner): Extent of AQMA



Taken from LAQM website (http://www.airquality.co.uk/archive/laqm/)

Figure 19: A128 / A1023 Junction (Wilson's Corner): Prediction of the variation of NO_2 concentrations within AQMA in 2005



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Taken from Brentwood Borough Council Local Air Quality Management – Further Assessment November 2005

C. Local Air Quality Management – Further Assessment (Casella Stanger November 2005)

Road traffic emissions from the high traffic flows on the M25 and A12 have been identified as the major source of NO_x emissions in 6 of the 7 AQMAs that have been declared. Queuing traffic up to Wilson's Corner, most noticeably at peak hours, combined with poor dispersion, has been identified as the major contributor to high concentrations of NO_2 in the vicinity of the A128 / A1023 Wilson's Corner AQMA.

D. Progress With Local Air Quality Monitoring For NO_2 – Third Round Updating and Screening Assessment For Brentwood Borough Council April 2006

Brentwood Borough has recently produced its third round of LAQM reviews, which is part of a three yearly cycle for review and assessment ending in 2010. In 2003, the Updating and Screening Assessment found that there was a risk of the air quality objective being exceeded in Brentwood along the A12 and at busy junctions within the Borough. This led to the creation of 7 AQMAs, as already detailed above.

Brentwood Borough Council undertakes continuous monitoring of NO_2 at its urban background site at the Town Hall in Brentwood. The results of this monitoring are shown in Table 16.

Table 16: Continuous Monitoring of NO_2 At Brentwood Town Hall

	2000	2001	2002	2003	2004	2005
Annual mean	*30*	*35*	*33*	36	32	30
Data capture %	*88*	*86*	*88*	96	95	92
Maximum	*159.4*	*193.9*	*122.6*	158	124	115.1
Exceeds	*0*	*0*	*0*	0	0	0

Taken from Third Round Updating and Screening Assessment For Brentwood Borough Council April 2006

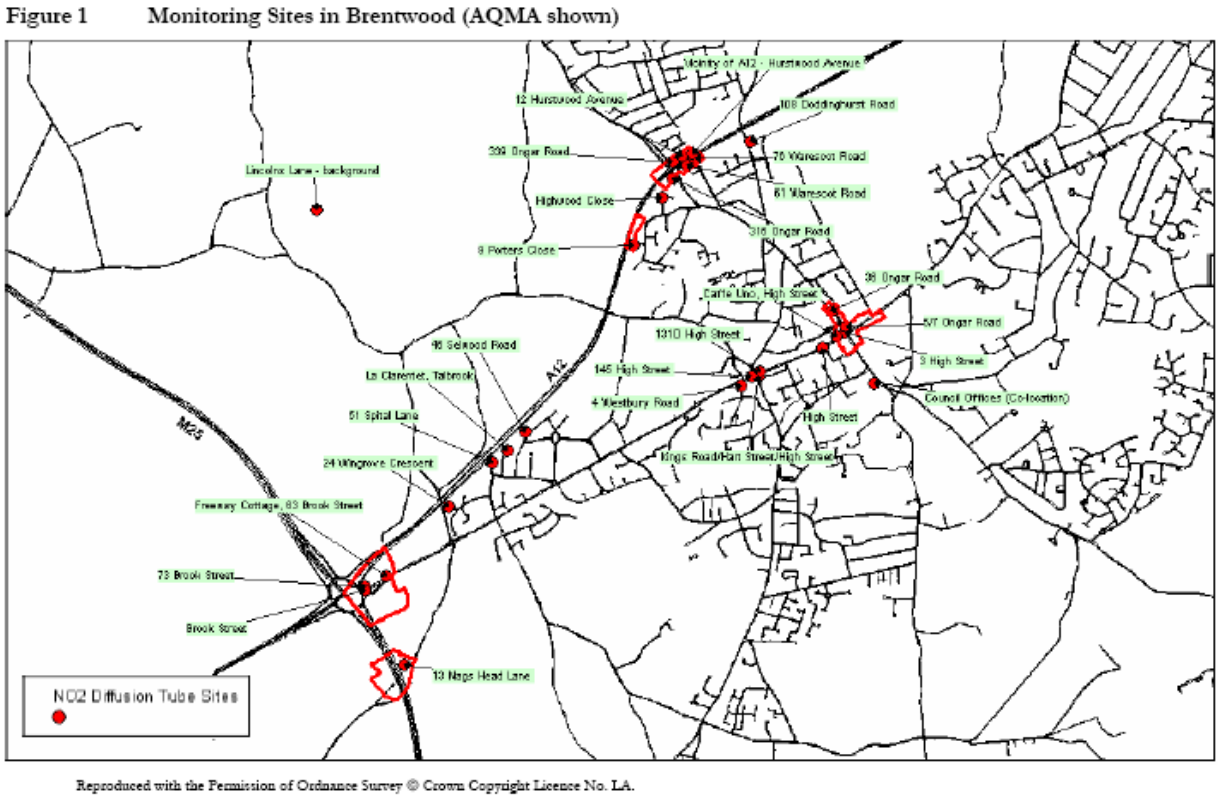
The World Health Organisation (WHO) set an annual mean NO_2 objective of 40µg/m^3. This objective has been met for every year for which data is available at the Brentwood Town Hall monitoring site. Consequently, the stated objective (that the annual mean should exceed the hourly standard for no longer than 18 hours a year) has been met. The highest NO_2 concentration, 36µg/m^3, was recorded in 2003. Between 2003 and 2005, the concentrations of NO_2 have fallen, resulting in a concentration of 30µg/m^3 in 2005. This equals the lowest concentration of NO_2 for which data was received, previously set in 2000.

The maximum permitted NO_2 concentration of 200µg/m^3 was also not exceeded in the 6 years analysed. The reported concentration of 193.9µg/m^3 in 2001 is the highest and since that year there has been a general decrease in NO_2 concentration to the new lowest figure of 115.1µg/m^3, recorded in 2005.

E. NO_2 Diffusion Tube Monitoring

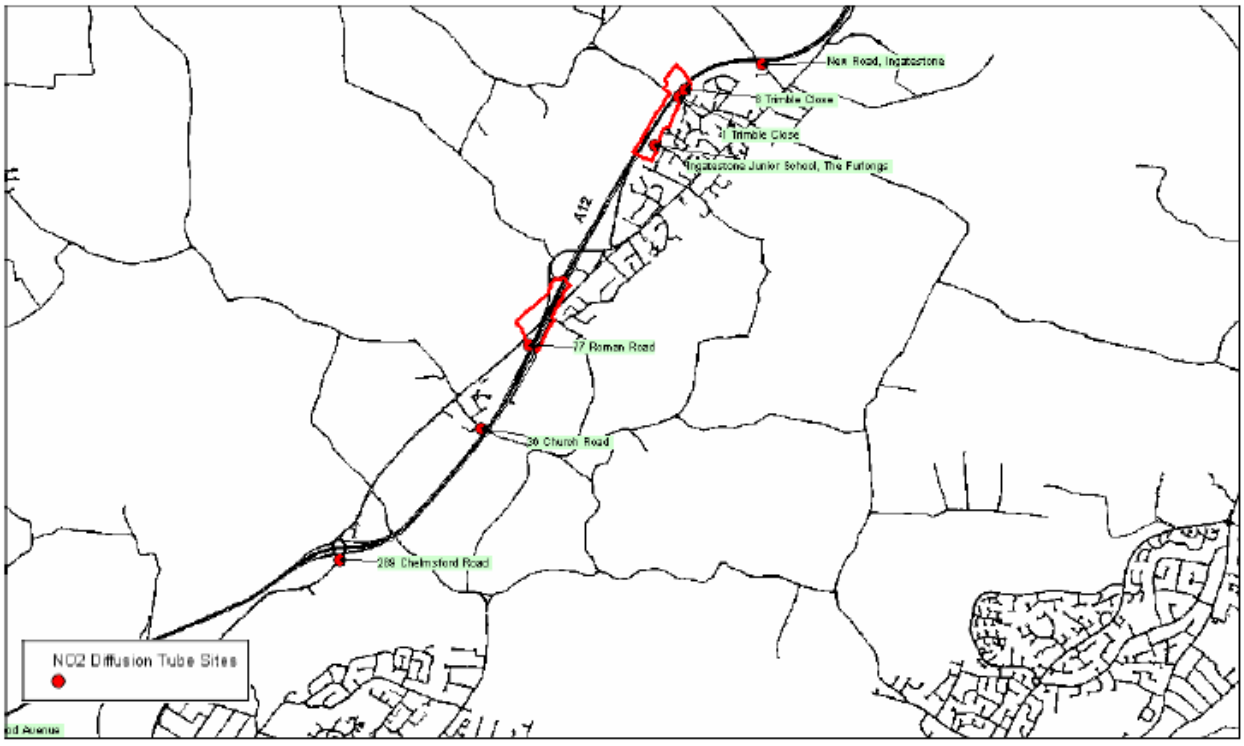
There are 37 NO_2 diffusion tube sites located within the Borough. One site, at Brentwood Council offices, is used as the urban background site and contains 3 tubes for continuous monitoring. All other sites contain a single tube. The site at Lincolns Lane Site 36 from April 2004) is also used as a background monitoring site. Figures 20a and 20b show the location of diffusion tubes in the Borough.

Figure 20a: Diffusion Tube Locations In Brentwood Borough – Brentwood Town



Taken from Brentwood Borough Council Local Air Quality Management – Further Assessment October 2005

Figure 20b: Diffusion Tube Locations In Brentwood Borough - Ingatestone



Taken from Brentwood Borough Council Local Air Quality Management – Further Assessment October 2005

Table 17 records the averaged annual NO_2 concentration for the years 2000 to 2005, with part year results for 1999 and 2006. However, it should be noted that in 2004 the site

codes were changed and the number of sampling tubes was reduced. This means that the time series for longer term trend analysis has become disrupted.

In Table 17 the figures highlighted in black are those tubes where the average mean concentration was found to be lower than the WHO objective of 40µg/m^3. A significant number of tubes fall outside this category, suggesting that air quality is a significant problem throughout Brentwood Borough. However, it is important to realise that the diffusion tube sites have been chosen to reflect the situation in those places where air quality is deemed to have the greatest chance of exceeding the WHO objective. Continuous monitoring is undertaken at Brentwood Council offices on Ingrave Road (current sites 01, 02 and 03), using triplicate tubes to ascertain any bias in the data, hence the 3 figures reported from this site since 2004. Examination of these figures shows that the air quality at this particular site has generally improved year on year. The reported 44.63µg/m^3 of NO_2 between October and December 1999 is above the WHO objective and is the highest recorded at the site since 1999. The concentration of NO_2 fell below the WHO objective in 2001 (38.27µg/m^3) and has since remained below 40µg/m^3. The 3 tube readings given in 2006 are marginally above those reported in 2005, although auto monitor 1 reports a decrease between 2005 and 2006, with NO_2 concentration falling from 35.8µg/m^3 to 34.38µg/m^3.

Table 17: NO_2 Diffusion Tube Monitoring Results 1999 – 2006

Site Code To Mar 04	Site Code From Apr 04	Location	Grid Ref X	Grid Ref Y	Oct - Dec 1999	2000	2001	2002	2003	2004	2005	Jan - June 2006
BRW 1	**BRW 01**	Council Offices auto monitor 1	559861	193617	44.63	40.06	38.27	35.95	38.98	36.58	35.80	34.38
	BRW 02	Council Offices auto monitor 1	559861	193617						32.96	31.36	33.97
	BRW 03	Council Offices auto monitor 1	559861	193617						32.83	30.67	32.53
BRW 2	**BRW 04**	73 Brook Street	556890	192435	61.53	59.80	57.95	58.47	61.63	52.66	54.15	56.03
BRW 3	**BRW 05**	Brook Street facing Brook Street roundabout	556887	192412	69.97	65.59	61.85	59.09	59.09	53.44	55.34	57.65
BRW 5	**BRW 06**	Freeway Cottage, Brook Street (63) on A1023	557014	192493	71.83	68.33	68.00	64.52	64.11	64.57	56.18	59.94
BRW 6	**BRW 07**	13 Nags Head Lane	557118	191978	55.60	49.67	47.77	44.02	48.15	41.71	42.59	41.32
BRW 16	**BRW 08**	3 High Street	559691	193912	68.53	61.97	64.88	59.93	58.67	48.48	57.37	59.56
BRW 17	**BRW 09**	Café Uno, High Street	559643	193889	61.37	53.10	54.29	51.66	72.31	59.66	45.96	51.89
BRW 20	**BRW 10**	5/7 Ongar road on A128	559699	193948	66.10	61.66	62.18	55.72	61.39	64.02	57.50	63.54
BRW 21	**BRW 11**	36 Ongar Road - A128	559604	194035	62.63	60.19	57.98	56.26	58.45	51.29	50.68	52.72
BRW 22	**BRW 12**	Corner of Kings Road/Hart Street/High Street	559187	193658	64.17	57.14	54.44	57.06	54.53	48.64	51.37	48.07
BRW 23	**BRW 13**	131D High Street	559195	193681	45.95	40.77	40.80	39.22	43.25	35.75	38.78	39.86
BRW 24	**BRW 14**	145 High Street	559148	193660	63.27	61.83	62.14	67.33	52.70	62.46	58.60	73.41
BRW 25	**BRW 15**	4 Westbury Road	559085	193601	50.20	45.09	44.20	43.08	44.48	45.33	39.85	47.72
BRW 27	**BRW 16**	24 Wingrave Crescent	557379	192900	36.90	45.55	43.56	43.29	46.04	40.41	38.18	41.83
BRW 28	**BRW 17**	51 Spital Lane	557632	193151	38.93	40.05	37.57	41.35	44.62	40.01	40.94	40.84
BRW 29	**BRW 18**	Rear garden 46 Selwood Road	557826	193333	46.03	40.40	38.50	38.90	39.80	35.13	37.22	37.12
BRW 31	**BRW 19**	61 Warescot Road	558769	194873	49.87	50.49	46.53	48.73	54.91	46.73	43.19	47.40
BRW 32	**BRW 20**	76 Warescot Road	558818	194913	55.60	52.54	53.49	55.36	61.28	51.59	49.20	55.01
BRW 33	**BRW 21**	316 Ongar Road	558681	194799	53.70	51.35	42.16	44.59	45.48	40.96	39.04	39.60
BRW 34	**BRW 22**	339 Ongar Road	558683	194894	53.73	48.53	45.88	48.35	55.36	45.59	42.60	45.30
BRW 35	**BRW 23**	12 Hurstwood Avenue	558742	194928	57.83	54.91	53.39	56.02	62.03	51.67	52.26	49.28
BRW 36	**BRW 24**	End of Highwood Close	558624	194695	52.10	46.40	44.11	45.06	47.23	40.00	42.26	42.08
BRW 37	**BRW 25**	9 Porters Close	558455	194421	50.23	46.16	45.51	44.57	50.07	39.51	43.86	45.36
BRW 40	**BRW 26**	289 Chelmsford Road	562278	196649	55.03	47.02	45.64	45.26	49.04	46.25	43.47	46.60
BRW 42	**BRW 27**	36 Church Road, side garden fence post	563250	197555	45.97	44.21	39.84	40.56	46.49	34.30	31.85	34.35
BRW 43	**BRW 28**	Ingatestone & Fryerning Jnr School, The Furlongs	564446	199509	56.70	47.38	46.25	45.99	43.89	41.20	33.39	37.37
BRW 44	**BRW 29**	No. 1 Trimble Close, Ingatestone	564617	199849	54.83	48.40	46.15	46.54	48.63	43.38	43.12	42.40
BRW 51	**BRW 30**	8 Trimble Close, Ingatestone	564654	199898			58.08	52.15	55.32	47.77	49.15	50.52
BRW 45	**BRW 31**	End of New Road, Ingatestone	565186	200071	46.50	45.01	44.91	45.59	50.86	42.99	40.62	40.97
BRW 46	**BRW 32**	End of Beggar Hill	562511	201471	27.10	25.55	26.61	23.69	29.71	41.93	44.99	48.39
BRW 49	**BRW 33**	108 Doddinghurst Road	559139	195012	58.17	52.28	46.99	46.64	49.62	45.66	43.14	43.17
BRW 50	**BRW 34**	La Charente, Talbrook	557719	193226	47.00	47.52	46.56	47.73	48.73	45.46	44.53	44.53
BRW 54	**BRW 35**	High Street, Brentwood	559554	193825						52.72	53.55	56.12
BRW 53	**BRW 36**	Lincolns Lane	556603	194628				28.15	39.15	25.42	22.99	25.24
BRW 52	**BRW 37**	Vicinity of A12	558800	194947				31.90	41.60	85.67	102.82	105.59
BRW 56	**BRW 38**	77 Roman Road	563569	198154						37.72	42.21	32.57
BRW 55	**BRW 39**	Thorndon Avenue	562409	189153						48.38	50.26	54.56

BRW 4		The Poplars, Brook Street	556958	192285	57.50	52.31	53.69	50.43	53.63	49.37		
BRW 7		21 Nags Head Lane	557045	191874	42.80	37.34	40.73	41.72	46.33	43.73		
BRW 8		Angel Cottage, Wrightsbridge Road	555067	194138	46.90	38.35	34.47	34.06	37.49	40.43		
BRW 9		Lee Farm, Horsemanside	553635	195529	48.33	42.76	40.23	41.73	44.59	43.15		
BRW 10		Nettlestone, Warley Street (A127)	559442	188795	44.23	38.06	37.25	37.90	40.31	39.47		
BRW 11		Codham Hall Farm, Codham Hall Lane	558876	188858	43.97	39.47	38.79	37.51	37.07	34.30		
BRW 12		Great Warley Hall	559617	188463	45.37	39.52	38.95	36.69	40.63	39.53		
BRW 13		Homefield Nursery - A127	560301	188785	47.83	41.03	41.41	40.88	46.33	36.43		
BRW 14		Thorndon Avenue/A127	562405	189146	54.57	49.40	54.06	49.80	49.30	57.10		
BRW 15		Meadow House, Arterial Road, A127	563897	189374	46.30	38.72	41.58	35.78	40.87	37.97		
BRW 18		18A High Street	559643	193802	51.50	44.33	44.14	42.92	47.34	40.75		
BRW 19		9 Ingrave Road, A128	559739	193860	55.93	55.19	55.88	56.41	59.73	55.80		
BRW 26		Rear of Hamlet Court, Leonard Way	557478	192980	47.73	46.52	52.57					
BRW 30		Rear garden 46 Selwood Road	557826	193333	44.70	40.57	37.77	37.78	41.80	48.27		
BRW 38		381 Ongar Road - front downpipe	558418	195103	40.73	40.90	36.88	37.01	39.64	36.27		
BRW 39		Overflow car park, Brentwood Centre	559221	195223	48.90	50.30	48.76	51.65	58.83	52.03		
BRW 41		Oakwood Cottage, Lower Road	562614	196906	44.07	39.58	38.37	36.63	39.73	37.63		
BRW 47		Church at Blackmore	560298	201603	31.00	24.81	23.58	20.67				
BRW 48		Woolmongers Lane	558409	202001	36.10	30.94	29.62	25.21				

Adapted from Brentwood Borough Council Local Air Quality Management – Further Assessment November 2005

Site BRW36 is located at Lincoln Lane and is a background site, hence the comparatively low readings from this tube. This site has continuously been below the WHO objective, although the reported 25.24µg/m^3 for the first half of 2006 is above the 22.99µg/m^3 reported in 2005.

By taking a single mean average across all sites for each year, it can be seen that nitrous dioxide has fallen between October 1999 and June 2006, from 51µg/m^3 to 47.66µg/m^3. However, the last two years have seen an increase in measured concentrations across all sites, up from the lowest concentration of 44.76µg/m^3 measured in 2002.

There are 5 sites where the average NO_2 concentration between October 1999 and June 2006 is above 60µg/m^3. Of these, sites BRW05 and BRW06, adjacent to Junction 28 of the M25, have reported a figure lower than 60µg/m^3 between January and June 2006. Of most concern are tubes BRW14 and BRW37. BRW14 is located at 145 High Street and reported a NO_2 concentration of 73.4µg/m^3, showing a significant increase from 2005 (58.6µg/m^3) and 2004 (62.46µg/m^3) concentrations. BRW37 is situated in the vicinity of the A12 and as such could be expected to report a higher concentration of NO_2 than most sites. However, NO_2 concentration at the site has risen each year since monitoring at the site began – from 31.9µg/m^3 in 2002 (below the WHO objective) to 105.59µg/m^3 between January and June 2006 (2.5 times above the WHO objective). Such a rise suggests that it would be prudent to conduct further more detailed investigation at site BRW37.

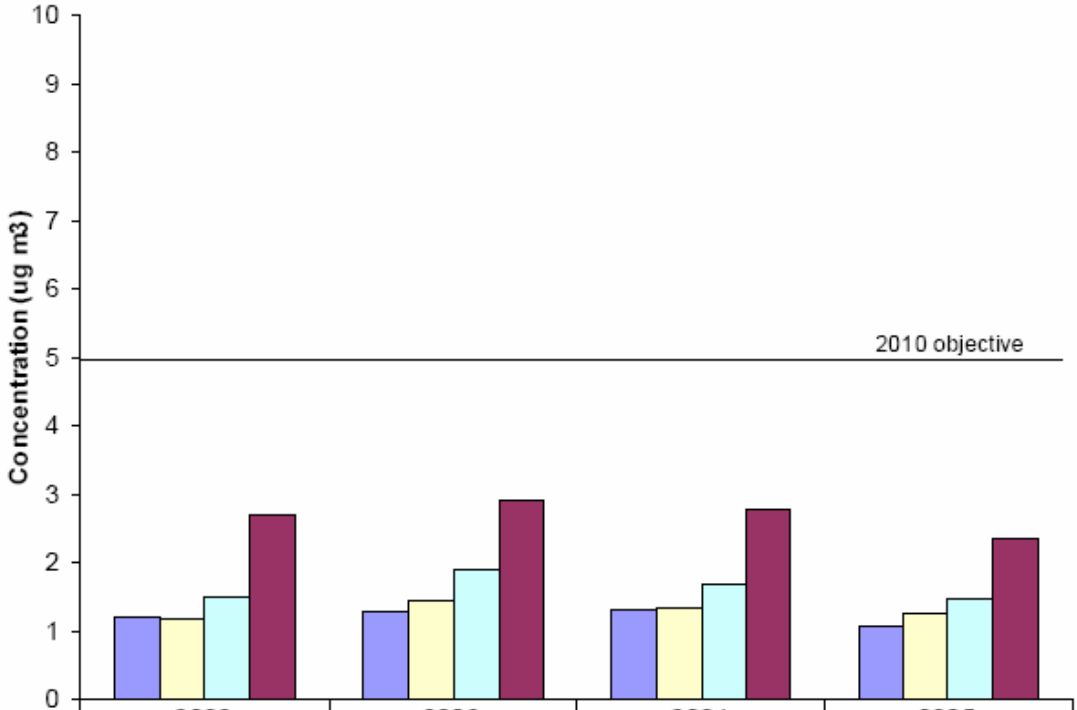
F. Carbon Monoxide

Brentwood Borough Council does not undertake continuous CO monitoring in its area. For this pollutant, ratified monitoring data are required at locations where there is a potential for public exposure. Data from busy roads can be used to identify potential hotspots, as can average traffic speeds and the Heavy Goods Vehicle / Light Goods Vehicle split.

G. Benzene

The Council does not undertake benzene monitoring in the Borough. However, monitoring is undertaken at the urban background site in nearby Southend. These monitoring results for Southend (see Figure 21) are considered to be representative of the Brentwood area. They indicate that the concentrations will not exceed the benzene objectives for 2003 and 2010.

Figure 21: Annual Mean Concentrations of Benzene



	2002	2003	2004	2005
Southend	1.19	1.28	1.29	1.07
Norwich centre	1.18	1.43	1.35	1.25
Central London	1.49	1.91	1.69	1.47
London roadside	2.7	2.91	2.78	2.32

Taken from Third Round Updating and Screening Assessment for Brentwood Borough Council

H. 1,3 Butadiene

The Council does not undertake monitoring of 1,3 Butadiene although it has been ascertained that there are no new industrial processes or changes relating to existing industrial processes of relevance for 1,3 Butadiene in the Borough or neighbouring areas. National mapping also indicated that for all areas the 2003 objective would not be exceeded.

I. Lead

The Council does not monitor lead in its area. Similarly there is no monitoring of lead undertaken by other authorities in Essex. However, lead monitoring based in London could be taken as being representative of the likely highest concentrations in the Council's area. The results indicate that the concentrations will not exceed the 2004 and 2008 lead objectives.

J. Sulphur Dioxide

The Council does not monitor SO_2 in its area although monitoring is undertaken in the neighbouring local authorities of Castle Point, Southend and Thurrock. Results from these authorities indicate that objectives have not been exceeded although there were periods where the 15 minute standard had been exceeded in all years other than 2005. The results for Brentwood Borough are predicted to be lower than those found in the monitoring

authorities due to its increased distance from industrial activity along the Thames estuary, particularly the oil refinery.

K. Particles (PM_{10})

The Council does not monitor PM_{10} in the Borough.

4.4 Summary

- Brentwood Borough Council has designated 7 Air Quality Management Areas due to NO_2 pollution which is linked to traffic emissions. The areas are,
  - M25/Nags Head Junction;
  - M25/A12 Brook Street Roundabout;
  - A12/Greenshaw and Porters Close;
  - A12/Warescot Road/Hurstwood Avenue/Ongar Road
  - A12/Roman Road, Mountnessing
  - A12/ Fryerning Lane/Pemberton Avenue/Trimble Close
  - A128/A1023 Junction (Wilson's Corner)
- The Borough Council currently has a network of 37 sites for monitoring NO_2 concentrations. The monitoring sites have generally been selected on the basis that potential NO_2 concentrations are most likely to exceed the WHO objective of an annual average of 40µg/m^3.
- The background sites at Brentwood Council offices and at Lincolns Lane record concentrations below the WHO objective.
- The majority of other monitoring sites record NO2 concentrations above the WHO objective of an annual average of 40µg/m^3, although the time series shows a reasonably stable situation.
- Site BRW37 (in vicinity of A12) merits further detailed investigation because the latest data records the highest NO2 concentrations at 2.5 times above the WHO objective in 2005 and the first part of 2006, and the time series shows a continually and rapidly deteriorating situation since the site was established in 2002.
- Brentwood Borough Council does not monitor any other pollutants, but information from other areas and from prediction analysis suggests that the Borough meets air quality standards for other pollutants.

5 WATER QUALITY

5.1 Introduction

Achieving a balance between the demand of competing uses of water is extremely important in the Eastern Region, since it is the driest region in the country (Our Environment, Our Future: The Regional Environment Strategy for the East of England. East of England Regional Assembly and East of England Environment Forum, July 2003).

In addition to the ever increasing demand from human uses, water contributes to the natural environment, having ecological, aesthetic, scientific, educational and recreational value.

5.2 Policy Context

A. International/National Context

i) The Water Framework Directive 2000/60/EC (WFD) rationalises and updates existing EC water legislation, introducing an integrated and coordinated approach to water management through a statutory system of analysis and planning based upon the river basin. Its objective is to establish a Community framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater, in order to prevent and reduce pollution, promote sustainable water use, protect the aquatic environment, improve the status of aquatic ecosystems and mitigate the effects of floods and droughts. DEFRA has responsibility for the implementation of the WFD in the UK, with much of the implementation work being undertaken by the Environment Agency. At present, analysis of surface and groundwater characteristics, review of the environmental impact of human activity, economic analysis of water use (article 5) and the establishment of registers of protected areas (articles 6 and 7) is being undertaken. The Water Framework Directive target is for all inland and coastal waters to reach 'good status' by 2015 (status to be defined in terms of ecological, chemical, quantitative status).

Physical development can affect water resources and water quality. The government, within the Water Framework Directive, want to ensure that land use planning guidance reflects the pressures this can put on water, including over the long term to reflect the influence of climate change (e.g. from hotter and drier summers). Water can also be an influence on urban regeneration and must be taken into consideration within regeneration plans.

ii) The control of water abstraction was introduced by the Water Resources Act 1963. It has been the Environment Agency's responsibility to ensure that water resource development does not cause river flows or groundwater levels to fall below those required to meet the needs of aquatic habitats and other water uses. Amendments to the original Act have been made via the Water Act 1989, the Water Resources Act 1991 and the Water Act 2003. The latter discusses the regulation of the water industry and other provisions encouraging more efficient use of water resources. Provisions in the Water Act 2003 provide enforcement authorities (the Secretary of State, the National Assembly for Wales and OfWAT) with powers to impose civil financial penalties of up to 10% of turnover on statutory undertakers and licensed water suppliers. Penalties can be imposed for contraventions of appointment conditions, licence conditions, certain statutory or other requirements, or for failure to achieve prescribed standards of performance of water supply or sewerage services.

iii) National planning policies are published by the Department for Communities and Local Government in Planning Policy Statements (PPS), which are gradually replacing Planning Policy Guidance Notes (PPG). In respect of Water Quality, national guidance is presented in two documents:

- PPS1: Delivering Sustainable Development advises that planning authorities should seek to enhance the environment as part of development proposals. Significant adverse impacts on the environment should be avoided and alternative options which might reduce or eliminate those impacts pursued. Where adverse impacts are unavoidable, planning authorities and developers should consider possible mitigation measures, and, where adequate mitigation measures are not possible, compensatory measures may be appropriate. In line with the UK sustainable development strategy, environmental costs should fall on those who impose them – the "polluter pays" principle. Development plan policies should seek to enable the use of non-renewable resources in ways that do not endanger the resource or cause serious damage or pollution. The causes and impacts of climate change, the management of pollution and natural hazards, the safeguarding of natural resources, and the minimisation of impacts from the management and use of resources should be addressed on the basis of sound science.
- PPS23: Planning and Pollution Control advises that any consideration of the quality of land, air or water and potential impacts arising from development, possibly leading to impacts on health, is capable of being a material planning consideration, in so far as it arises or may arise from or may affect any land use. Also that the planning system plays a key role in determining the location of development which may give rise to pollution, either directly or indirectly, because planning decisions can have a significant impact on the quality of air, water and land, and therefore affect the environment. Appendix A within PPS23 sets out matters for consideration in preparing Local Development Documents and taking decisions on individual planning applications where pollution considerations arise. Additionally, the companion document PPS23 Annex 1: Pollution Control, Air and Water Quality gives further guidance on the pollution control regimes that interact with the planning system together with good practice in considering these issues in development plans and when determining planning applications.

iv) Standards/Targets

- The Government does not have a specific Public Service Agreement target to measure river water quality.
- Monitored river lengths have a baseline assessment called the River Quality Objectives (RQO), which is the level of water quality that a river should achieve in order to be suitable for its agreed uses. The River Quality Objective is 91% compliance by 2006 for rivers in England and Wales (Environment Agency).
- DEFRA's Public Service Agreement (2005-2008): target is to achieve 95% by area of SSSI in favourable or recovering condition by 2010. One of the major tools for achieving this will be for public bodies, including the water companies, to deliver their SSSI responsibilities, namely water quality and abstraction.
- Environmental Quality Standards (EQS): set for a large number of substances (List 1 and 2 dangerous substances, from the EC Dangerous Substances Directive (76/464/EEC)).
- Urban Waste Water Treatment Directive: sets limits that sewage treatment works must meet, depending on their size and nature of the receiving waters (91/271/EEC).

B. Regional/County Context

i) The Draft East of England Plan, prepared by the East of England Regional Assembly (EERA), was submitted to Government in December 2004. Following a period of public consultation the Plan was subject of an Examination in Public (EiP) between November 2005 and March 2006. The Report of the EiP Panel was published in June 2006. In December 2006 the Secretary of State published Proposed Changes to the Draft Plan for a period of public consultation to March 2007. The final Plan is expected to be published by Government by summer 2007.

A relevant policy in the Draft Plan, as submitted in December 2004, is Policy ENV9: Water Supply, Management and Drainage, which requires local planning authorities to take account of the Environment Agency's Regional Water Resources strategy, catchment abstraction management strategies, groundwater vulnerability maps and groundwater source protection zone maps. The rate of development should not exceed the capacity of existing water supply systems. Water conservation measures and sustainable drainage solutions should be introduced and liaisons should be maintained with the Environment Agency.

ii) The Essex and Southend-on-Sea Replacement Structure Plan was adopted in April 2001. The Planning and Compulsory Purchase Act 2004 introduced a 'new' statutory plans system. The transitional arrangements for the 'new' system provide for the Adopted Structure Plan policies to be "saved" to 28th September 2007. Beyond that date policies of the Plan will cease to have effect unless they are "saved" by the Secretary of State. The Secretary of State has published a protocol on the procedures for saving Structure Plan policies. The protocol requires the Regional Planning Body to make requests for extending the life of Structure Plan policies to the Secretary of State by 1st April 2007. Such requests will be considered in the light of criteria set out in PPS11 paragraph 2.57.

A relevant policy in the Adopted Plan, April 2001, is Policy NR12: Protecting Water Resources, which states that development will only be permitted where adequate water resources can be provided within the plan period without a detrimental effect on the environment. Development will also only be permitted if there would not be a risk to existing water resources, the development will not be at risk from any form of flooding, nor increase the risk elsewhere and that there will be no materially adverse effect upon nature conservation, archaeological remains or landscapes and recreational facilities located near rivers and canals. Water conservation measures will also be sought for new buildings where appropriate.

iii) The Environment Agency's regional water resources strategies 'Water resources for the future' are 25 year plans for water resources, with Essex falling under the Anglian strategy. Water company water resources plans submitted to the Environment Agency show how the water industry intend to provide sufficient water to meet customers' needs for water in Essex, while protecting and enhancing the environment. The Environment Agency's 'Managing Water Abstraction' provides a national framework for the Catchment Abstraction Management Strategies (CAMS) process. The Environment Agency is developing CAMS for every catchment in England and Wales. The final version of the Combined Essex (North and South Essex) CAMS is expected in February 2007.

The long-term future water supply in Essex is dependent on the increase of reservoir capacity at Abberton, with current storage capacity needing to be increased by 60%. This scheme is due for completion in 2014. Infrastructural improvements to the Ely Ouse

Essex Rivers Transfer Scheme are also of importance, as set out in the Environment Agency Water Strategy and within the Draft East of England Plan.

C. Brentwood Context

i) The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). Relevant policies within the Local Plan, are:

- CP1: General Development Criteria states that any development will need to ensure there will not be a detrimental impact on health, the environment or amenity due to the release of pollutants to land, air or water.
- C7: Retention and Provision of Landscaping and Natural Features in Development requires existing trees, hedges, woods, ponds, watercourses and other natural features to be retained in proposals for new development.
- IR7: Energy and Water Conservation and the Use of Renewable Sources of Energy in New Development states that new development should encourage water conservation.

5.3 Current Baseline Information

This section provides an analysis of the river ecosystem within Brentwood Borough, followed by the General Quality Assessment (GQA) results for chemistry, biology, nitrates and phosphates within the Borough, with county and regional comparisons.

i) Brentwood Borough River Ecosystem Analysis

The River Ecosystem (RE) scheme exists to provide a nationally consistent basis for setting River Quality Objectives for rivers. Targets are used to ensure that planning improvements are made and that existing river water quality is maintained. This helps to sustain the river for recreation, fisheries and wildlife as well as protecting the interests of abstractors.

There are 5 RE classes which reflect the chemical quality requirements of communities of plants and animals within a river. These are summarised in Table 18.

A stretch of river is classified as failing its RE target if there is a 95% certainty that it has failed. This is deemed to be a ‘Significant Failure’. If there is a 50 – 95% chance of failure then this is classed as marginal, and with less than 50% certainty it is classed as a pass. The length of a compliant river is the total of those stretches classed as a marginal or a pass. The total percentage of failing river is the total length of those stretches classed as significant failures. Compliance is assessed using a 3 year rolling data set.

Table 18: River Ecosystem Chemical Quality Requirements

		Class Criteria						
		DO	BOD	Ammonia	Unionised Ammonia	Copper	Zinc	pH
Class	Description	* Q10	Q90	Q90	Q95	Q95	Q95	Q5 - Q95
RE1	Water of very good quality suitable for all fish species	80%	2.5	0.25	0.021	112	500	6 - 9
RE2	Water of good quality suitable for all fish species	70%	4	0.6	0.021	112	500	6 - 9
RE3	Water of fair quality suitable for high class coarse fish populations	60%	6	1.3	0.021	112	2000	6 - 9
RE4	Water of fair quality suitable for coarse fish populations	50%	8	2.5	-	112	2000	6 - 9
RE5	Water of poor quality which is likely to limit coarse fish populations	20%	15	9	-	-	-	-
		*Q10 - 10 percentile, Q90 - 90 percentile, Q95 - 95-percentile, Q5 - 5 percentile						

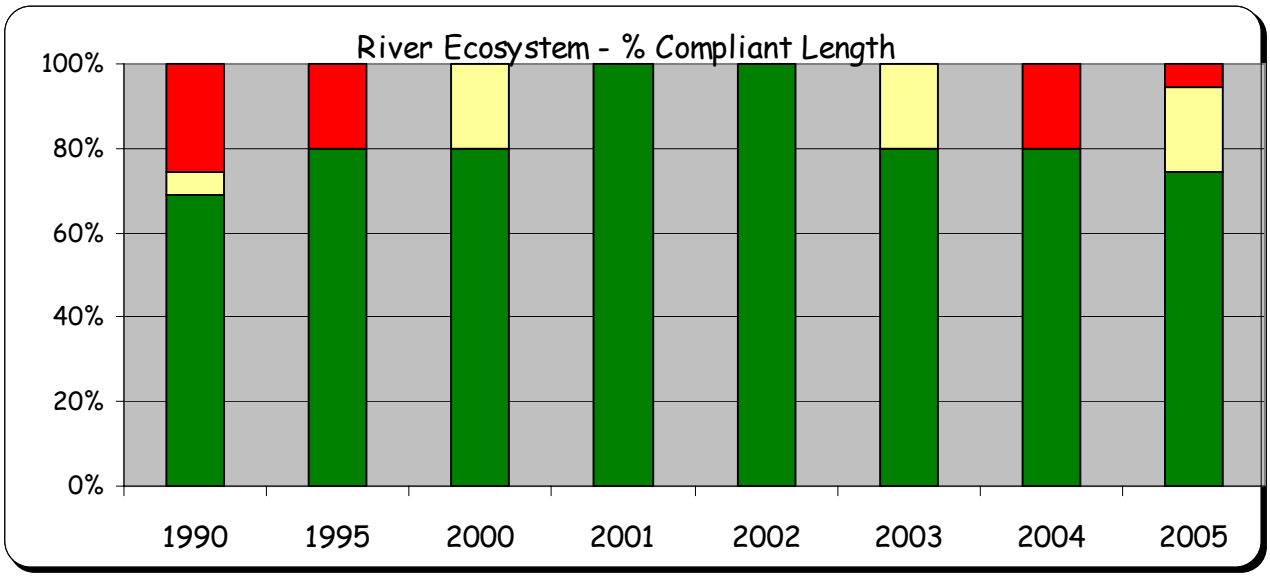
Taken from Environment Agency

Table 19: River Summary Report for Brentwood Borough

River Ecosystem Scheme	1990	1995	2000	2001	2002	2003	2004	2005
Significant Failure (km)	7	5.5	0	0	0	0	5.5	1.5
Marginal (km)	1.5	0	5.5	0	0	5.5	0	5.5
Pass (km)	19	22	22	27.5	27.5	22	22	20.5
Total Length (km)	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5

Taken from Environment Agency Rivers Summary Report

Figure 22:



Taken from Environment Agency Rivers Summary Report

Whilst 2005 saw an improvement in the river ecosystem of the Borough from 2004, there has been a recent downturn in river ecosystem quality. Between 2000 and 2003, there were no instances of a river failing its RE scheme. For two successive years, 2001 and 2002, 100% of the total lengths of rivers surveyed in the Borough passed the scheme. In 2003, 5.5km of the total 27.5km surveyed achieved a marginal pass. The same length of river was reported as failing its RE scheme requirements in 2004, although this is seen to decrease in 2005 to 1.5km. The total length of river that achieved a full pass in 2005, 20.5km, can be seen to be the lowest since 1990 based on information received.

The following material analyses the individual river stretches sampled for this scheme in more detail, focussing on the reasons behind any RE scheme failures that may be highlighted.

Table 20: River Wid Compliance with Target

River name	River stretch	Years	Target	Compliance
Chainbridge TR	Headwaters…Wid	2003 to 2005	4	Compliant
Haverings Grove BRK	Ingrave STW…Wid	2003 to 2005	4	Compliant
Wid	Chain Bridge Tributary…Chainbridge	2003 to 2005	4	Compliant
Wid	Chainbridge…Wash Road Trib	2003 to 2005	3	Compliant
Wid	Haveringsgrove Brook…Ingatestone STW	2003 to 2005	3	Significant Failure
Wid	Headwaters…Chain Bridge Tributary	2003 to 2005	4	Significant Failure
Wid	Shenfield STW…Haveringsgrove Brook	2003 to 2005	3	Marginal
Wid	Wash Road Trib…Shenfield STW	2003 to 2005	3	Marginal

Taken from Environment Agency (http://maps.environment-agency.gov.uk/wiyby/wiybyController?extraClause=COUNTY~'Brentwood%20Borough%20Council'&extraClause=REPORT_YEAR~'2003%20to%202005') 2007

Table 20 shows that two stretches of the River Wid are 'Significantly' failing the RE scheme:

- River Wid, Haveringsgrove Brook to Ingatestone STW - this stretch of the river is expected to achieve an overall grade of 3, that is, a river stretch of fair water quality suitable for high class coarse fish populations. However, this river stretch reports a

90th percentile of 57.77% for dissolved oxygen, and this places the river in grade 4. All other criteria for this stretch are within the parameters of grade 3, although biochemical oxygen demand is only marginally compliant.

- River Wid, Headwaters to Chain Bridge Tributary - this river stretch has the target of achieving grade 4. This target is failed due to a dissolved oxygen percentage saturation of 43.67%. To achieve a grade 4, a percentage saturation of 50% is required. All other graded criteria are compliant with the requirements of the target grade 4.

Possible explanations for a lower than expected dissolved oxygen content are large amounts of dissolved or suspended solids being present in the water, high amounts of nutrients leading to potential eutrophication, organic waste and groundwater inflow.

Table 21: Haveringsgrove Brook … Ingatestone STW Stretch, River Wid

River name	River stretch	Years	Upstream grid ref.	Downstream grid ref.	Length
WID	HAVERINGSGROVE BROOK...INGATESTONE STW	2003 to 2005	X:565400, Y:196000	X:566400, Y:199000	4km

Criteria	Average	Standard deviation	Percentile 95	Percentile 90	Percentile 10	Number of samples	Compliance
Biochemical oxygen demand (mg/l)	2.88	7.29		4.08		36	Marginal
Ammonia (mgN/l)	0.497	1.46		0.673		36	Compliant
Dissolved oxygen (percentage saturation)	77.18	20.35			57.77	36	Significant Failure
Un-ionised ammonia (mgN/l)	0.01	0.0138	0.01115			36	Compliant
pH acid	7.72	0.229	7.43			36	Compliant
pH alkali	7.72	0.229	8.01			36	Compliant
Hardness (mg/l CaCO3)	999						
Dissolved copper (ug/l)	0	0	0			0	Ungraded
Total zinc (ug/l)	0	0	0			0	Ungraded

Information taken from Environment Agency (http://maps.environment-agency.gov.uk/wiyby/queryController?topic=riverquality&ep=2ndtierquery&lang=_e&layerGroups=1&x=566400.0&y=199000.0&extraClause=STRETCH_CODE~'037040026004'&extraClause=YEAR~2005) 2007

Table 22: Headwaters … Chain Bridge Tributary, River Wid

River name	River stretch	Years	Upstream grid ref.	Downstream grid ref.	Le
WID	HEADWATERS...CHAIN BRIDGE TRIBUTARY	2003 to 2005	X:560400, Y:201600	X:562100, Y:197100	5.5

Criteria	Average	Standard deviation	Percentile 95	Percentile 90	Percentile 10	Number of samples	Compliance
Biochemical oxygen demand (mg/l)	2.1	0.95		2.89		36	Compliant
Ammonia (mgN/l)	0.898	0.843		1.398		36	Compliant
Dissolved oxygen (percentage saturation)	60.83	17.99			43.67	36	Significant Failure
Un-ionised ammonia (mgN/l)	0.01	0.00726	0.0182			36	Compliant
pH acid	7.7	0.19	7.46			36	Compliant
pH alkali	7.7	0.19	7.95			36	Compliant
Hardness (mg/l CaCO3)	999						
Dissolved copper (ug/l)	0	0	0			0	Ungraded
Total zinc (ug/l)	0	0	0			0	Ungraded

Information taken from Environment Agency (http://maps.environment-agency.gov.uk/wiyby/queryController?topic=riverquality&ep=2ndtierquery&lang=_e&layerGroups=1&x=566400.0&y=199000.0&extraClause=STRETCH_CODE~'037040026004'&extraClause=YEAR~2005) 2007

ii) General Quality Assessment

The Environment Agency uses the GQA scheme to classify the water quality of rivers and canals. It has been designed to provide a consistently accurate classification system which can accurately asses the state of water quality and how this changes over time. For each site, a stretch of river is assigned which is of the same general character as the site itself. Sites are sampled a minimum of 12 times a year, at 6km intervals, and the data is collected over 3 years to provide 36 separate samples. Any extreme data values are excluded. The figures reported in the tables are for the years 1990, 1995 and 2000 - 2005, whilst all information pertaining to individual rivers is for the years 2003-2005.

The four parts of the GQA that will be examined in this report are Chemistry, Biology, Nitrates and Phosphates. The situation in Essex will be examined first, followed by a comparison of Brentwood Borough's results against both Essex and the East of England. Any problematic stretches of water in the Borough will also be highlighted.

a) Chemistry

Chemical GQA is calculated by analysing the concentrations of dissolved oxygen, biochemical oxygen demand and ammonia, according to following criteria.

Table 23: Chemistry GQA Grade Boundaries

GQA grade	**Dissolved oxygen** (% saturation) 10-percentile	**Biochemical oxygen demand** (mg/l) 90-percentile	**Ammonia** (mgN/l) 90-percentile
A	80	2.5	0.25
B	70	4	0.6
C	60	6	1.3
D	50	8	2.5
E	20	15	9.0
F	<20	-	-

Taken from Environment Agency (www.environment-agency.gov.uk/commondata/acrobat/chemistry.pdf) 2007

Table 24: Likely Use and Characteristics of Chemistry GQA Grade

Chemical grade		Likely uses and characteristics*
A	Very good	All abstractions Very good salmonid fisheries Cyprinid fisheries Natural ecosystems
B	Good	All abstractions Salmonid fisheries Cyprinid fisheries Ecosystems at or close to natural
C	Fairly good	Potable supply after advanced treatment Other abstractions Good cyprinid fisheries Natural ecosystems, or those corresponding to good cyprinid fisheries
D	Fair	Potable supply after advanced treatment Other abstractions Fair cyprinid fisheries Impacted ecosystems
E	Poor	Low grade abstraction for industry Fish absent or sporadically present, vulnerable to pollution** Impoverished ecosystems**
F	Bad	Very polluted rivers which may cause nuisance Severely restricted ecosystems

Taken from Environment Agency (www.environment-agency.gov.uk/commondata/acrobat/chemistry.pdf) 2007

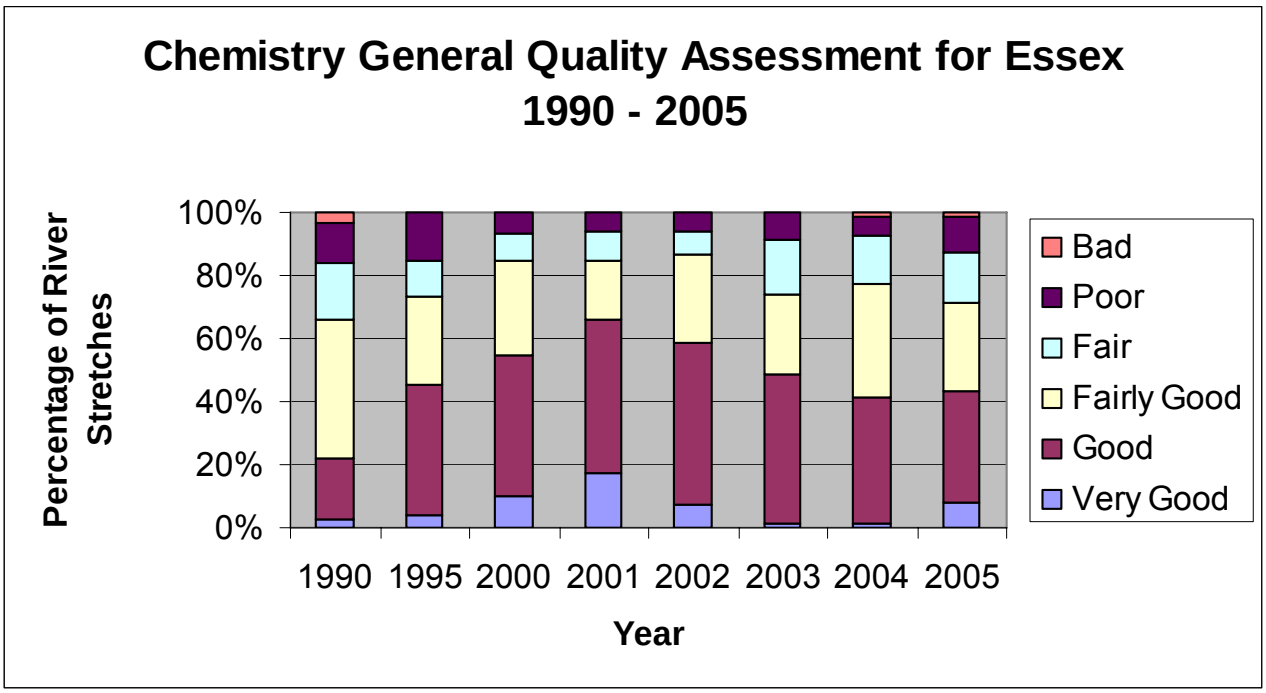
It is important to realise that rivers can lie close to the edge of a grade boundary and that for to financial reasons, it is impossible to monitor a river stretch continuously. These two facts combine to produce a risk of 19% that a river sampled 36 times will be graded incorrectly.

Table 25: Essex Chemistry GQA

Year	Total Length (Km)	Classified Length (Km)	% Very Good	% Good	% Fairly Good	% Fair	% Poor	% Bad
1990	665.2	654.7	2.48	19.83	43.37	18.14	12.88	3.3
1995	672.2	672.2	4.06	41.23	28.32	11.2	15.19	0
2000	672.2	672.2	10.07	44.31	30.45	8.66	6.52	0
2001	672.2	672.2	17.42	48.27	19.18	9.16	5.96	0
2002	672.2	672.2	7.58	50.87	28.09	7.76	5.71	0
2003	672.2	672.2	1.52	47.29	25.1	17.64	8.45	0
2004	629.6	629.6	1.26	39.83	36.33	15.43	5.98	1.18
2005	648.1	648.1	7.98	35.19	28.09	16.25	11.35	1.14

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_chemistry_2005_1180392.doc) 2007

Figure 23:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_chemistry_2005_1180392.doc) 2007

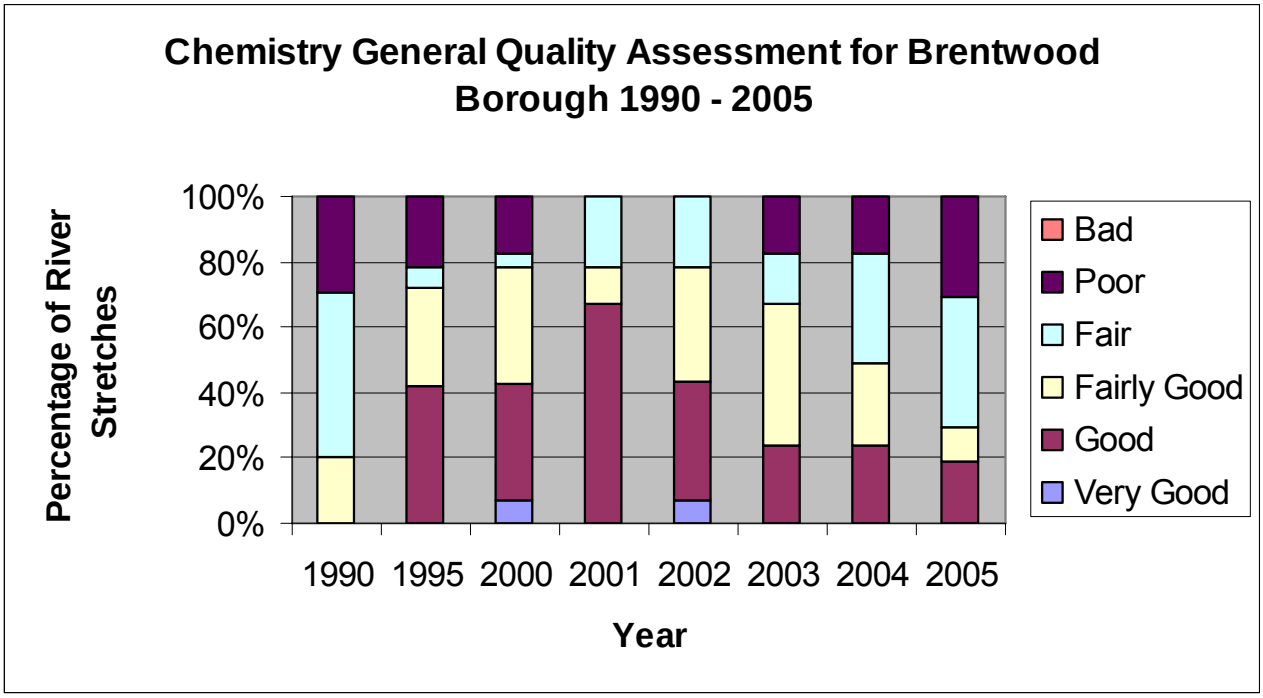
The chemical quality of Essex waters seems to have generally fallen since the high of 2001. 2001 saw 17.42% of the total river length be graded as 'Very Good'. This is also the highest proportion seen in any year. The highest proportion of a river being described as 'Good' occurred in 2002 at 50.87%, with the highest proportion of 'Bad' stretches of river, at 3.3%, being reported in 1990. The figures reported in 2005 show over 5 times the proportion of river stretches in 2004 being graded as being 'Very Good', as well as the highest proportion for 3 years (7.98%) although the proportion of 'Good' (35.19%) is lower than all years except 1990. The proportion of 'Fairly Good' chemical quality is also smaller in 2005 than 2004.

Table 26: Brentwood Borough Chemical GQA

Year	Total Length (Km)	Classified Length (Km)	% Very Good	% Good	% Fairly Good	% Fair	% Poor	% Bad
1990	30	30	0	0	20.08	50.34	29.58	0
1995	31.4	31.4	0	42	30.08	6.2	21.73	0
2000	31.4	31.4	7.21	35.76	35.3	4.42	17.32	0
2001	31.4	31.4	0	67.31	10.96	21.73	0	0
2002	31.4	31.4	7.21	35.8	35.25	21.73	0	0
2003	31.4	31.4	0	23.82	43.48	15.38	17.32	0
2004	31.4	31.4	0	23.82	25.39	33.47	17.32	0
2005	39.7	39.7	0	18.8	10.59	39.63	30.98	0

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_chemistry_2005_1180392.doc) 2007

Figure 24:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_chemistry_2005_1180392.doc) 2007

In general, the Borough's rivers are not in as good a condition chemically as those found across Essex as a whole. Across the majority of years, there are generally smaller proportions of river lengths considered to be 'Good'. A notable exception is witnessed in 2001, where 67.31% of the Borough's rivers were found to have a 'Good' chemistry GQA. There has also been a complete absence of river stretches classified as 'Very Good' since 2003. Whilst the situation in 2005 is evidently better than that witnessed in 1990, where no stretch of river was graded either 'Very Good' or 'Good', it could be argued that the situation is now worse than in any of the other years for which data has been received. 30.98% of the rivers in the Borough have been designated as being 'Poor' in 2005, which is the highest proportion across all the years for which data has been received. The proportion of river length that is considered to have only a 'Fair' Chemistry GQA in 2005, 39.63%, is second only to the 50.34% reported in 1990. Finally, excluding 1990, where no stretch of river was awarded a 'Good' rating, 2005 saw the smallest percentage of river length awarded this rating, at 18.8%.

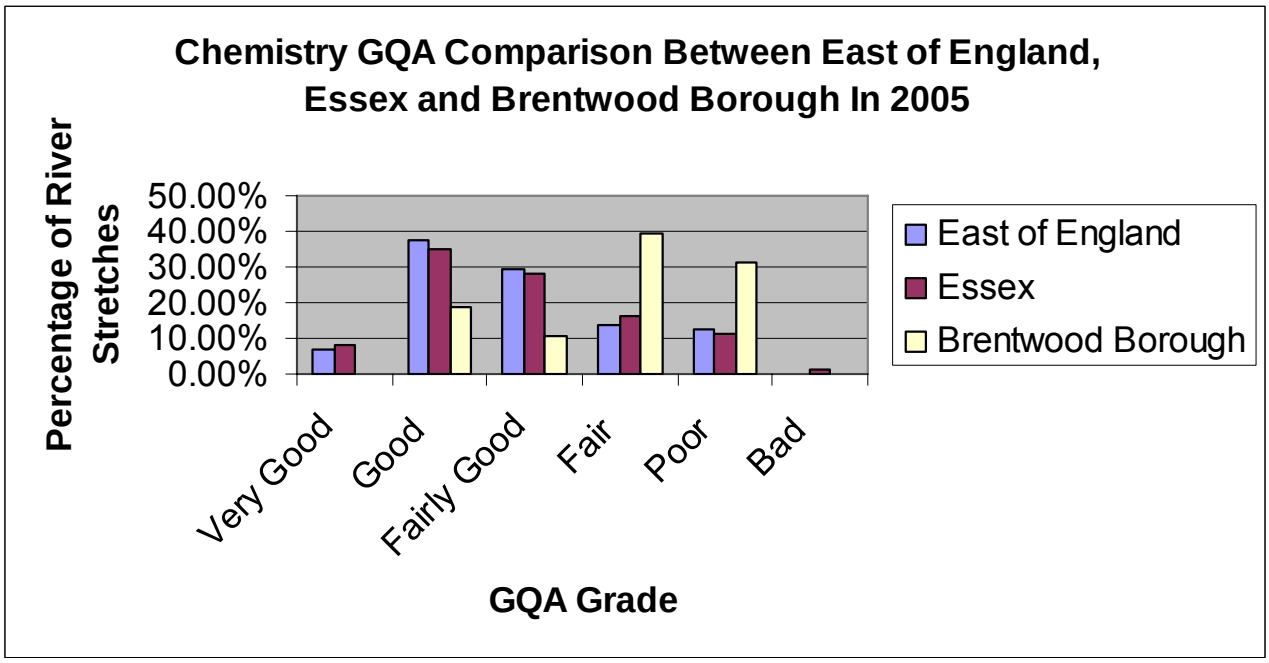
The following material allows for a comparison of the Borough with County and Regional data.

Table 27: Comparison Between Chemical GQA At The Regional, County and Borough Level

	East of England	Essex	Brentwood Borough
Very Good	7.04%	7.98%	0%
Good	37.67%	35.19%	18.80%
Fairly Good	29.20%	28.09%	10.59%
Fair	13.49%	16.25%	39.63%
Poor	12.39%	11.35%	30.98%
Bad	0.21%	1.14%	0%

Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_chemistry_2005_1180392.doc) 2007

Figure 25:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_chemistry_2005_1180392.doc) 2007

Evidently, the chemistry of the rivers in Brentwood Borough is of a lower quality than both Essex and the East of England in 2005. The proportions rated as being 'Poor' and 'Bad' are more than double that seen either regionally or at the County level. The one area where performance is better in the Borough is in the length of rivers that are rated as 'Bad', the lowest possible level. In the Borough, this is reported as 0%, compared to 1.14% in Essex and 0.21% regionally.

8 stretches of river have been monitored in more detail. 4 of these 8 stretches have been graded beneath a C, and are detailed in Table 28.

From Table 28, it can be seen that the percentage saturation of dissolved oxygen is responsible for the low grading of the Wash Road stretch, which achieved the maximum possible grades for the two remaining criteria. The Headwaters stretch also has the percentage saturation of dissolved oxygen as its weakest performing criteria, although the D grade awarded due to the high concentrations of ammonia would also highlight this river as being a problematic stretch. Haveringsgrove Brook was given D grades in the percentage saturation of dissolved oxygen criteria as well as for its biochemical oxygen demand, with the remaining criterion marked as a C. The Shenfield STW river length achieved this grade for all criteria other than for its biochemical oxygen demand, which was graded at D.

Biochemical oxygen demand is affected by many of the same factors which affect the amount of dissolved oxygen in rivers and streams, and are briefly identified above.

Table 28: Rivers Within The Borough Achieving Less Than Grade C For Chemistry GQA 2003 - 2005

River Name	River Stretch	Years	Upstream grid ref.	Downstream grid ref.	Length	
Wid	Headwaters…Chain Bridge Tributary	2003 to 2005	X:560400, Y:201600	X:562100, Y:197100	5.5km	
Criteria	**Average**	**Standard deviation**	**Percentile 90**	**Percentile 10**	**Number of samples**	**Grades**
Biochemical oxygen demand (mg/l)	2.15	0.86	3.28		36	B
Ammonia (mgN/l)	0.898	0.843	1.814		36	D
Dissolved oxygen (percentage saturation)	60.83	17.99		37.77	36	E
River name	**River stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**	
Wid	Haveringsgrove Brook…Ingatestone STW	2003 to 2005	X:565400, Y:196000	X:566400, Y:199000	4km	
Criteria	**Average**	**Standard deviation**	**Percentile 90**	**Percentile 10**	**Number of samples**	**Grades**
Biochemical oxygen demand (mg/l)	3.01	7.24	6.83		36	D
Ammonia (mgN/l)	0.498	1.459	1.105		36	C
Dissolved oxygen (percentage saturation)	77.18	20.35		51.1	36	D
River name	**River stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**	
Wid	Shenfiled STW…Haveringsgrove Brook	2003 to 2005	X:565200, Y:195900	X:565400, Y:196000	0.5km	
Criteria	**Average**	**Standard deviation**	**Percentile 90**	**Percentile 10**	**Number of samples**	**Grades**
Biochemical oxygen demand (mg/l)	3.18	5.44	7.18		36	D
Ammonia (mgN/l)	0.418	0.687	0.943		36	C
Dissolved oxygen (percentage saturation)	84.64	11.98		69.27	36	C
River name	**River stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**	
Wid	Wash Road Tributary…Shenfield STW	2003 to 2005	X:563600, Y:196200	X:565200, Y:195900	1.5km	
Criteria	**Average**	**Standard deviation**	**Percentile 90**	**Percentile 10**	**Number of samples**	**Grades**
Biochemical oxygen demand (mg/l)	1.59	0.53	2.29		32	A
Ammonia (mgN/l)	0.096	0.119	0.207		32	A
Dissolved oxygen (percentage saturation)	84.8	20.41		58.63	32	D

Taken from Environment Agency (http://maps.environment-agency.gov.uk/wiyby/wiybyController?extraClause=COUNTY~'Brentwood%20Borough%20Council'&extraClause=REPORT_YEAR~'2003%20to%202005') 2007

b) Biology

Biology GQA is based around the macro-invertebrate communities of rivers and canals. These include insects such as mayflies and caddis-flies, together with snails, worms, shrimps and others. Macro-invertebrates are good bio-indicators as they respond to everything that is in the water, they are found in virtually all fresh waters and do not move far. They are even affected by infrequently occurring pollutants which may be missed by other sampling techniques. There are however natural differences in the types of species that one would expect to find and this is dependent on the numerous variable characteristics of a river. Consequently, Biology GQA is calculated as the difference between what one would expect to find in an unpolluted river of that type, and what is actually present in the river that is being sampled.

Some animals are more susceptible to pollution than others, and therefore the presence of these animals is a good sign that the water is unpolluted. This fact is taken into account by a scoring system on 80 different taxa, awarded due to their susceptibility to organic pollution. The average value for each taxon in a sample is known as the Average Score per Taxon (ASPT) and it is considered to be a stable and reliable index of organic pollution.

Both the ASPT and the number of taxa (NTAXA) in samples is divided by the expected results for an uncontaminated river of the same type. These proportional values are called Ecological Quality Indices (EQI), and an EQI of approximately 1 indicates a river free of pollutants. An EQI above 1 is indicative of a river which is of greater ecological quality than the average for an unpolluted river of that type. The advantage of EQI is that it allows widely different rivers with a variety of biological communities to be assessed using the same method.

Table 29 summarises the Biology GQA boundaries, along with a short description in Table 30 of what the Grades indicate.

Table 29: Biology GQA Grade Boundaries

Table B1: Biological grades			
Grade	EQI for ASPT	EQI for number of taxa	Environmental quality
a	1.00	0.85	very good
b	0.90	0.70	good
c	0.77	0.55	fairly good
d	0.65	0.45	fair
e	0.50	0.30	poor
f	-	-	bad

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/acrobat/bio_method_09_03_559881.pdf) 2007

Table 30: Description of Biology GQA Grade Boundaries

Grade	Description
A	The biology is similar to (or better than) expected for an average, unpolluted river of this size, type and location. There is a wide variety of families, each including several species, and it is rare to see a dominance of any one family.
B	The biology falls a little short of that expected for an unpolluted river of this size, type and location. There may be a small reduction in those animals most susceptible to pollution alongside a moderate increase in the number of species more resistant to pollution e.g. worms and midges. This may also indicate the first signs of organic pollution.
C	The biology is worse than that expected for this type of river. Many of the sensitive families are absent or the number of individuals is reduced, and in many cases there is a rise in the number of individuals in the families that tolerate pollution.
D	There is a considerable difference between the biology present and what would be expected in an unpolluted river. Sensitive families are scarce and contain only a small number of individuals. There may be a range of those families that tolerate pollution and some of these may have high numbers of individuals.
E	The biology is restricted to animals which tolerate pollution with some families dominant in terms of the number of individuals. Sensitive families will be rare or entirely absent.
F	The biology is limited to a very small number of tolerant families. These may be present in very high numbers but even these may be missing if the pollution is toxic. In the worst case there may be no life present in the water at all.

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/acrobat/bio_method_09_03_559881.pdf) 2007

From 2002, sites have been sampled once every 3 years. Each biological site corresponds to a stretch of river also characterised by a chemical site. These two sites may not always be coincident; but they are subject to the same water quality and should not be separated by features such as tributaries or other influences on water quality. Samples are taken in spring and autumn to allow for seasonal variation. 10% of all samples are re-inspected as part of a quality control scheme.

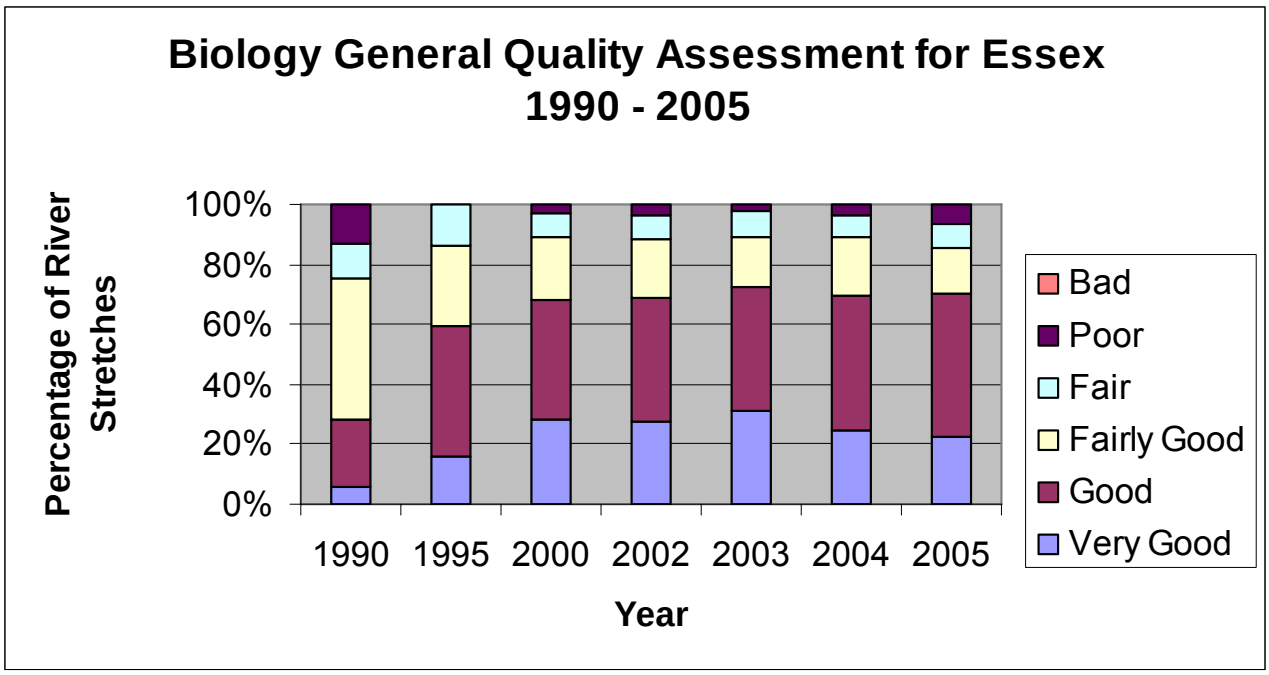
Similar to the Chemistry GQA, the fact that many rivers lie close to a Grade boundary can lead to rivers being placed in the wrong grade category. A taxon present in the sample may fail to be recorded, or, although rarer, a taxon may be recorded that isn't present in the sample. This leads to the Biology GQA having a 22% chance of placing the water sample in the wrong grade boundary, with a 10% chance of an over-estimate, and 12% of an under-estimate.

Table 31: Essex Biology GQA

Year	Total Length (Km)	Classified Length (Km)	% Very Good	% Good	% Fairly Good	% Fair	% Poor	% Bad
1990	645.2	564.9	5.71	22.78	47.07	11.54	12.9	0
1995	676.5	661	15.81	43.89	26.61	13.47	0.23	0
2000	676.1	660.6	28.23	39.72	20.84	8.06	3.14	0
2002	676.1	660.6	27.74	41.3	19.44	7.56	3.96	0
2003	677.8	638.6	31.32	41.05	16.7	9	1.93	0
2004	590.3	590.3	24.42	45.08	19.38	7.82	3.29	0
2005	590	590	22.26	47.7	15.73	7.76	6.55	0

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_biology_data_2005_1180384.doc) 2007

Figure 26:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_biology_data_2005_1180384.doc) 2007

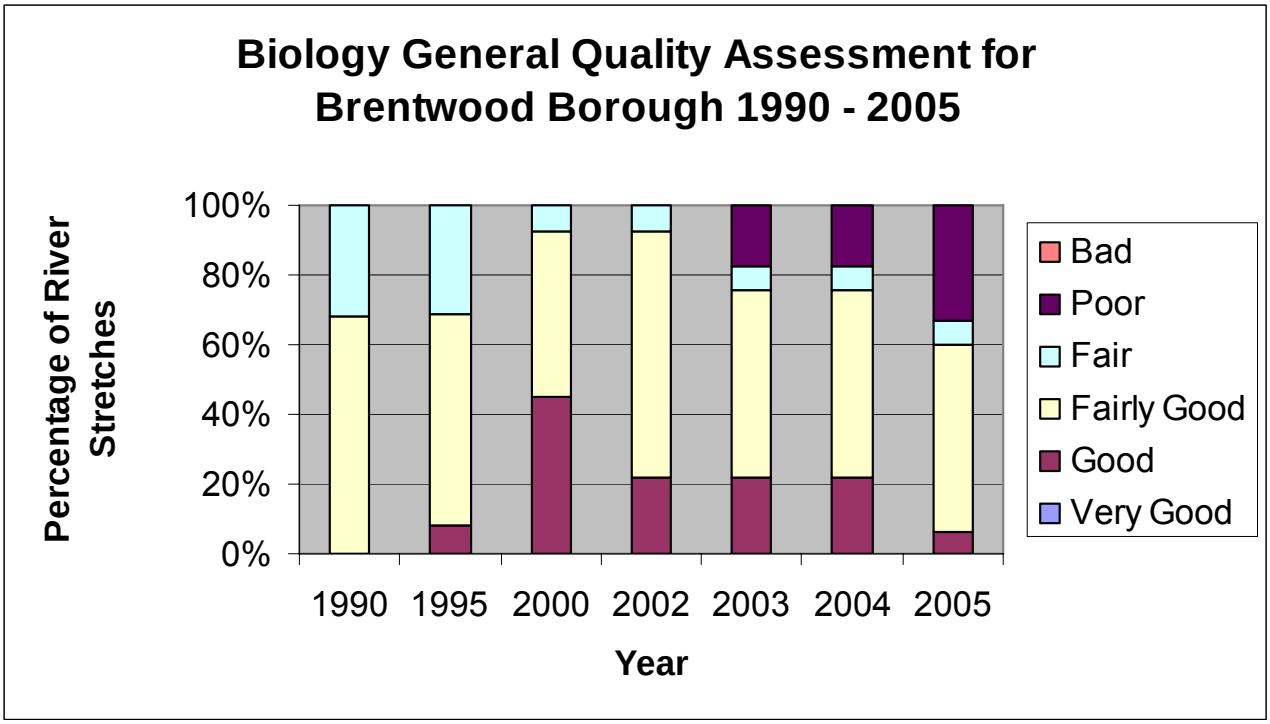
2003 was the year where biological water quality was the highest within the County. 31.32% of waters were classified as 'Very Good' during this year, which is the highest for the dates that are available. The percentage of 'Poor' quality waters was the second lowest that year. None of the County's river systems were classified as being of a 'Bad' biological quality during any of the years included in this study. 2005 saw a slight downturn from the biological quality seen in 2004. 24.42% of rivers were classified as 'Very Good' in 2004, compared to 22.26% in 2005. Conversely, the proportion of river courses given a 'Good' grade in 2005, 47.7%, is approximately 2% above that in 2004. Whilst no stretch of water was deemed to be of a 'Bad' quality in 2005 or any other year, the proportion of river stretches assessed as being 'Poor', 6.55%, is second only to the 12.9% recorded in 1990. The current figure is also almost double that seen in 2004.

Table 32: Brentwood Borough Biology GQA

Year	Total Length (Km)	Classified Length (Km)	% Very Good	% Good	% Fairly Good	% Fair	% Poor	% Bad
1990	30	30	0	0	67.86	32.14	0	0
1995	31.4	31.4	0	8.15	60.82	31.03	0	0
2000	31.4	31.4	0	45.07	47.72	7.21	0	0
2002	31.4	31.4	0	21.62	71.17	7.21	0	0
2003	31.4	31.4	0	21.62	53.85	7.21	17.32	0
2004	31.4	31.4	0	21.62	53.85	7.21	17.32	0
2005	31.4	31.4	0	6.24	53.54	7.21	33.01	0

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_biology_data_2005_1180384.doc) 2007

Figure 27:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_biology_data_2005_1180384.doc) 2007

Biological water quality was highest within the Borough during 2000. 45.07% of sampled river courses were said to be in a 'Good' condition, a proportion more than double any other year. 7.21% of rivers were graded as being of 'Fair' biological quality, and this has been the case since 2000. Similar to every other year, there are no instances of a river stretch being graded 'Very Good'. In 2000 there were also no instances of a river being awarded the lowest grading, which is again common throughout all the years. However, all years up to 2002 also display no river stretches of a 'Poor' quality. Both 2003 and 2004 had 17.32% of its river stretches being of this biological GQA grade, whilst 2005 saw almost double the proportion of river lengths being of this grading, at 33.01%.

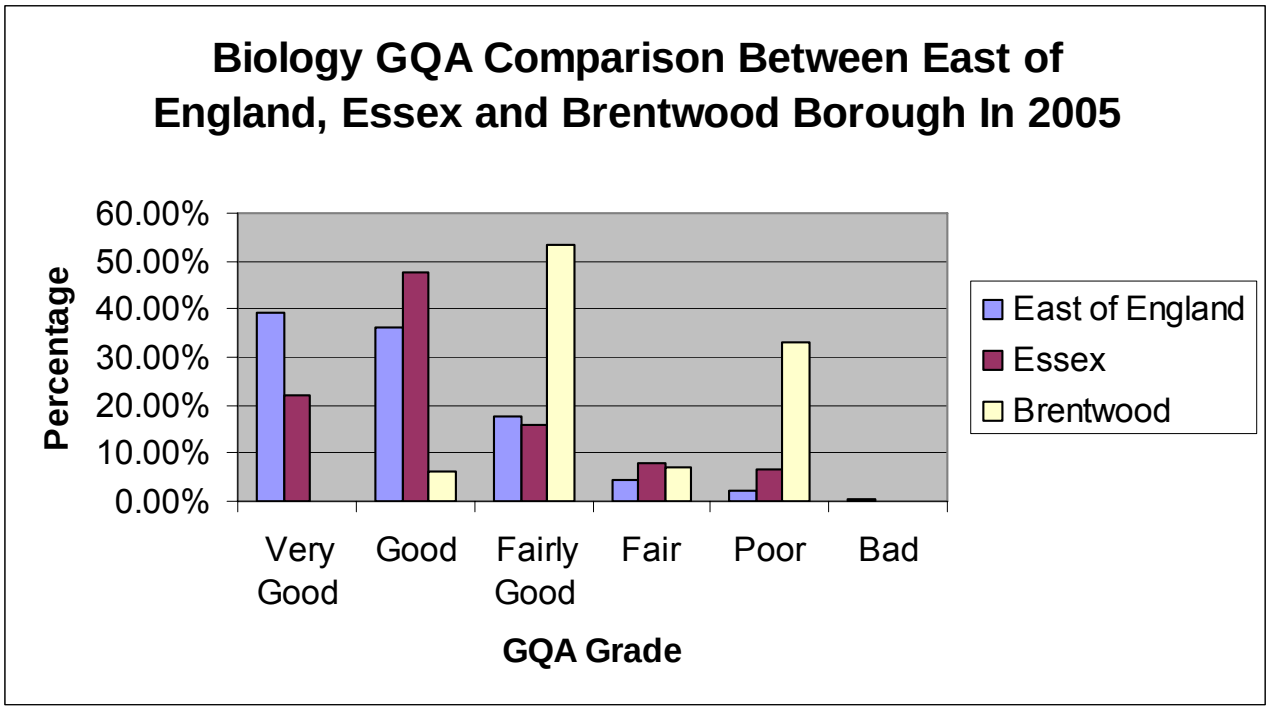
Water quality can be seen to have fallen since 2002, with 2003 and 2004 both scoring identically, and 2005 showing a further deterioration. As well as having the largest proportion of rivers being biologically 'Poor', 2005 also had the second smallest proportions of rivers displaying 'Good' (6.24%) or 'Fairly Good' (53.54%) grades.

Table 33: Comparison Between Biological GQA At The Regional, County and Borough Level

	East of England	Essex	Brentwood
Very Good	39.46%	22.26%	0%
Good	36.33%	47.70%	6.24%
Fairly Good	17.45%	15.73%	53.54%
Fair	4.41%	7.76%	7.21%
Poor	2.07%	6.55%	33.01%
Bad	0.29%	0%	0%

Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_biology_data_2005_1180384.do) 2007

Figure 28:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_biology_data_2005_1180384.do) 2007

The biological quality of the Borough's rivers is also lower than that of both the East of England and Essex. The proportion which is considered to be of 'Poor' quality in the Borough (33.01%) is over 5 times that of the county (6.55%) and 15 times that of the regional level (2.07%). There is an absence of water graded at 'Very Good' at the Borough level although this can be found in the East of England (39.46%) and Essex (22.26%). The majority of water quality in the Borough has been graded as being 'Fairly Good', at 53.54%.

None of the 3 rivers surveyed in greater detail have been awarded a grade lower than a C. The results for those three river stretches are reproduced in Table 34.

Table 34: Rivers Within The Borough Achieving Less Than Grade C For Biology GQA

River name	River stretch	Year	Upstream grid ref.	Downstream grid ref.	Length	
Wid	Chain Bridge Tributary…Chainbridge	2005	X:562100, Y:197100	X:562500, Y:197000	0.5Km	
Criteria	**Observed**	**Expected**	**Observed/Expected**	**Probability grade %**	**Season code**	**Grade**
NTAXA	21	29.6	0.71	65		B
ASPT	4.14	5.28	0.78	76		C
Overall					5	C
River name	**River stretch**	**Year**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**	
Wid	Chainbridge…Wash Road Tributary	2005	X:562500, Y:197000	X:563600, Y:196200	1.5km	
Criteria	**Observed**	**Expected**	**Observed/Expected**	**Probability grade %**	**Season code**	**Grade**
NTAXA	21	29.6	0.71	65		B
ASPT	4.14	5.28	0.78	76		C
Overall					5	C
River name	**River stretch**	**Year**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**	
Wid	Wash Road Tributary…Shenfield STW	2005	X:563600, Y:196200	X:565200, Y:195900	1.5km	
Criteria	**Observed**	**Expected**	**Observed/Expected**	**Probability grade %**	**Season code**	**Grade**
NTAXA	21	29.6	0.71	65		B
ASPT	4.14	5.28	0.78	76		C
Overall					5	C

Taken from Environment Agency (http://maps.environment-agency.gov.uk/wiyby/wiybyController?extraClause=COUNTY~'Brentwood%20Borough%20Council'&extraClause=YEAR~2005) 2007

As can be seen from Table 34, none of the river stretches analysed by the Environment Agency fell below a Grade C in the Biological GQA. In fact, each river scored the same in both of the categories that make up the Biological GQA. The number of taxa present in each of the three stretches is sufficient to award a B grade, although when values are prescribed to those taxa present, the achieved score is only adequate for a C grade. It is noticed however that the ASPT score is just 0.01 away from also being awarded a B grade.

c) Nutrients

Each sampling site for a Nutrient GQA is assigned by choosing a stretch of river which is characteristic of the site. These sites are largely the same as those used to take decisions on developments that may affect water quality such as discharges, abstractions and changes in land use. The samples are analysed for their concentrations of two nutrients, nitrate and phosphate. For phosphorous, total reactive phosphorous is measured using a flow-injection colorimetric method on unfiltered samples. The results are recorded as measurements of orthophosphate (mg P/l) and nitrate recorded as total oxidised nitrogen (mg NO_3/l). The figures are averaged from samples taken over 3 years. This will reduce variation caused by unusual weather conditions. All the results from the 3 years are included, although extreme data values are excluded.

The Classification Method allocates a grade from 1 to 6 to both nitrate and phosphate. These two nutrients cannot be combined into a single nutrient grade and as such they need to be looked at separately. There are also no prescribed 'good' or 'bad' concentrations for nutrients as there are for both chemical and biological GQAs. Rivers in different parts of the country will have naturally different concentrations of nutrients.

The classification scheme uses average concentrations so that changes over time can be detected. There are existing policies to reduce phosphate and nitrate inputs but these are limited in extent. The majority of these policies may result in a river changing grade by one class or more, but rarely more. The natural conditions prevalent in East Anglia mean that it is unlikely that rivers in this region will achieve class 1 or class 2 status because nutrient concentrations are naturally greater in this part of the country than in the uplands.

d) Phosphates

Table 35: Phosphate GQA Grade Boundaries

Classification for phosphate	Grade limit (mgP/l) Average	Description
1	<0.02	Very low
2	>0.02 to 0.06	Low
3	>0.06 to 0.1	Moderate
4	>0.1 to 0.2	High
5	>0.2 to 1.0	Very high
6	>1.0	Excessively high

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/acrobat/nutrients.pdf) 2007

'High' descriptions are used for all samples where the average is more than 0.1mg/l. This is the concentration considered to be indicative of possible or future problems of

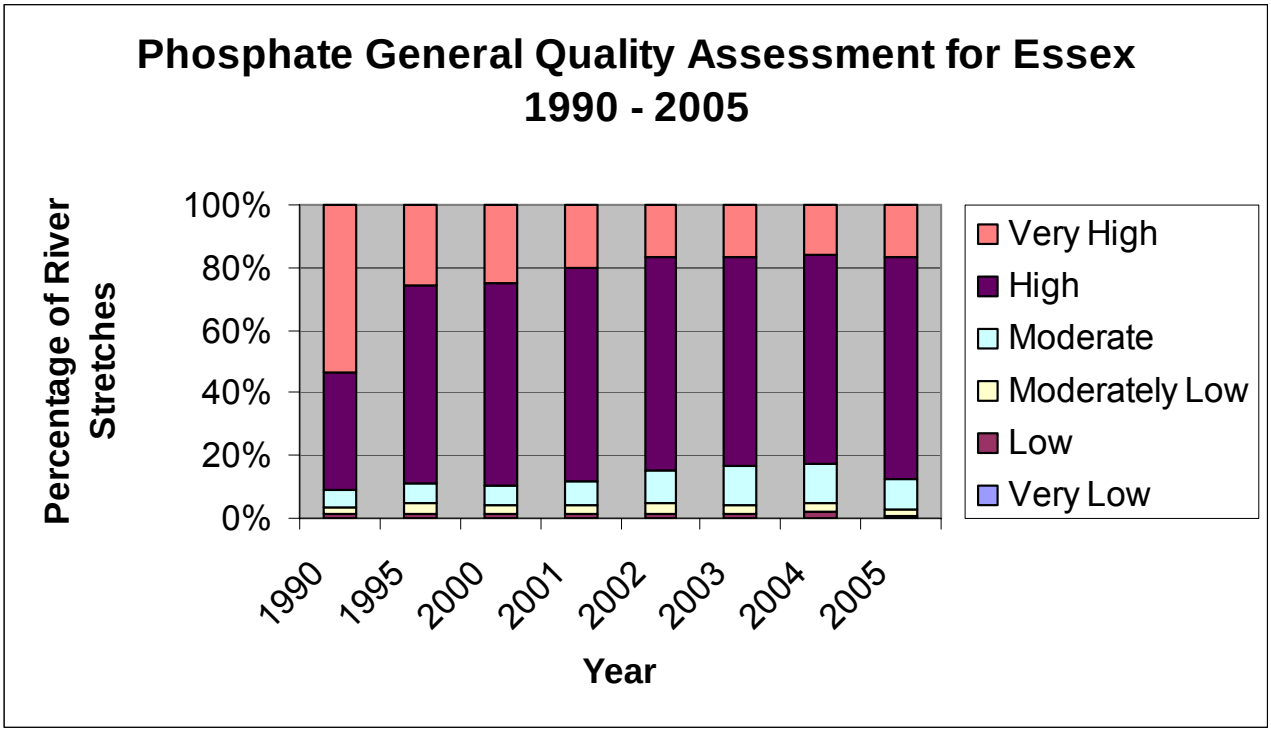
eutrophication. However, high concentrations of phosphate don't necessarily mean that the river is eutrophic as other factors such as the amount and type of algae, flow rates and dissolved oxygen concentrations need to be taken into account.

Table 36: Essex Phosphate GQA

Year	Total Length (Km)	Classified Length (Km)	% Very Low	% Low	% Moderately Low	% Moderate	% High	% Very High
1990	673.4	662.9	0	1.2	2.19	5.52	37.86	53.23
1995	672.2	672.2	0	1.42	3.55	6.45	62.59	26
2000	672.2	672.2	0	1.49	2.42	6.55	64.34	25.2
2001	672.3	672.3	0	1.49	2.85	7.19	68.07	20.39
2002	672.2	672.2	0	1.49	3.34	10.64	67.85	16.68
2003	672.3	672.3	0	1.47	2.85	12.18	66.7	16.81
2004	629.6	629.6	0	1.79	3.24	12.58	66.27	16.12
2005	605.5	605.5	0	0.54	1.99	10.16	70.97	16.33

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_phosphate_2005_1180402.doc) 2007

Figure 29:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_phosphate_2005_1180402.doc) 2007

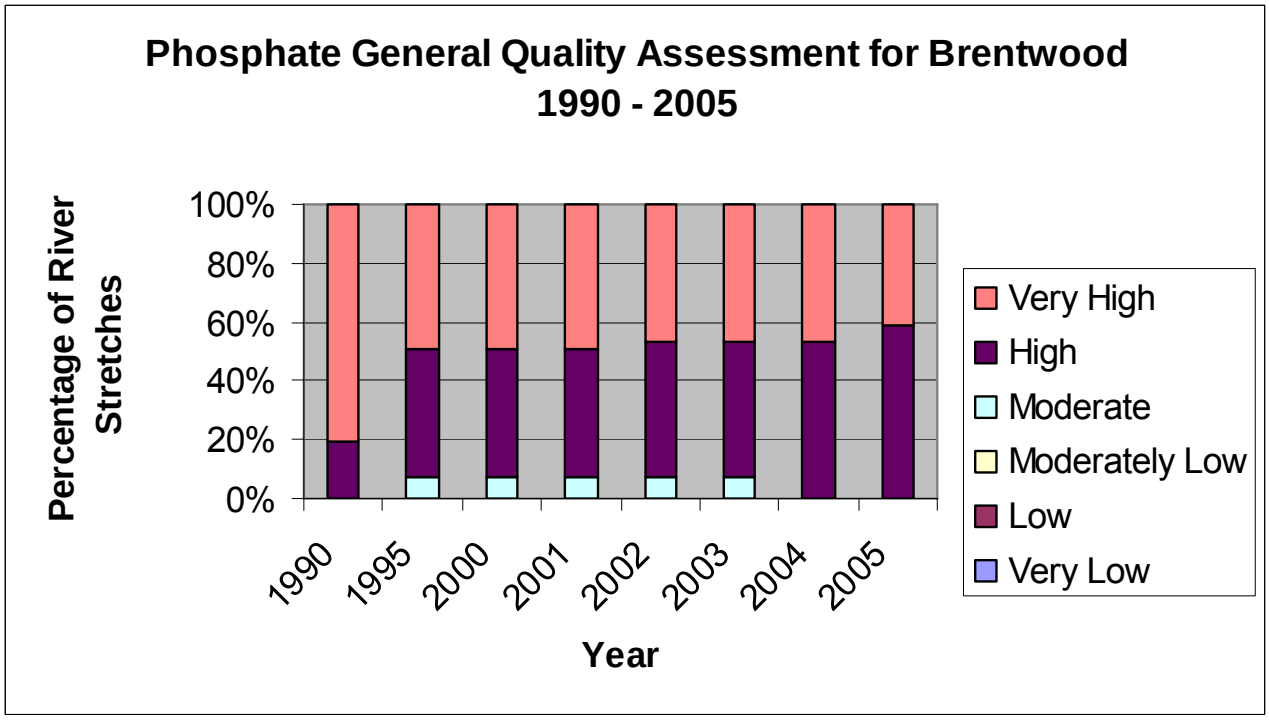
It has already been established that there are high concentrations of phosphate present in the region, and by definition, the county. This explains the bias towards high concentrations seen in the above graph. In each year, over 80% of river stretches analysed displayed concentrations of phosphate which were either 'High' or 'Very High'. Since 2002, 'Very High' concentrations of phosphate have made up between 16% and 17% of river stretches, with 'High' concentrations being between 66.27% (2004) and 70.97% (2005). 2005 displays the highest concentration of phosphates since 2001.

Table 37: Brentwood Borough Phosphate GQA

Year	Total Length (Km)	Classified Length (Km)	% Very Low	% Low	% Moderately Low	% Moderate	% High	% Very High
1990	30	30	0	0	0	0	19.01	80.99
1995	31.4	31.4	0	0	0	7.21	43.51	49.28
2000	31.4	31.4	0	0	0	7.21	43.51	49.28
2001	31.4	31.4	0	0	0	7.21	43.51	49.28
2002	31.4	31.4	0	0	0	7.21	45.91	46.88
2003	31.4	31.4	0	0	0	7.21	45.91	46.88
2004	31.4	31.4	0	0	0	0	53.12	46.88
2005	31.4	31.4	0	0	0	0	58.86	41.14

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_phosphate_2005_1180402.doc) 2007

Figure 30:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_phosphate_2005_1180402.doc) 2007

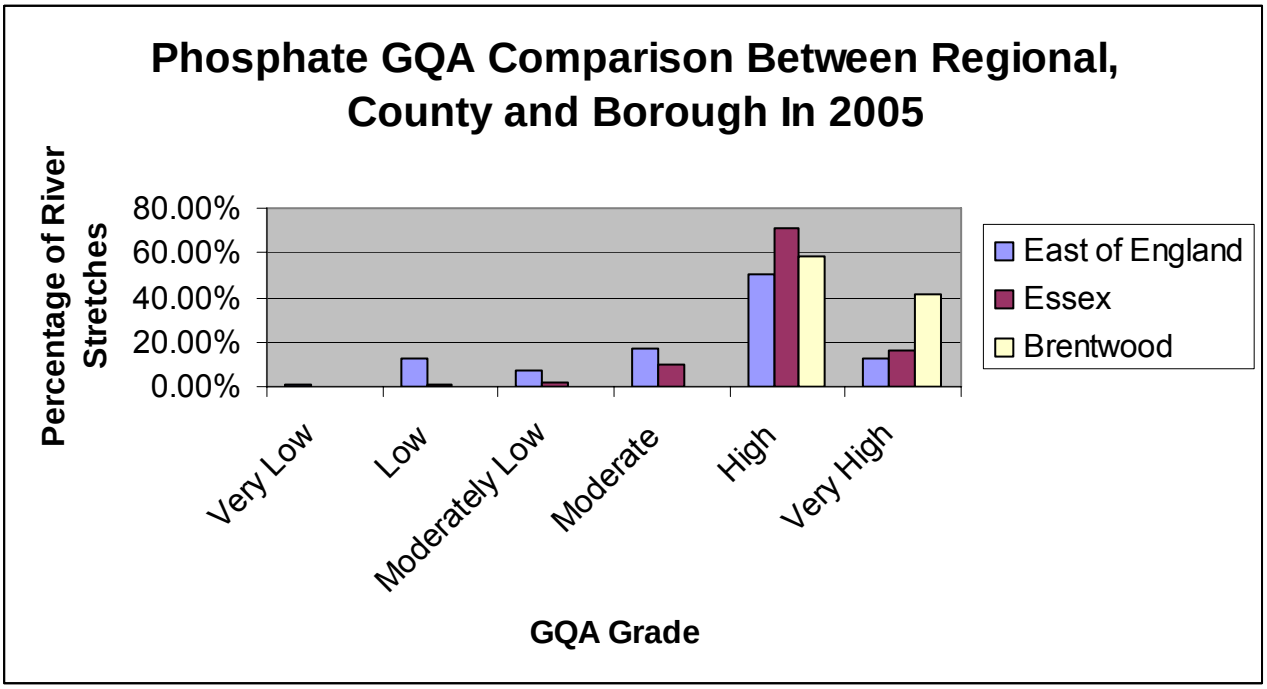
The concentrations of phosphate witnessed in Brentwood Borough are higher than that witnessed in the County as a whole, with an absence of anything less than 'Moderate' concentrations of phosphate found within the Borough. From 2004, even 'Moderate' concentrations are absent. The concentration of phosphates in 2005 is slightly lower than the 2004 level, with river stretches containing 'Very High' phosphate concentrations making up 46.88% of river stretches in 2004 compared to 41.14% in 2005. 'Very High' phosphate concentrations within the Borough have remained relatively static since 2000 (and 1995) although all show a noticeable drop from levels reported in 1990.

Table 38: Comparison Between Phosphate GQA At Regional, County and Borough Level In 2005

	East of England	Essex	Brentwood
Very Low	1.03%	0%	0%
Low	12.73%	0.54%	0%
Moderately Low	6.83%	1.99%	0%
Moderate	16.76%	10.16%	0%
High	50.40%	70.97%	58.86%
Very High	12.25%	16.33%	41.14%

Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_phosphate_2005_1180402.doc) 2007

Figure 31:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_phosphate_2005_1180402.doc) 2007

Essex and Brentwood Borough both had higher concentrations of phosphate in its waters than the East of England as a whole in 2005. The majority of river stretches contain 'High' concentrations of phosphate at all three government levels, with the proportion of river stretches in the county, 70.97%, being the highest of these. 58.86% of river stretches in the Borough are in this grade boundary, representing the second highest total. At 41.14%, the proportion of river stretches with a 'Very High' concentration of phosphate in the Borough is more than double the County (16.33%) and regional (12.25%) levels.

As previously stated, there is no 'ideal' or desirable concentration of phosphate in river waters due to the fact that such concentrations rely on a number of external factors. Consequently, the expanded results set out in Table 39 below are for information purposes only.

Table 39: Expanded Phosphate GQA Results For Brentwood Borough 2003 - 2005

River Name	River Stretch	Years	Upstream grid ref.	Downstream grid ref.	Length
Chainbridge TR	Headwaters…Wid	2003 to 2005	X:557700, Y:198000	X:562200, Y:197200	4.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Phosphates (mg/l)	1.08	0.97	36	6	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Haverings Grove BRK	Ingrave STW…Wid	2003 to 2005	X:563100, Y:193300	X:565400, Y:196050	6km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Phosphates (mg/l)	0.28	0.93	36	5	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Chain Bridge Tributary…Chainbridge	2003 to 2005	X:562100, Y:197100	X:562500, Y:197000	0.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Phosphates (mg/l)	1.08	0.97	36	6	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Chainbridge…Wash Road Trib	2003 to 2005	X:562500, Y:197000	X:563600, Y:196200	1.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Phosphates (mg/l)	1.08	0.97	36	6	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Haveringsgrove Brook…Ingatestone STW	2003 to 2005	X:565400, Y:196000	X:566400, Y:199000	4km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Phosphates (mg/l)	0.72	0.61	36	5	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Headwaters…Chain Bridge Tributary	2003 to 2005	X:560400, Y:201600	X:562100, Y:197100	5.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Phosphates (mg/l)	2.02	2.42	36	6	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Shenfield STW…Haveringsgrove Brook	2003 to 2005	X:565200, Y:195900	X:565400, Y:196000	0.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Phosphates (mg/l)	0.6	0.77	36	5	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Wash Road Trib…Shenfield STW	2003 to 2005	X:563600, Y:196200	X:565200, Y:195900	1.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Phosphates (mg/l)	0.91	0.51	32	5	

Information taken from Environment Agency (http://maps.environment-agency.gov.uk/wiyby/wiybyController?extraClause=COUNTY~'Brentwood%20Borough%20Council'&extraClause=REPORT_YEAR~'2003%20to%202005') 2007

e) Nitrates

Table 40: Nitrate GQA Grade Boundaries

Classification for nitrate Grade	Grade limit (mg NO_3/l) Average	Description
1	<5	Very low
2	>5 to 10	Low
3	>10 to 20	Moderately low
4	>20 to30	Moderate
5	>30 to 40	High
6	>40	Very high

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/acrobat/nutrients.pdf) 2007

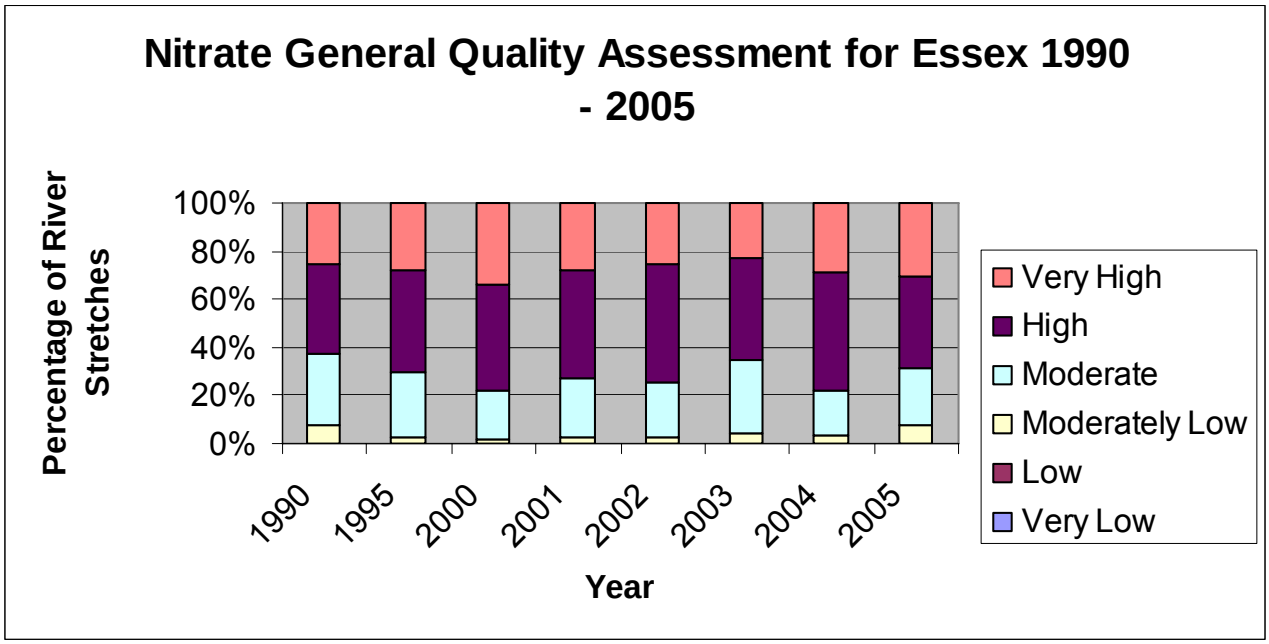
The 'High' grade refers to concentrations which are above 30 mg/l. This limit roughly corresponds with a 95 percentile limit of 50 mg/l which is used in the EC Drinking Water Directive and the EC Nitrate Directive. No direct comparison can be drawn however as the EC Directives are measured under strict guidelines and cannot be estimated from average concentrations over 3 years.

Table 41: Essex Nitrate GQA

Year	Total Length (Km)	Classified Length (Km)	% Very Low	% Low	% Moderately Low	% Moderate	% High	% Very High
1990	673.4	662.9	0	0	7.56	29.88	37.14	25.43
1995	672.3	672.3	0	0	2.71	26.85	42.27	28.17
2000	672.2	672.2	0	0	2	19.63	44.75	33.62
2001	672.3	672.3	0	0	2.12	25.18	45	27.7
2002	672.3	672.3	0	0	2.59	22.65	49.53	25.22
2003	672.3	672.3	0	0	3.94	30.8	42.21	23.05
2004	629.6	629.6	0	0	3.24	19.19	48.61	28.96
2005	648.1	648.1	0	0	7.23	24.38	37.57	30.83

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_nitrates_2005_1180396.doc) 2007

Figure 32:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_nitrates_2005_1180396.doc) 2007

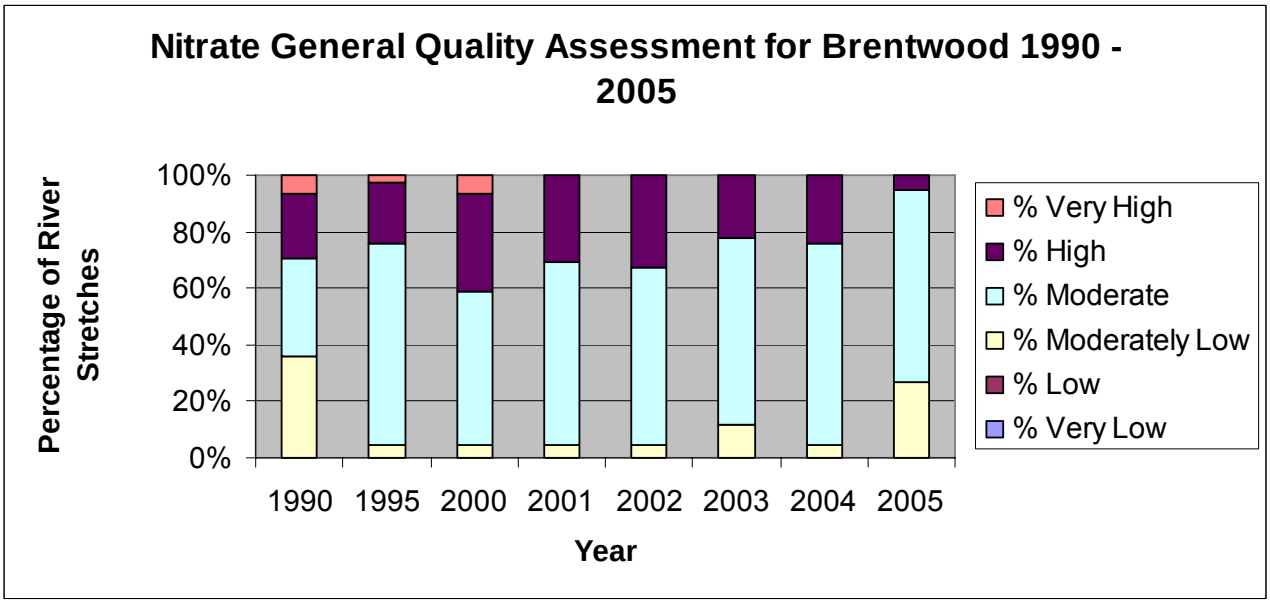
Given that nitrate concentrations are found to be high in the County, it is of little surprise to discover that no stretch of river analysed was found to have either a 'Very Low' or 'Low' concentration of phosphate. The bulk of river stretches have been characterised as having a high concentration of nitrate, with significant proportions also being 'Moderate' and 'Very High'. Actual nitrate concentrations can be seen to be fluctuating over the years analysed with no real discernable pattern. 2005 saw both the second highest percentage of river stretches recording a 'Moderately Low' and 'Very High' concentration of nitrate.

Table 42: Brentwood Borough Nitrate GQA

Year	Total Length (Km)	Classified Length (Km)	% Very Low	% Low	% Moderately Low	% Moderate	% High	% Very High
1990	30	30	0	0	36.11	34.47	22.95	6.48
1995	31.4	31.4	0	0	4.42	71.25	21.93	2.4
2000	31.4	31.4	0	0	4.42	54.09	35.25	6.24
2001	31.4	31.4	0	0	4.42	65.05	30.53	0
2002	31.4	31.4	0	0	4.42	62.69	32.89	0
2003	31.4	31.4	0	0	11.63	65.95	22.42	0
2004	31.4	31.4	0	0	4.42	71.25	24.33	0
2005	39.7	39.7	0	0	26.5	68.19	5.31	0

Taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_nitrates_2005_1180396.doc) 2007

Figure 33:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_nitrates_2005_1180396.doc) 2007

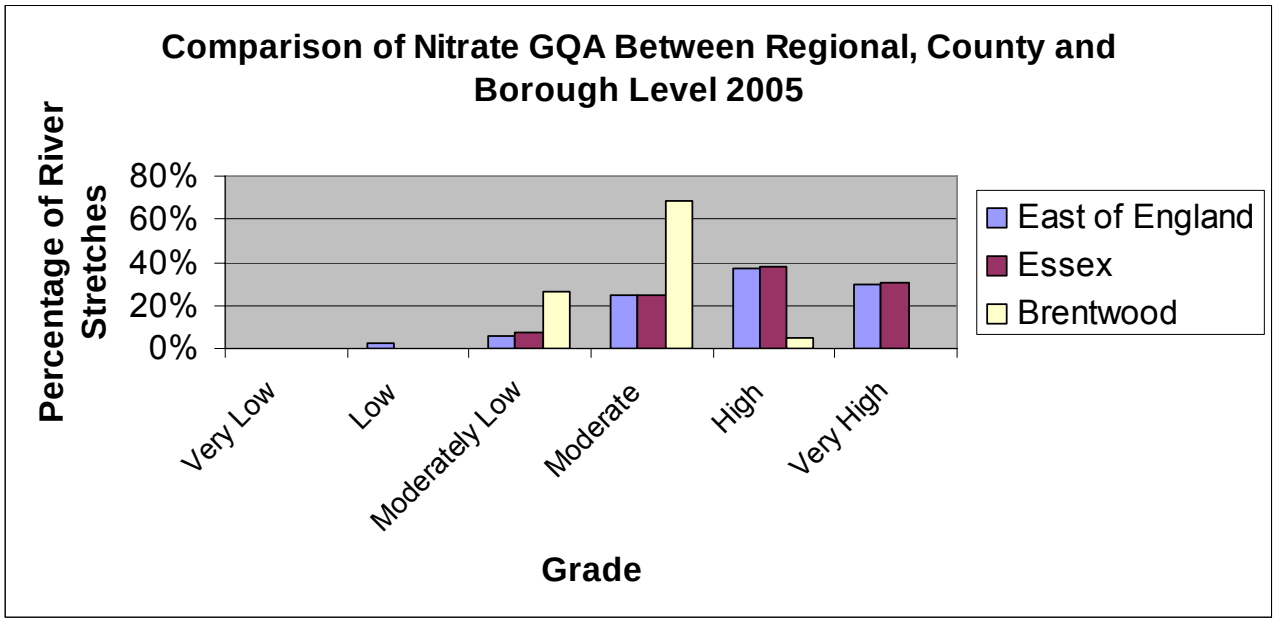
Similar to the situation witnessed at the county level, there is little in the way of a discernable pattern in the nitrate concentrations witnessed in Brentwood Borough's rivers. However, since 2000 there have been no instances of concentrations reaching a level sufficient enough to rate as 'Very High'. 2005 has seen one of the lowest concentrations of nitrate, with just 5.31% of river stretches being classified as having a 'High' concentration of nitrate. This is the lowest total across all years for which data are available. 26.5% of stretches are described as having 'Moderately Low' concentrations, of which only 2000 can report a higher percentage.

Table 43: Comparison Between Nitrate GQA At Regional, County and Borough Level

	East of England	Essex	Brentwood
Very Low	0%	0%	0%
Low	2.36%	0%	0%
Moderately Low	6.11%	7.23%	26.50%
Moderate	25.11%	24.38%	68.19%
High	36.93%	37.57%	5.31%
Very High	29.49%	30.83%	0%

Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_nitrates_2005_1180396.doc) 2007

Figure 34:



Information taken from Environment Agency (http://www.environment-agency.gov.uk/commondata/103599/gqa_nitrates_2005_1180396.doc) 2007

Brentwood Borough can be seen to have a lower occurrence of nitrate within its river system than both Essex and the East of England. 68.19% of river stretches within the Borough contain a 'Moderate' concentration of nitrate, compared to 25.11% regionally and 24.38% at the county level. The borough also has 3 times the proportion of river stretches containing a 'Moderately Low' concentration of nitrate. There is very little difference between the spread of nitrogen concentrations at the county and regional level, with the proportion of concentrations between 'Moderately Low' and 'Very High' all being within 1.4% of each other. Despite this relatively small difference in proportional nitrate concentration, it is still evident that river stretches in the East of England contain slightly lower levels of nitrate by volume than those in Essex.

As previously stated, there is no 'ideal' or desirable concentration of nitrate in river waters due to the fact that such concentrations rely on a number of external factors. Consequently, the expanded results set out in Table 44 are for information purposes only.

Table 44: Expanded Nitrate GQA Results For Brentwood Borough 2003 - 2005

River Name	River Stretch	Years	Upstream grid ref.	Downstream grid ref.	Length
Chainbridge TR	Headwaters…Wid	2003 to 2005	X:557700, Y:198000	X:562200, Y:197200	4.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Nitrates (mg/l)	24.87	30.72	36	4	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Haverings Grove BRK	Ingrave STW…Wid	2003 to 2005	X:563100, Y:193300	X:565400, Y:196050	6km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Nitrates (mg/l)	24.91	40.49	36	4	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Chain Bridge Tributary…Chainbridge	2003 to 2005	X:562100, Y:197100	X:562500, Y:197000	0.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Nitrates (mg/l)	24.87	30.72	36	4	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Chainbridge…Wash Road Trib	2003 to 2005	X:562500, Y:197000	X:563600, Y:196200	1.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Nitrates (mg/l)	24.87	30.72	36	4	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Haveringsgrove Brook…Ingatestone STW	2003 to 2005	X:565400, Y:196000	X:566400, Y:199000	4km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Nitrates (mg/l)	28.93	35.12	36	4	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Headwaters…Chain Bridge Tributary	2003 to 2005	X:560400, Y:201600	X:562100, Y:197100	5.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Nitrates (mg/l)	28.26	34.54	36	4	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Shenfield STW…Haveringsgrove Brook	2003 to 2005	X:565200, Y:195900	X:565400, Y:196000	0.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Nitrates (mg/l)	31.33	37.69	36	5	
River Name	**River Stretch**	**Years**	**Upstream grid ref.**	**Downstream grid ref.**	**Length**
Wid	Wash Road Trib…Shenfield STW	2003 to 2005	X:563600, Y:196200	X:565200, Y:195900	1.5km
Criteria	**Mean**	**Standard deviation**	**Number of samples**	**Grade**	
Nitrates (mg/l)	22.61	27.23	32	4	

Information taken from (http://maps.environment-agency.gov.uk/wiyby/wiybyController?extraClause=COUNTY~'Brentwood%20Borough%20Council'&extraClause=REPORT_YEAR~'2003%20to%202005') 2007

5.4 Summary

- Despite 2005 showing an improvement in the Borough's river ecosystem over 2004, there has been a downturn in river ecosystem quality since 2002.
- The total length of river that achieved a full pass under the Borough's River Ecosystem scheme in 2005, 20.5km, is the lowest since 1990 based on information received. The percentage saturation of dissolved oxygen is reported to be the main cause of failure under the scheme
- The Chemistry General Quality Assessment for Essex reports that chemical water quality has generally fallen since the high of 2001. However, the figures reported in 2005 show over 5 times the proportion of rivers in 2004 being awarded a 'Very Good' classification, and this is the highest proportion for 3 years.
- In general, Brentwood Borough's rivers are not in as good a condition chemically as those found across Essex. The proportions rated as 'Poor' or 'Bad' are more than double that of the County and Region. There has been an absence of rivers classified as 'Very Good' since 2003. 30.98% of the rivers in the Borough have been designated as being 'Poor' in 2005, which is the highest proportion across all the years for which data has been received. Biochemical oxygen demand and the lack of dissolved oxygen are given as the reasons for low performance in the Borough.
- The Biological General Quality Assessment for Essex reports that in 2005, 22.26% of river stretches were of a 'Very Good' quality. This is a slight downturn from 2004 results, and a further deterioration from the high of 2003. None of the County's river systems were assessed as a 'Bad' quality biologically in any year for which data was received.
- Within the Borough, biological water quality has fallen since 2002. During 2005, as well as having the largest proportion of rivers being biologically 'Poor', this year also had the second smallest proportions of rivers displaying 'Good' (6.24%) or 'Fairly Good' (53.54%) grades.
- The biological quality of the Borough's rivers is behind that of both the East of England and Essex. The proportion which is considered to be of 'Poor' quality in the Borough (33.01%) is over 5 times that of the county (6.55%) and 15 times that of the regional level (2.07%). Despite this, no river achieved less than a Grade C within the Borough. However, this grading is still indicative of a river where the biology is worse than expected for that type of river.
- The Phosphate General Quality Assessment for Essex shows that in each year, over 80% of river stretches analysed displayed concentrations of phosphate which were either 'High' or 'Very High', with 2005 displaying the highest concentration since 2001.
- The concentrations of phosphate witnessed in the Borough are higher than that witnessed in the County as a whole, with an absence of anything less than 'Moderate' concentrations of phosphate found within the Borough. From 2004, even 'Moderate' concentrations are absent.
- The Nitrate General Quality Assessment for Essex shows that across the years for which data was received, the majority of river stretches have been characterised as having a high concentration of nitrate.
- The 2005 Nitrate General Quality Assessment for Brentwood reported the lowest concentration of nitrate for the years that data was received. 26.5% of stretches are described as having 'Moderately Low' concentrations, with only 2000 reporting a higher percentage. Nitrate concentrations are lower in the Borough than at County or Regional level. There is little difference in the spread of concentrations at the latter two levels.

FLOODING

6.1 Introduction

Flooding from rivers and coastal waters is a natural process that plays an important role in shaping the natural environment. However, flooding threatens life and causes substantial damage to property. The effects of weather events can be increased in severity both as a consequence of previous decisions about the location, design and nature of settlement and land use, and as a potential consequence of future climate change. Although flooding cannot be wholly prevented, its impacts can be avoided and reduced through good planning and management.

6.2 Policy Context

A. National Context

i) Making Space for Water: Taking forward a new Government strategy for flood & coastal erosion risk management (DEFRA, DfT, ODPM and HM Treasury, 2005) advocates a holistic approach that addresses all forms of flooding and coastal erosion through a range of Government policies. This means looking at groundwater, surface run-off and urban flooding and embeds sustainable development across flood and coastal erosion risk management policies.

ii) National planning policies are published by the Department for Communities and Local Government in Planning Policy Statements (PPS), which are gradually replacing Planning Policy Guidance Notes (PPG). In respect of Flooding, national guidance is presented in,

PPS25: Development and Flood Risk aims to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk. Where new development is, exceptionally, necessary in such areas, policy aims to make it safe without increasing flood risk elsewhere and where possible, reducing flood risk overall. Regional planning bodies and local planning authorities should prepare and implement planning strategies that appraise, manage and reduce the risk of flooding through a partnership approach, particularly with the Environment Agency, operating authorities and stakeholders. Use should be made of strategic flood risk assessments, sustainable drainage systems, flood risk management policies and plans, and river basin catchment management plans.

A risk-based approach should be adopted at all levels of planning. The source-pathway-receptor model is advocated which requires not adding to the causes or 'sources' of flood risk; managing flood 'pathways' of likely routes and storage of floodwater and influencing downstream flood risk; and reducing adverse consequences of flooding in 'receptor' areas at flood risk. Flood risk assessments should inform preparation of plans and policies with a sequential approach and test to determining the suitability of land for development. An exception test should only be applied where development cannot take place in the least vulnerable flood zone but is necessary for wider sustainable development reasons.

Annexes within PPS25 provide further detail of,

A. The Government's aims for sustainable development;
B. Climate change;

C. Forms of flooding;
D. The sequential test and exception test – including details of the classification of flood zones, the flood risk vulnerability classification, and their compatibility;
E. The assessment of flood risk;
F. Managing surface water;
G. Managing residual flood risk;
H. Roles and responsibilities of parties.

PPS25 is supported by a Practice Guide that offers guidance and good practice case studies of how to implement PPS25. The Practice Guide is a living draft on which comments are invited, by 20 August 2007**,** in order to develop the Practice Guide for final publication later in the year. The Guide includes a questionnaire for consultation responses, which is also available separately to download below.

iii) High Level Target 5 Development and Flood Risk 2005/06 (Joint report to DEFRA and DCLG by EA and LGA) November 2006 – reports on the monitoring of the impact of technical advice on flood risk provided by the Environment Agency on planning application decisions made by Local Planning Authorities. The key findings are:

- The number of planning applications requiring detailed consideration on flood risk grounds continues to decline as a result of the Environment Agency's Standing Advice.
- The total number of applications permitted against the Environment Agency's advice continues to fall from previous years. Where the outcome of the application is known by the Environment Agency, 95% of outcomes were in line with EA recommendations.
- Only 10 major cases were permitted which ran contrary to EA advice.
- The EA is not informed as to the final decision on 30% of the cases to which it objected
- The requirement of a full Flood Risk Assessment (FRA) is still being ignored by developers. The proportion of assessments submitted but considered unsatisfactory increased in 2005/06. The lack of a satisfactory FRA now accounts for 68% of all objections.

B. Regional/County Context

i) The Draft East of England Plan, prepared by the East of England Regional Assembly (EERA), was submitted to Government in December 2004. Following a period of public consultation the Plan was subject of an Examination in Public (EiP) between November 2005 and March 2006. The Report of the EiP Panel was published in June 2006. In December 2006 the Secretary of State published Proposed Changes to the Draft Plan for a period of public consultation to March 2007. The final Plan is expected to be published by Government by summer 2007.

A relevant policy in the Draft Plan, as submitted in December 2004, is Policy SS14: Development and Flood Risk, which recognises flood risk as being a significant factor in the East of England. Existing properties need to be protected and new development located away from areas where there is a risk from flooding. Local development documents will promote the use of strategic flood risk assessments to guide development away from areas at risk of flooding. Flood zones, identified by the Environment Agency's flood zone maps, should be protected. Land uses should not add to the risk of flooding elsewhere and should use appropriate sustainable drainage systems.

ii) The Essex and Southend-on-Sea Replacement Structure Plan was adopted in April 2001. The Planning and Compulsory Purchase Act 2004 introduced a 'new' statutory plans system. The transitional arrangements for the 'new' system provide for the Adopted

Structure Plan policies to be "saved" to 28th September 2007. Beyond that date policies of the Plan will cease to have effect unless they are "saved" by the Secretary of State. The Secretary of State has published a protocol on the procedures for saving Structure Plan policies. The protocol requires the Regional Planning Body to make requests for extending the life of Structure Plan policies to the Secretary of State by 1st April 2007. Such requests will be considered in the light of criteria set out in PPS11 paragraph 2.57.

A relevant policy in the Adopted Plan, April 2001, is Policy NR12: Protecting Water Resources which states that development will only be permitted where adequate water resources can be provided within the plan period without a detrimental effect on the environment. Development will also only be permitted if there would not be a risk to existing water resources, the development will not be at risk from any form of flooding, nor increase the risk elsewhere and that there will be no materially adverse effect upon nature conservation, archaeological remains or landscapes and recreational facilities located near rivers and canals. Water conservation measures will also be sought for new buildings where appropriate.

iii) Catchment Flood Management Plans

The North Essex Catchment Flood Management Plan considers the Stour, Colne, Chelmer, Blackwater and Holland Brook catchments, assessing how flood risks might change over the next 50-100 years, and how they might be managed. The South Essex Catchment Flood Management Plan is currently being formulated.

C. Brentwood Context

i) The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). Relevant policies within the Local Plan, are:

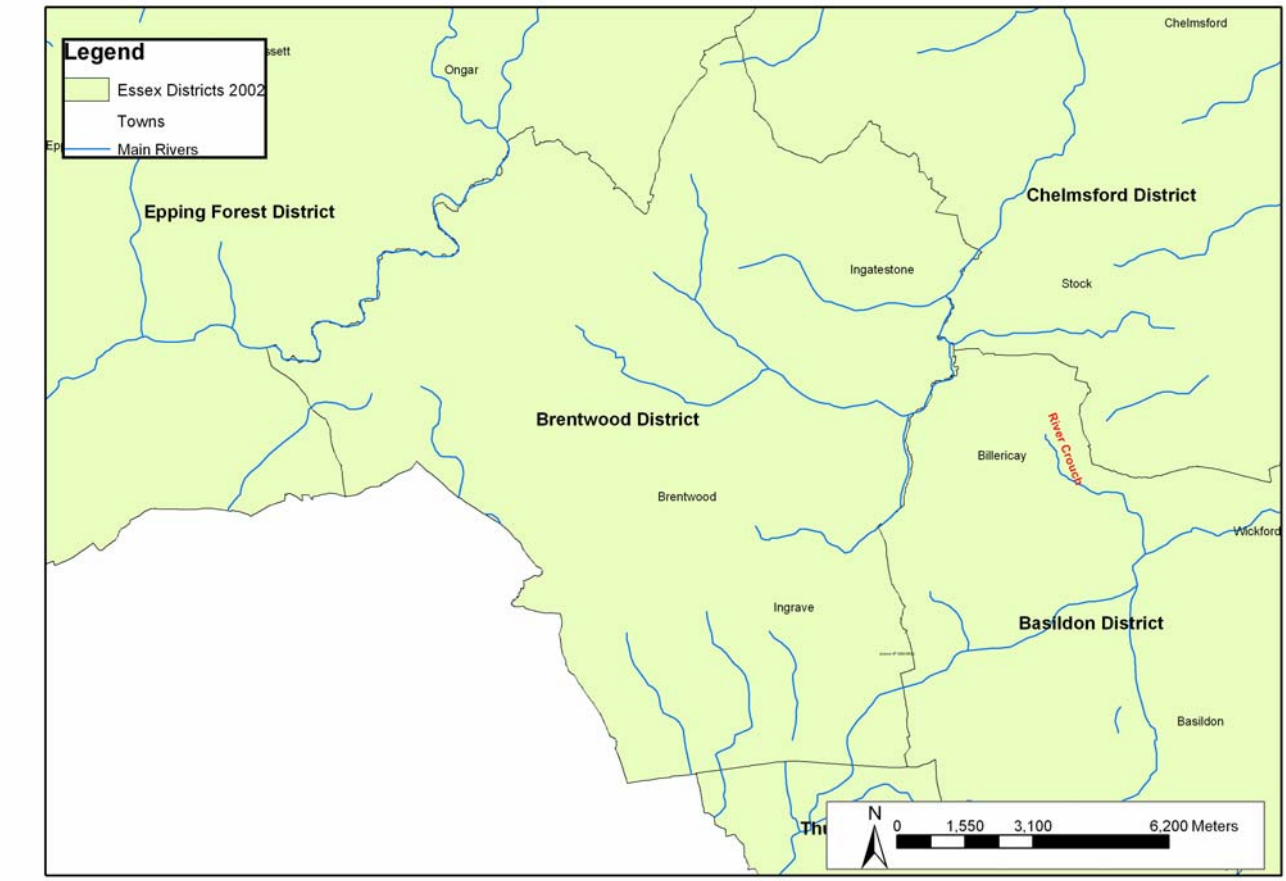
- IR8: Development in Areas at Risk of Flooding sets out the criteria for development in flood zones. Amongst others, the development must be able to be operational during times of flood, results in no net loss of flood plain storage space, does not impede water flow or increase the risk of flooding elsewhere. A full flood risk assessment will be required to accompany planning applications.
- IR9: Surface Water Run-off states that development that is likely to increase the risk of flooding will not be permitted unless appropriate attenuation measures can be implemented. Conditions and planning obligations can be sought to achieve this.

6.3 Current Baseline Information

This section presents maps of the main water courses and the spatial extent of flood zones 2 and 3 in Brentwood Borough.

Figure 35 shows the location of the main water courses within Brentwood Borough.

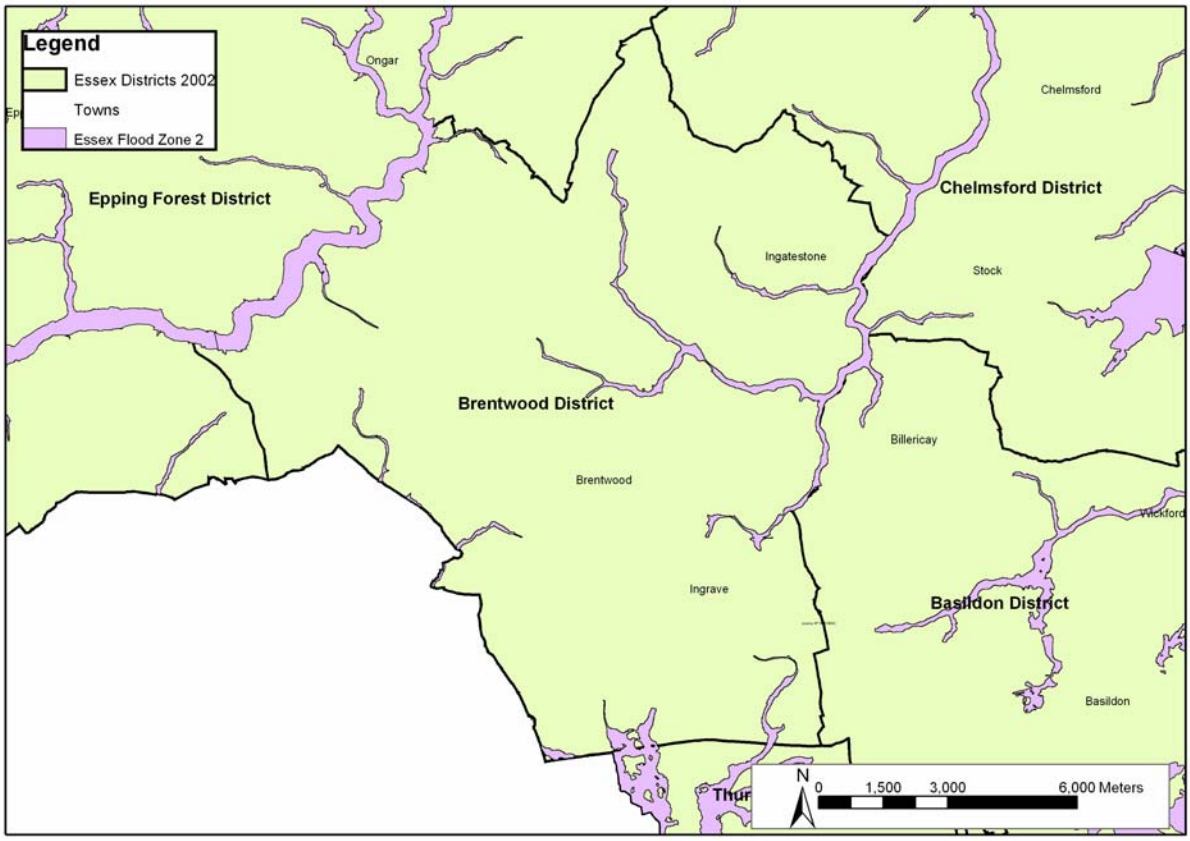
Figure 35: Main Water Courses Within Brentwood Borough



Essex County Council

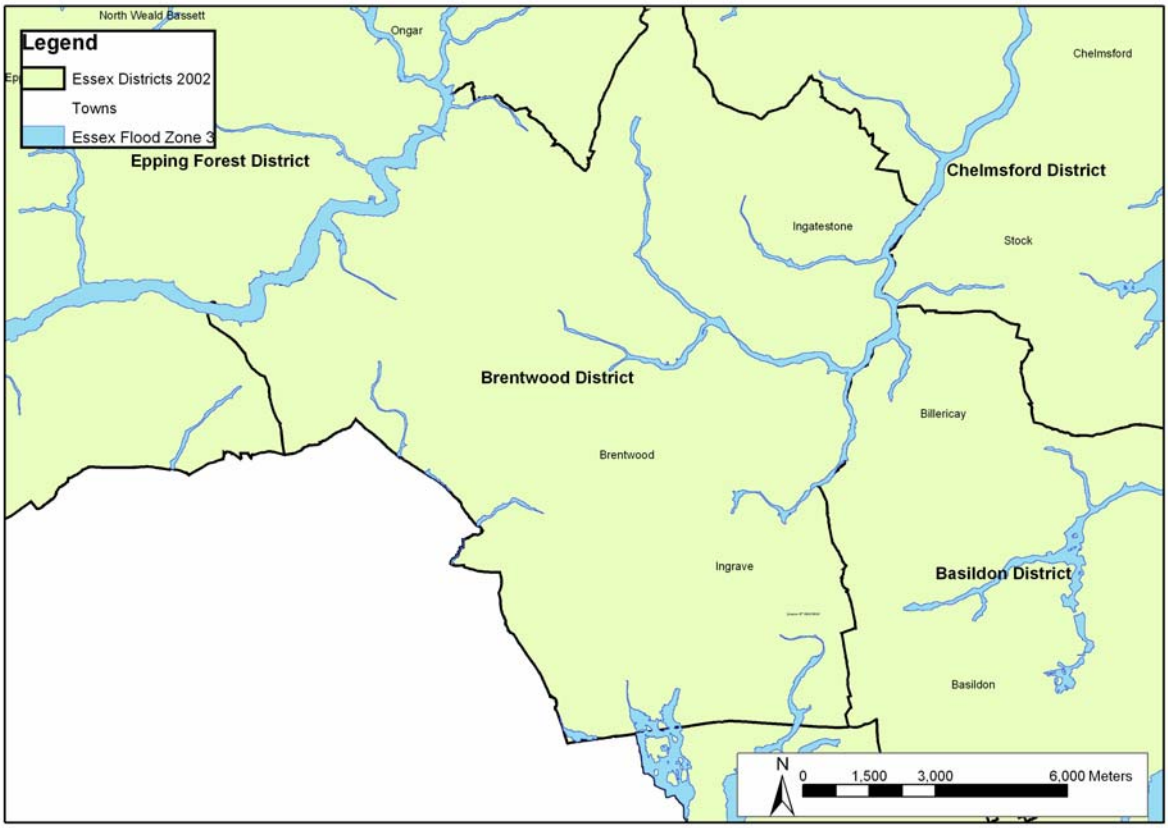
Figures 36 and 37 shows the extent of Flood Zone 2 and Flood Zone 3 respectively in Brentwood Borough. The figures show that the spatial extent of flood zone 2 and flood zone 3 is broadly similar. All zones at risk of flooding are located around the main water courses in the Borough. This is to be expected given the geology and location of Brentwood.

Figure 36: Spatial Extent of Flood Zone 2 In Brentwood Borough



Essex County Council 2007

Figure 37: Spatial Extent of Flood Zone 3 in Brentwood Borough



Essex County Council 2007

6.4 Summary

- All zones at risk of flooding are located around the main water courses in Brentwood Borough, which is to be expected given the geology and location of Brentwood.
- the spatial extent of flood zone 2 and flood zone 3 in the Borough is broadly similar.

7 GEOLOGY AND SOIL

7.1 Introduction

The soil types of Essex have helped shape the landscape, wildlife and economy of the County. The Boulder Clay region of the north-west and central Essex has soils which are a rich crop producing resource. Roads, lanes and field boundaries are related to both topography and soil types, with the pattern suggesting change over a long period of time. Soils are subject to pollution resulting from man's activities both past and present. The surface geology and the hydrological processes that take place within them provide the pathway by which contamination can extend its impacts on the natural environment and human health**.**

7.2 Policy Context

A. International/National Context

i) The Council of Europe's European Soil Charter (1972) recognised the significance of soil as a resource. In response to concerns about the degradation of soils in the EU, the European Commission produced a Communication "Towards a Thematic Strategy for Soil Protection" in April 2002. The European Union has decided to adopt this strategy as part of its aim of protection and preservation of natural resources.

ii) The EU directive on environmental risk assessment provides the closest piece of EU legislation in terms of contaminated land and requires it to be put into member states law.

iii) Part IIA of the Environmental Protection Act 1990, as amended in 1995, placed a statutory duty on local authorities to prepare contaminated land strategies. Section 57 of the 1995 amendment established a series of regulations, most notably the Contaminated Land Regulations. The regime involves putting in place a management system for the identification, assessment/investigation and remediation of contaminated land. Local authority strategies are required to set out a framework and timetable for ongoing assessment of land within their administrative area. Land identified as being at risk of contamination is required to be investigated. If the land is contaminated, the local authority is statutorily required to seek those liable for its contamination and enforce its remediation under the "polluter pays" principle. Such land is required to be recorded on a public register. The Environment Agency estimates that in England and Wales 67,000 hectares are affected to some extent by chemical contamination and around 44,000 hectares of land affected by chemical contamination have undergone some form of remediation (Environment Agency, September 2005).

iv) In A Better Quality of Life (May 1999) the Government made a commitment to ensure that soil protection received equal priority to that of air and water in the future.

v) The publication of the First Soil Action Plan for England 2004-2006 (May 2004) builds on the earlier Draft Soil Strategy for England (March 2001). A total of 52 actions are set out concerning issues ranging from soil management on farms to soils in the planning system, soils and biodiversity, contamination of soils and the role of soils in conserving cultural heritage and landscape. All of these actions are focussed upon more sustainable soil use and protection.

vi) The Agricultural Land Classification (ALC) system divides land into five grades, with Grade 3 subdivided into sub-grades 3a and 3b. The 'best and most versatile land' is categorised as Grades 1, 2 and 3a, as discussed in Planning Policy Statement 7: Sustainable Development in Rural Areas (ODPM, 2004). This is the land which is most productive, efficient and can best deliver future crops for food and non-food uses. The importance of this agricultural land protection policy is highlighted in Foundations for our Future – DEFRA's Sustainable Development Strategy (June 2002). The UK Strategy for Sustainable Development – A better quality of life (May, 1999) and PPS 7 (ODPM, 2004) also discuss this further.

vi) National planning policies are published by the Department for Communities and Local Government in Planning Policy Statements (PPS), which are gradually replacing Planning Policy Guidance Notes (PPG). In respect of soil, national guidance is presented in two PPSs:

- PPS9: Biological and Geological Conservation (ODPM, 2005) highlights the importance of conserving the diversity of geology. In relation to geological conservation, the Government's planning objectives are 'to promote sustainable development by ensuring that biological and geological diversity are conserved and enhanced' and 'to conserve, enhance and restore the diversity of England's wildlife and geology by sustaining, and where possible improving, the quality and extent of natural habitat and geological and geomorphological sites; the natural physical processes on which they depend; and the populations of naturally occurring species which they support.'
- PPS23: Planning and Pollution Control notes that the Government is committed to the 'precautionary principle' - "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation". The principle should be invoked when there is reason to believe that harmful effects may occur to either humans, animals or the environment or where there is scientific uncertainty in the potential effects of a proposed development. The PPS makes Local Planning Authorities (LPAs) aware that decisions on planning applications can have an immediate impact on the environment, and that LPAs should take account of the risks of, and from, pollution.
  Appendix A within PPS23 sets out matters for consideration in preparing Local Development Documents and taking decisions on individual planning applications where pollution considerations arise. Additionally, the companion document PPS23 Annex 2: Development on Land affected by Contamination, provides advice to Regional Planning Bodies (RPBs), Local Planning Authorities (LPAs), developers and other interested parties on the issues relevant to development and use of land that may be affected by contamination and the extent of controls operated through planning and environmental legislation.

B. Regional / County Context

i) The Draft East of England Plan

The Draft East of England Plan, prepared by the East of England Regional Assembly (EERA), was submitted to Government in December 2004. Following a period of public consultation the Plan was subject of an Examination in Public (EiP) between November 2005 and March 2006. The Report of the EiP Panel was published in June 2006. In December 2006 the Secretary of State published Proposed Changes to the Draft Plan for a period of public consultation to March 2007. The final Plan is expected to be published

by Government by summer 2007. Policy EN6: Agriculture, Land and Soils seeks to encourage the sustainable use of soil resources and, where soil and land have been degraded, maximise the opportunities for restoration to beneficial after-uses.

ii) The Essex and Southend-on-Sea Replacement Structure Plan

The Essex and Southend-on-Sea Replacement Structure Plan was adopted in April 2001. The Planning and Compulsory Purchase Act 2004 introduced a 'new' statutory plans system. The transitional arrangements for the 'new' system provide for the Adopted Structure Plan policies to be "saved" to 28th September 2007. Beyond that date policies of the Plan will cease to have effect unless they are "saved" by the Secretary of State. The Secretary of State has published a protocol on the procedures for saving Structure Plan policies. The protocol requires the Regional Planning Body to make requests for extending the life of Structure Plan policies to the Secretary of State by 1st April 2007. Such requests will be considered in the light of criteria set out in PPS11 paragraph 2.57. Policy NR8 of the Plan intends that development that would result in permanent loss or degradation of agricultural land classified as Grades 1, 2 and 3A should not be permitted unless there is an overriding need for the development and no suitable alternative site of lower agricultural quality is available.

C. Brentwood Context

i) Brentwood Local Plan Adopted August 2005

The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). Relevant policies for this topic are,

- Policy IR5: Protecting The Best and Most Versatile Agricultural Land seeks to protect such land from improper development. Development will only be allowed where it can be shown that no alternative development site exists within existing settlement boundaries or on other previously developed land. Where development of agricultural land is required, agricultural land of the least value should be used.
- Policy PC1: Land Contaminated by Hazardous Substances states that where development is proposed on land which is suspected of being contaminated by hazardous substances arising out of previous land uses such as industry, gas works, waste tips or landfill sites, an environmental survey assessing the nature and extent of the contamination will be required to accompany the application. Where appropriate development will only be permitted where the applicant can ensure, to the Council's satisfaction, that the land is capable of being decontaminated and reclaimed for beneficial use in accordance with an agreed remediation and validation scheme prior to the grant of planning permission; and appropriate measures to deal with contamination of the development site are undertaken before the implementation of any planning permission.
- Policy PC2: Hazardous Substances makes mention of the fact that development proposals involving the use, movement or storage of hazardous substances will only be permitted within employment areas and then only where it would not give rise to an unacceptable risk to the health or safety of users of the site, neighbouring land or the environment.

7.3 Current Baseline Information

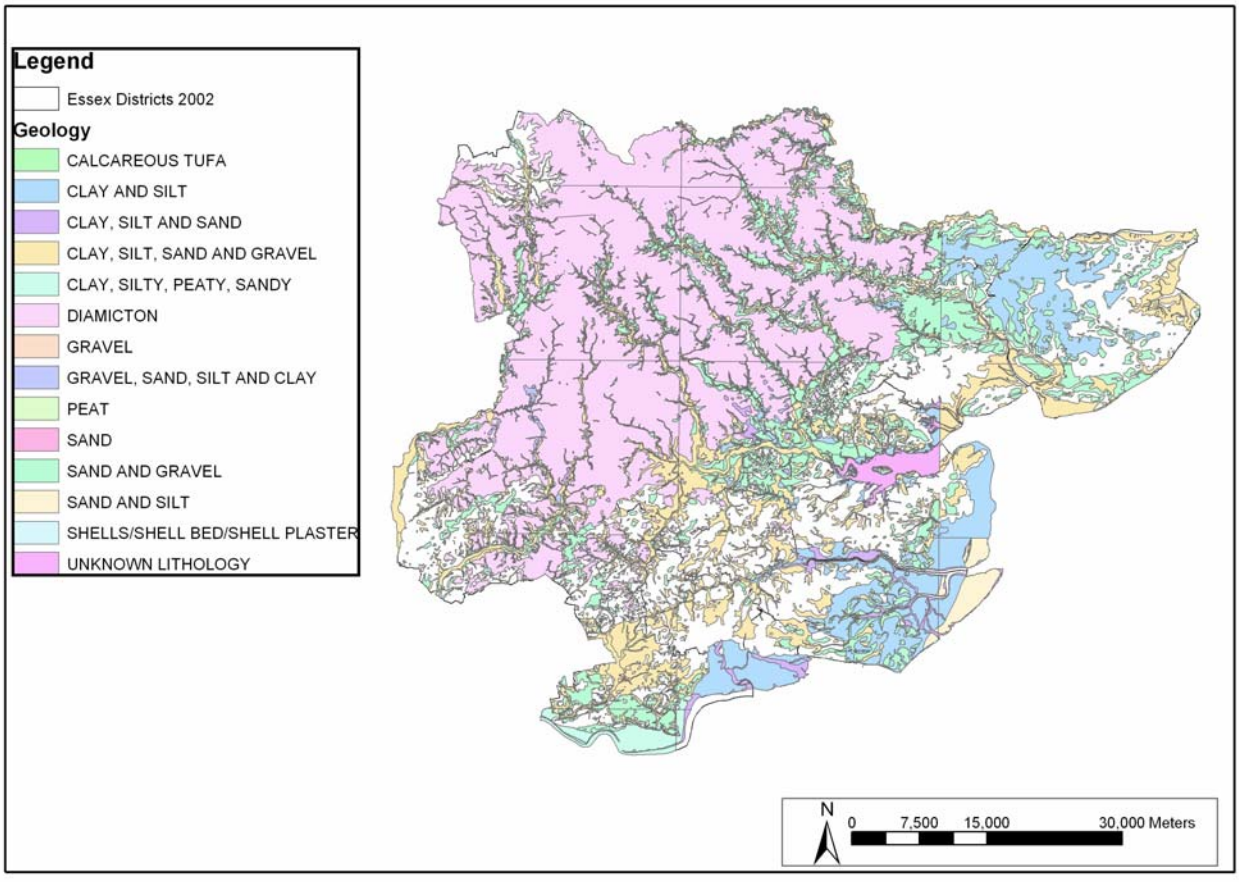
A. Geology

Essex makes up the eastern section of the London Basin, formed by the laying down of chalk in the Cretaceous, and this layer comes to the surface in the north-west of the county. The Essex Landscape (Essex Record Office, 1999) identifies three broad geological regions within Essex:

- Coastal - estuaries and their hinterlands, mostly on the London Clays (deposited during the Eocene) and marshes formed from marine and fluvial deposits.
- Mid-Essex zone - area running from south-west to north-east Essex,
  - To the south-west the geology consists of:
    - Acidic soils from Bagshot Beds (fine sands above Claygate Beds)
    - Acidic soils from Claygate Beds (sand/clay layer above London Clays)
    - London Clays (exposed in the valleys)
    - Glacial outwash
  - To the north-east the geology consists of:
    - Kesgrave Formations (sands and gravels from pre-diversion Thames terraces)
    - Glacial outwash
- Essex till: North-west of Essex was affected by the Anglian cold phase, leading to the deposition of boulder clays which have been made fertile by their chalk content

The surface geology of Essex is illustrated in Figure 38, with the geological stratigraphy outlined in Table 45 and the structural cross section of Essex geology shown in Figure 39.

Figure 38: Surface Geology of Essex



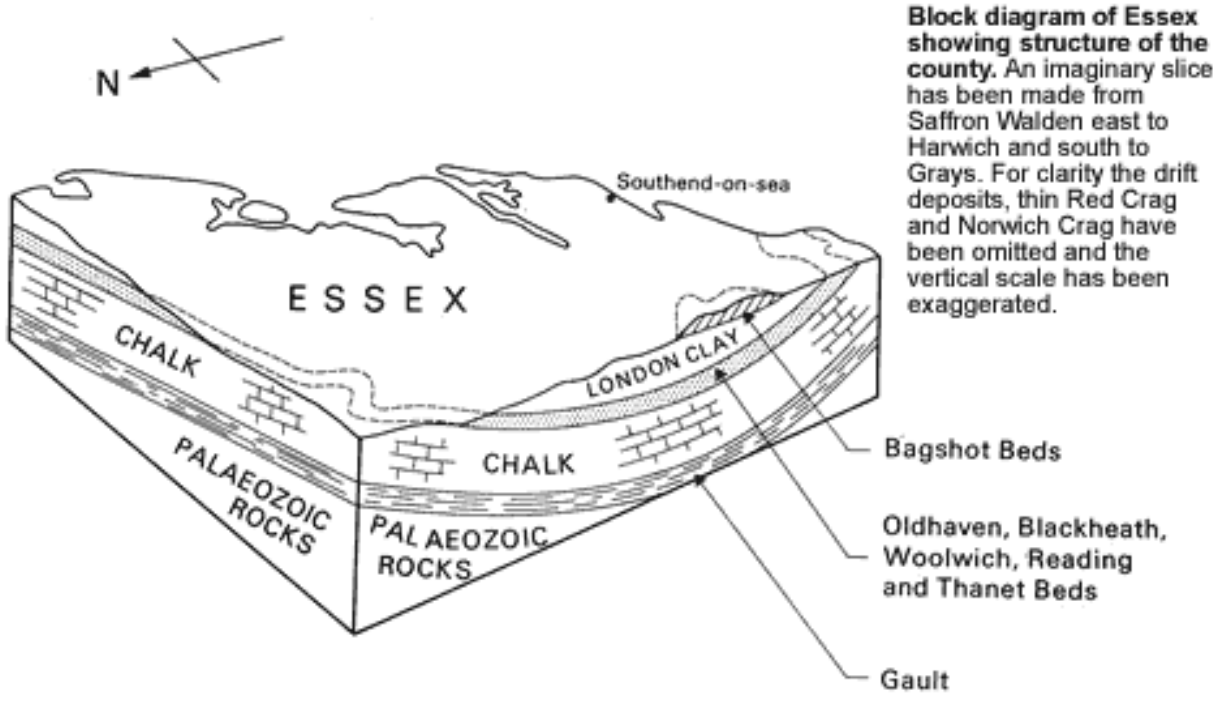
Essex County Council 2007

Table 45: Geological Stratigraphy of Essex

PERIOD OR EPOCH	GEOLOGICAL FORMATIONS IN ESSEX
HOLOCENE	Recent peat and alluvium
PLEISTOCENE	River terrace deposits
	Boulder clay and glacial gravel
	Kesgrave Sands and Gravels
	Norwich Crag (Chillesford Sand)
PLIOCENE	Red Crag
MIOCENE	No evidence in Essex
OLIGOCENE	
EOCENE	Bagshot Sand
	London Clay
	Blackheath and Oldhaven Beds
PALAEOCENE	Woolwich and Reading Beds
	Thanet Sand
CRETACEOUS	Chalk (Lower, Middle and Upper)
	Gault and Upper Greensand (beneath Essex)
JURASSIC	No evidence beneath Essex
TRIASSIC	
PERMIAN	
CARBONIFEROUS	
DEVONIAN	Shales and mudstones of Silurian and Devonian age occur at depth (beneath Essex)
SILURIAN	
ORDOVICIAN	No evidence beneath Essex
CAMBRIAN	
PRECAMBRIAN	

Taken from Essex RIGS (http://www.essexwt.org.uk/Geology/timescale.htm

Figure 39: Structural Cross Section of Essex



Block diagram of Essex showing structure of the county. An imaginary slice has been made from Saffron Walden east to Harwich and south to Grays. For clarity the drift deposits, thin Red Crag and Norwich Crag have been omitted and the vertical scale has been exaggerated.

Taken from Essex RIGS (http://www.essexwt.org.uk/Geology/xsection.htm)

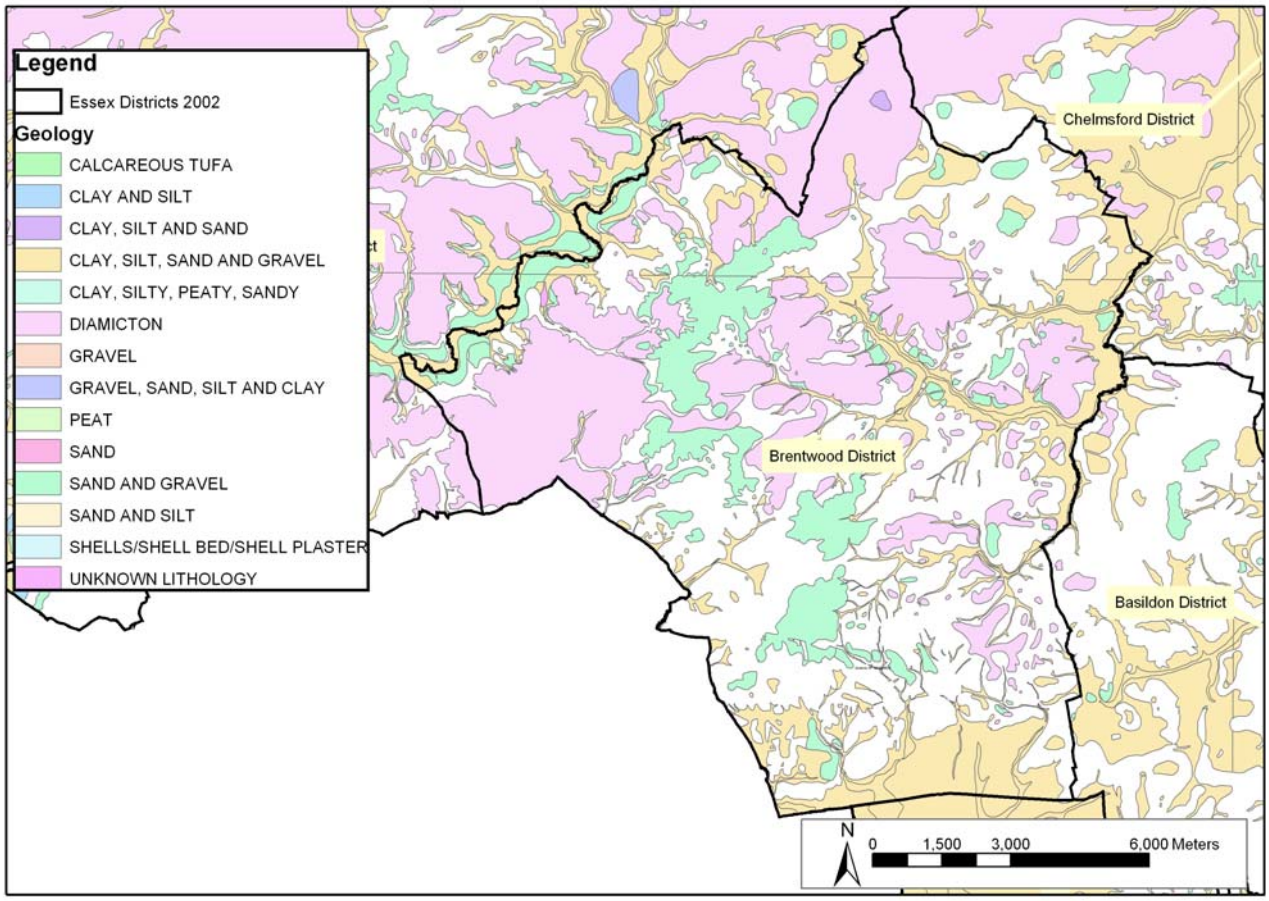
Key stages in the geological formation of Essex are:

- Palaeozoic - The oldest rocks in Essex have been dated back to the Palaeozoic era, and were formed during the Devonian and Silurian periods, approximately 440 – 360 million years ago. These rocks consist of hard slaty shales and mudstones and sandstones and are located 300m below the surface.
- Cretaceous - The next visible layer is a marly clay called the Gault, which was deposited by a muddy sea dating from the Cretaceous period 100 millions years ago. Sea levels were rising through this time, leading to wide spread flooding of the continents, creating the conditions in which the chalk could form. This chalk is the oldest exposed surface rock in the County. This layer would have originally been a horizontal limy mud laid down on the floor of a tropical sea that was then subsequently folded during the orogenic process that created the Alps, caused by the African continent pushing into Europe and creating the Alps. The purity of the chalk means that the water must have been clear and located a great distance from the nearest land. It is thought that this sea covered most of Northern Europe. Chalk can be seen in the South of the County in Thurrock where it has been quarried. The end of the Cretaceous saw the death of the dinosaurs and the gradual disappearance of the chalk sea as sea levels fell throughout the world. A variety of sands, clays and shell beds were the next layers to be formed, deposited in shallow marine and estuarine conditions. These include the Oldhaven and Blackheath layers.
- Tertiary - The environment then changed rapidly back into marine, forming the London Clay, a mud laid down on a sub-tropical sea floor 50 million years ago. This clay is fossil rich, containing marine animals such as molluscs and lobsters as well as the remains of land based animals that were washed into the sea by rivers. Above the London Clay is fine grained yellow sand called the Bagshot Sand. This is indicative of another shallowing of a sea. This sand used to cover the whole region but is now isolated to hill tops in central Essex due to the process of erosion. After the deposition of the Bagshot Sand, there was a significant fall in sea level and the land that is now Essex became exposed. The County was again flooded and shallow marine deposits exist that are up to 2 million years in age. The shelly, iron stained sands of the Red Crag were deposited during this time, and exposures of this can be found across the Northern boundary and coast of Essex, such as at Walton-on-the-Naze.
- Quaternary - Deposits from this time are widespread in Essex and typically occur as river deposits on valley sides or as boulder clay. During the early part of the Quaternary, the River Thames flowed North East across the Northern part of Essex. River sediments, laid down as a series of terraces, represent former floodplains levels and have been given the name Kesgrave Sands and Gravels. These gravels have great commercial value and are extracted in numerous pits between Harlow, Chelmsford and Colchester. This was the route of the Thames 600,000 years ago.
  One of the most dominant geological features of Essex was laid down around 450,000 years ago by an ice sheet formed by the Anglian glaciation. As the ice sheet advanced, it eroded the land underneath it. The eroded material was deposited at the base of the ice to form a sheet of till. It was this Anglian ice sheet which was responsible for pushing the Thames drainage South, close to its present course.
  In the 10,000 years since the melting of the Devensian ice sheet, sea levels have seen a rise of 30m, and are continuing to rise by 2mm a year. These changing levels of land and sea are responsible for the development of the Essex coast. Mud from the north, carried by the sea, has been responsible for the creation and

sustainment of mudflats and saltmarshes. Thousands of acres of salt marsh have been formed over the last 2,000 years although their extent has been greatly reduced in the last few hundred years due to human activity. What remains of the saltmarsh forms part of the Greater Thames Estuary coastal lowlands that stretch north from the Swale Estuary in Kent to the Essex / Suffolk border.

The geology of Brentwood Borough is illustrated in Figure 40.

Figure 40: Brentwood Borough Geology



B. Geological Sites of Special Scientific Interest (SSSIs)

Two localities in Essex have been designated as SSSIs due to their geological heritage – the Naze (2 km north east of Walton-on-the-Naze) and the Colne Estuary. There are no geological SSSIs in Brentwood Borough.

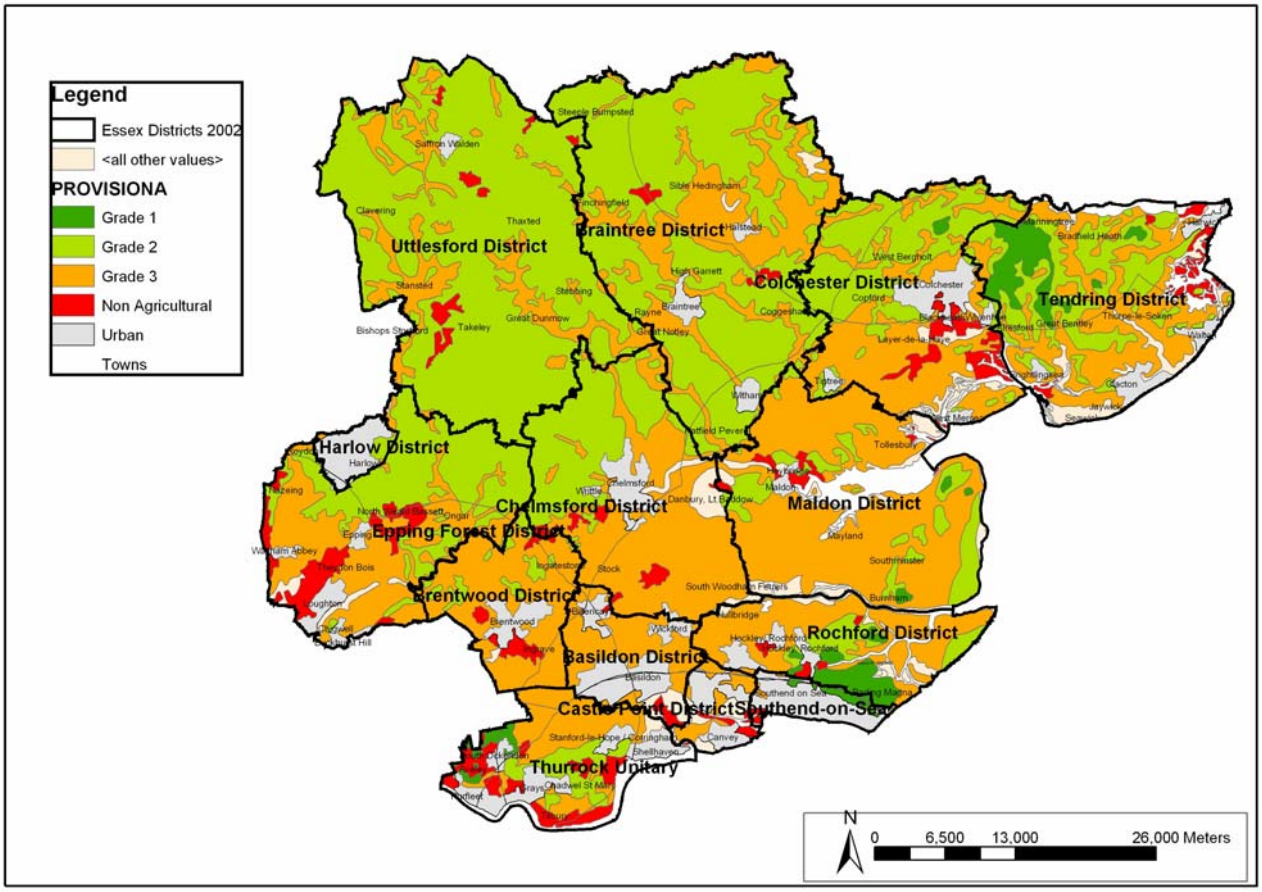
C. Agricultural Land Classification

The East of England has 58% of the country's Grade 1 and 2 land, with 72% of agricultural land in the region under cultivation, compared to 29% nationally (Our Environment, Our Future: The Regional Environment Strategy for the East of England. East of England Regional Assembly and East of England Environment Forum, July 2003). The East of England contains just 10% of country's Grade 4 and 5 land.

The majority of agricultural land within Essex can be broadly classified as Grade 2 in the north and Grade 3 to the south. This is related to the location of the Essex till, with better

quality land located in the north-west of the county. There are also significant areas of Grade 1 agricultural land within Tendring and Rochford districts.

Figure 41: Agricultural Land Classification In Essex



Essex County Council 2007

7.4 Summary

The surface geology of Brentwood Borough is

- There are no geological SSSIs in Brentwood Borough
- Agricultural land in Brentwood Borough is mostly Grade 3, with some areas of Grade 2.

8. CLIMATIC FACTORS

8.1 Introduction

The issue of climate change has become a major cause of concern in terms of the impact of activity and development on the environment. A range of factors have been identified as potential contributors to climate change. An equally wide range of consequences have been identified.

8.2 Policy Context

A. International/National Context

i) The main objective of the Kyoto Protocol is the prevention of "dangerous anthropogenic [man-made] interference with the climate system". The EU is committed under the Kyoto Protocol to reduce greenhouse gas emissions by 8% from 1990 levels by 2008-2012. Reductions in the three most important gases (Carbon dioxide, methane, and Nitrous oxide) will be measured against a base year of 1990 (with exceptions for some countries with economies in transition). The EU and its Member States ratified the Kyoto Protocol in late May 2002.

ii) The 1992 Earth Summit resulted in the international adoption of the global action plan for sustainable development, Agenda 21. This is aimed at addressing pressing issues affecting the international community, including climatic concerns. In the UK this has been disaggregated to the production of Local Agenda 21 strategies at local authority and district level. In this way, collective implementation of Local Agenda 21 at a grassroots level can make progress towards the acheivement of the global Agenda 21 action plan. The 2002 Johannesberg Summit addressed the progress made towards reaching these targets, and discussed mechanisms of better achieving these objectives in the future.

iii) The European Union's Sustainable Development Strategy (EU SDS) was adopted in 2001 and has set out to tackle climate change, natural resource protection, sustainable transport, ageing population, public health and the global dimension of sustainable development. Sustainable consumption and production is also advocated within 'Securing the Future – UK Government Sustainable Development Strategy' (March 2005). The intended mechanism to combat climate change is to meet the commitments under the Kyoto Protocol and then to reduce greenhouse gas emissions by an average of 1% per year over 1990 levels up to 2020 (EU SDS. European Commission, 2001).

iv) The Sixth Environmental Action Plan 2005 (6th EAP) (European Commission) consists of four key environmental issues: climate change, biodiversity and nature conservation, environment and health, resources and waste. To address these priorities the Plan's strategic actions are improving implementation of existing legislation, integrating environmental concerns into the decisions taken under other policies, finding new ways of working with the markets and consumers and encouraging better land use planning and management decisions.

B. Regional/County Context

i) The Sustainable Development Framework for the East of England (EERA and Sustainable Development Round Table, 2001) highlights the need to raise awareness and education regarding climate change and waste issues, amongst other topics.

ii) The Strategic Waste Management Assessment (September 2000), undertaken by the Environment Agency, shows that in 1998/99 the regions' commercial and industrial waste totalled 6.1 million tonnes, with a further 7 million tonnes of construction and demolition waste produced. Most of this material and the 3 million tonnes of waste imported mainly from the London area were disposed of in landfill sites (Regional Environment Strategy for the East of England – Our Environment, Our Future. EERA and East of England Environment Forum, July 2003). The minimisation of waste, promotion of re-use, recycling, composting and alternative treatments, and the adoption of lifestyle changes such as water and energy efficiency are seen as key objectives regionally.

iii) The Regional Environment Strategy for the East of England – Our Environment, Our Future. EERA and East of England Environment Forum, July 2003) discusses the continuing growth in car ownership and use, with the resultant congestion around major roads in the region and Greenhouse gas emission. The region also has a number of international airports, with Stansted and Luton specifically experiencing rapid growth. The Strategy advocates that the first priority should be a reduction in the need to travel, and then encouragement to utilise more sustainable modes of transport. The need for energy conservation and increased efficiency of new buildings and their appliances is also discussed in relation to reducing greenhouse gas emissions. The importance of energy from renewable sources is also stressed, since at present only 0.45% of the East of England's energy is produced from renewable sources.

iv) Climate change in Essex has been predicted through the use of the UKCIP02 Climate Change Scenarios (Hulme *et al.*, 2002) and published within the 'Climate Change in Essex' report (HR Wallingford, November 2005). These projections, for the 2080s, show,

- Winter temperatures will increase by 2-3°C
- Summer temperatures will increase by 3-5°C
- Winter precipitation will increase by 13-25%
- Summer precipitation will increase by 24-47%
- Average sea levels will increase by 26-86cm*
- Extreme sea levels will increase by 80-140cm*
  *including regional isostatic subsidence as well as climate change.

The key required actions that have emerged from this study include improved water conservation, reduced carbon emissions, the protection of people and property from the consequences of flooding, and the effects of heat and UV radiation and the promotion of sustainable tourism.

v) The 'Living with Climate Change in the East of England' report (Stage 1 Interim Report. EERA and Sustainable Development Roundtable, February 2003) concluded that the East of England should aim to work with, rather than against climate change, and to reduce the risk from the potentially adverse impacts of climate change. 'A Sustainable Development Framework for the East of England' (EERA and East of England Sustainable Development Round Table, October 2001), suggests that preparing for climate change now will benefit the economy (for example through minimising storm damage), social issues (e.g. avoiding disruption as a result of flooding) and potentially the environment (for example new habitats and the preservation of historic sites).

vi) Public Service Agreement targets are:

- Public Service Agreement 2005-2008, (DEFRA),
  - To reduce Greenhouse gas emissions to 12.5% below 1990 levels in line with the Kyoto commitment and move towards a 20% reduction in carbon dioxide emissions below 1990 levels by 2010.
  - To enable at least 25% of household waste to be recycled/composted by 2005-06, with further improvement by 2008.
- Energy White Paper (February 2003),
  - UK to cut CO_2 emissions by 60% by 2050.
- East of England (Making Renewable Energy a Reality – Setting a Challenging Target for the Eastern Region. ESD and Global to Local, 2001).
  - produce 14% of electricity needs from renewable sources (including offshore) by 2010.

C. Brentwood Context

i) Brentwood Replacement Local Plan August 2005

The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). Relevant policies within the Local Plan are:

- Policy IR6: Recycling Facilities states that where appropriate, the Council will seek the provision of recycling facilities in association with development proposals on sites convenient to the public. Under the terms of Policy CP4, a developer contribution may be sought towards such provision.
- A Public Service Agreement target has been set that relates to Policy IR6 that by 2010 value will be recovered from 30% of municipal waste and biodegradable municipal waste to landfill will be reduced by 75% of the 1995 level.
- Policy IR7: Energy and Water Conservation and the Use of Renewable Sources of Energy in New Development says that development proposals, including the conversion or re-use of existing buildings, should:
  i) Incorporate the principles of energy conservation and efficiency in the design, massing, siting, orientation, layout and use of materials
  ii) Encourage the use of renewable sources of energy.
  iii) Encourage water conservation
- Policy PC1: Land Contaminated by Hazardous Substances states that where development is proposed on land which is suspected of being contaminated by hazardous substances arising out of previous land uses such as industry, gas works, waste tips or landfill sites, an environmental survey assessing the nature and extent of the contamination will be required to accompany the application. Where appropriate development will only be permitted where the applicant can ensure, to the Council's satisfaction, that the land is capable of being decontaminated and reclaimed for beneficial use in accordance with an agreed remediation and validation scheme prior to the grant of planning permission; and appropriate measures to deal with contamination of the development site are undertaken before the implementation of any planning permission.
- Policy PC2: Hazardous Substances makes mention of the fact that development proposals involving the use, movement or storage of hazardous substances will only be permitted within employment areas and then only where it would not give

rise to an unacceptable risk to the health or safety of users of the site, neighbouring land or the environment.

- Policy PC7: Transport Pollution affirms that all new transport proposals and improvements to existing transport infrastructure and services will be assessed against their impact on air quality, noise levels and visual amenity, and will need to be designed so as to minimise any negative impacts and, where necessary, incorporate reasonable and appropriate mitigation measures.
- Policy PC8: Areas of Poor Air Quality states that in identified Air Quality Management Areas development for residential or other sensitive uses should have regard to PPS23 'Planning and Pollution Control' and 'Local Air Quality Management Policy Guidance LAQM.PG (03)'. Commercial developments likely to have significant detrimental impacts on air quality in these areas will not be permitted.

Further relevant policy related to climatic factors surrounds the promotion of sustainable methods of transportation and is summarised below.

- Policy T13: Bus Services seeks to encourage the introduction of improved and new services through quality bus partnerships as well as the provision of transport interchange improvements. Contributions will be sought towards the improvement of bus services and facilities in association with planning permission for new development.
- Policy T14: Rail Services highlights that, at a minimum, retention of existing services will be sought with encouragement of improved or new services and the refurbishment of rail station buildings and improvements in facilities for passengers including transport interchange improvements. Contributions will be sought towards the improvement of bus services and facilities in association with planning permission for new development.
- Policy T16: Cycling states that the provision of improved cycle parking and new cycle routes as part of highway infrastructure improvements/traffic management will be sought, together with an improved cycling environment through implementation of rural traffic calming schemes, the creation of "quiet lanes", accident remedial schemes, road safety initiatives and more secure cycle parking.
- Policy T17: Pedestrian Facilities seeks to promote walking through the provision of safe and convenient pedestrian routes, improved conditions (traffic calming measures etc), promoting high density developments, protecting existing shopping facilities in proximity to residential areas, the safer journeys to school initiative, "home zones" and "quiet lanes".

8.3 Current Baseline Information

This section presents information relating to energy consumption, waste, the Standard Assessment Procedure rating for new buildings, and car ownership.

A. Energy Consumption

Energy consumption and its perceived effect on climate change is a major concern. The production of the vast majority of energy within Essex currently requires the use of fossil fuels which are not renewable. The average energy consumption for all Essex districts is illustrated in Figures 42 to 46.

Domestic gas sales in Brentwood in 2004 (Figure 42) were the highest of all Essex districts, at 23,397 kWh, and were 10% above the Essex average of 21,270 kWh. The respective figures for commercial gas sales (Figure 43) show Brentwood to have the lowest sales of districts within Essex at 285,256kWh, significantly below the County average of 497,933 kWh.

Domestic electricity consumption/ meter point (Figure 44) within Brentwood, at 5,190 kWh in 2004, is only slightly above the Essex county average of 5,125 kWh. In terms of industrial and commercial electricity consumption/meter point (Figure 45) for the same year, Brentwood, at 60,300 kWh, is slightly lower than the Essex average of 62,091 kWh.

Total average domestic energy consumption per household in 2004 was 26,930 kWh in Brentwood, slightly above the average county consumption of 25,839 kWh (Figure 46).

Figure 42:

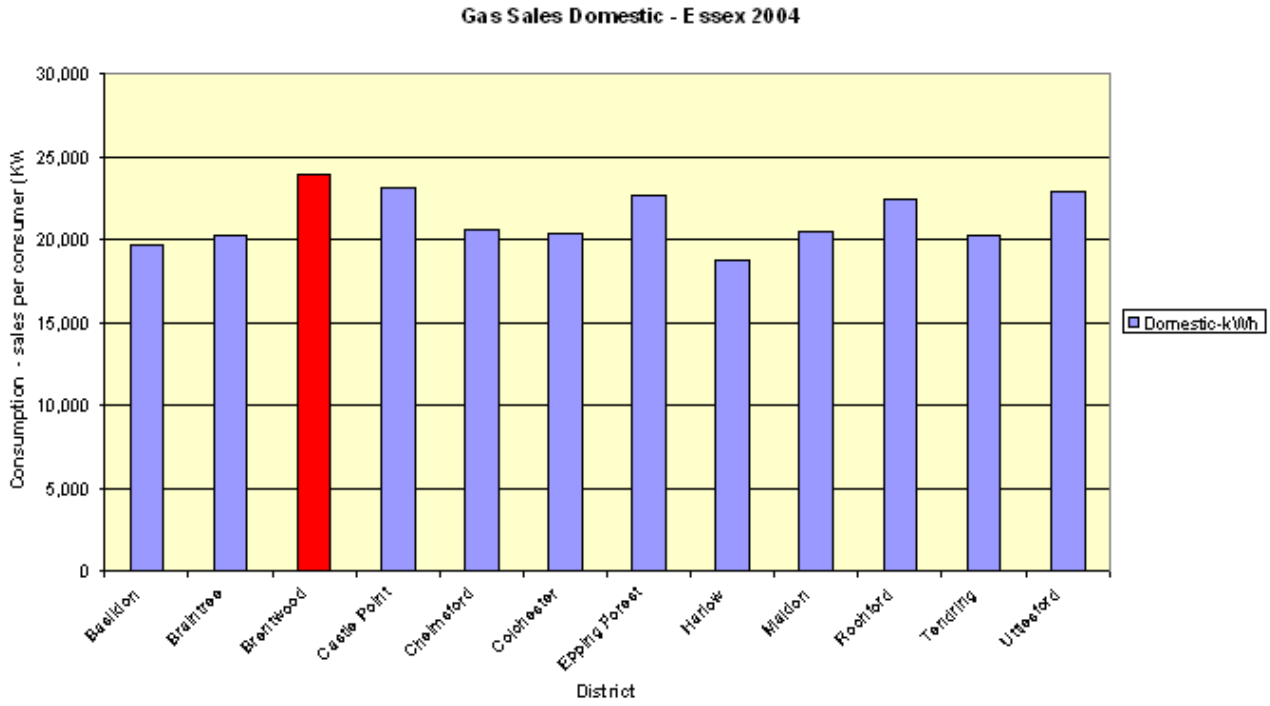


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Figure 43:

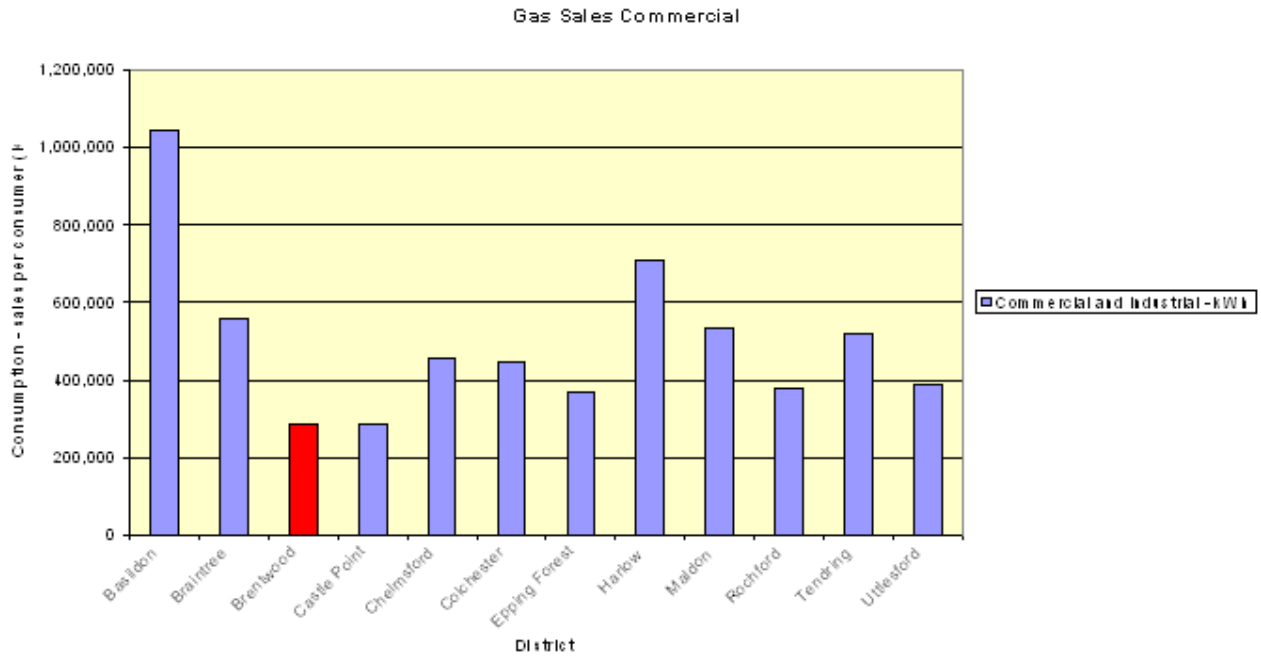

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Figure 44:

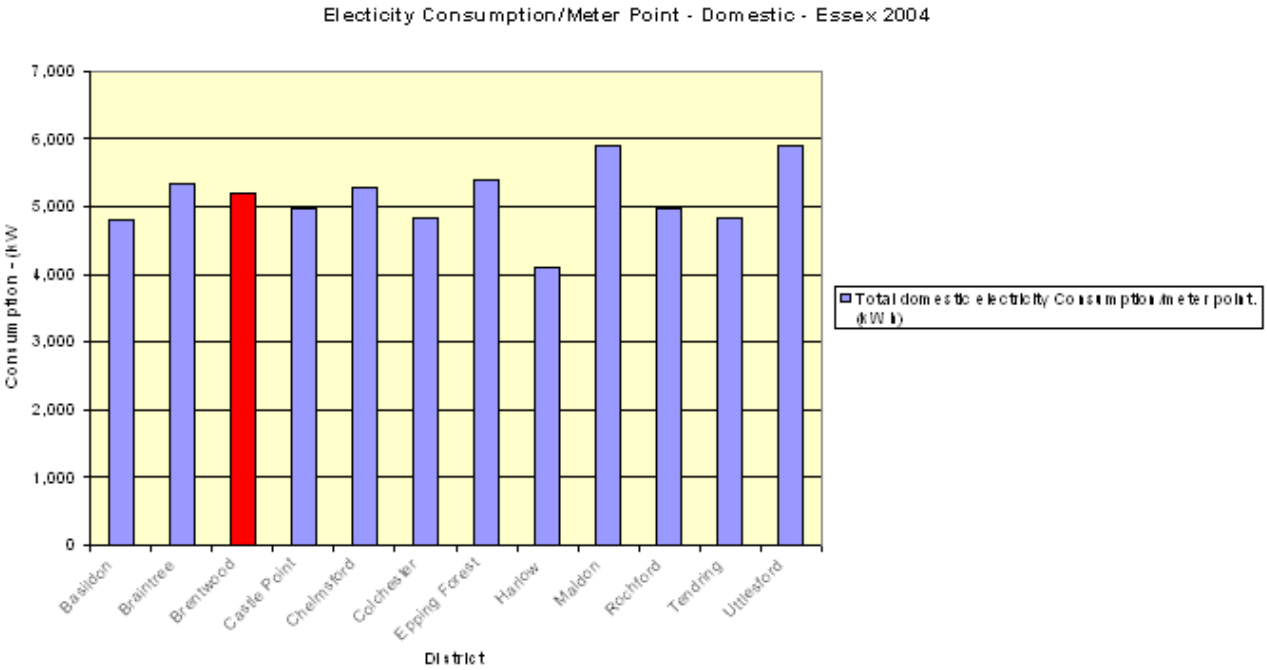

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Figure 45:

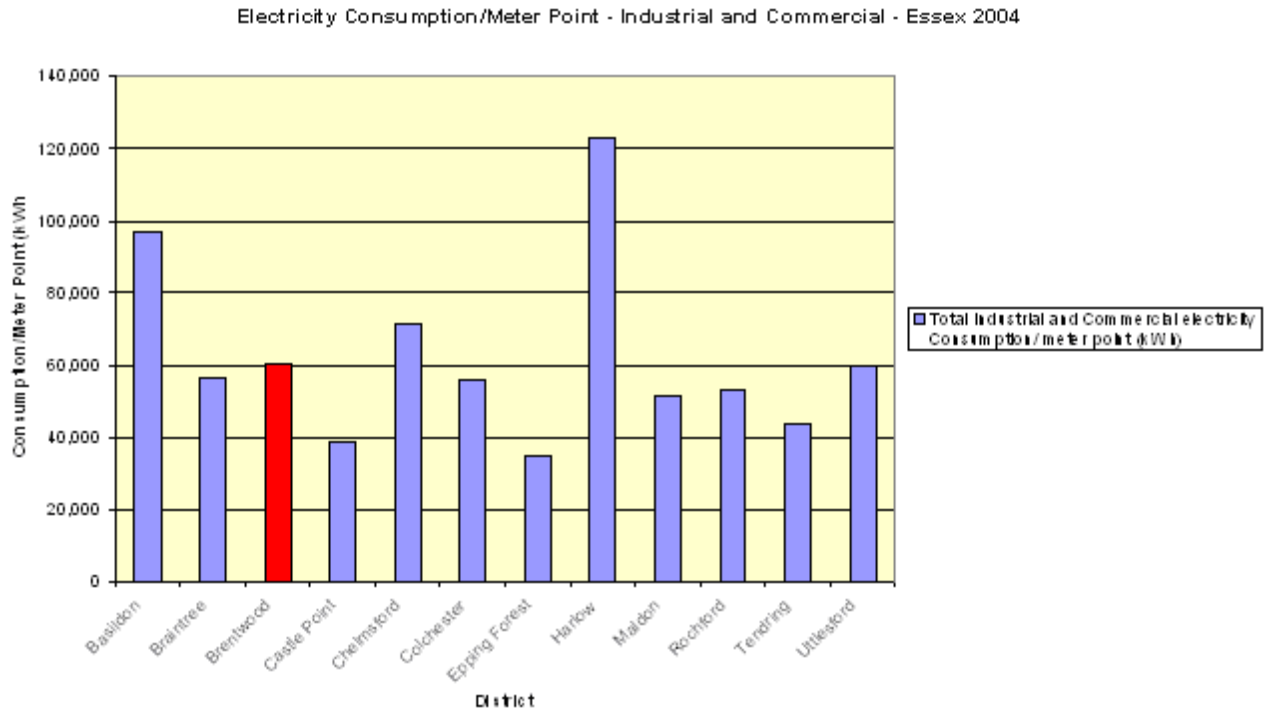

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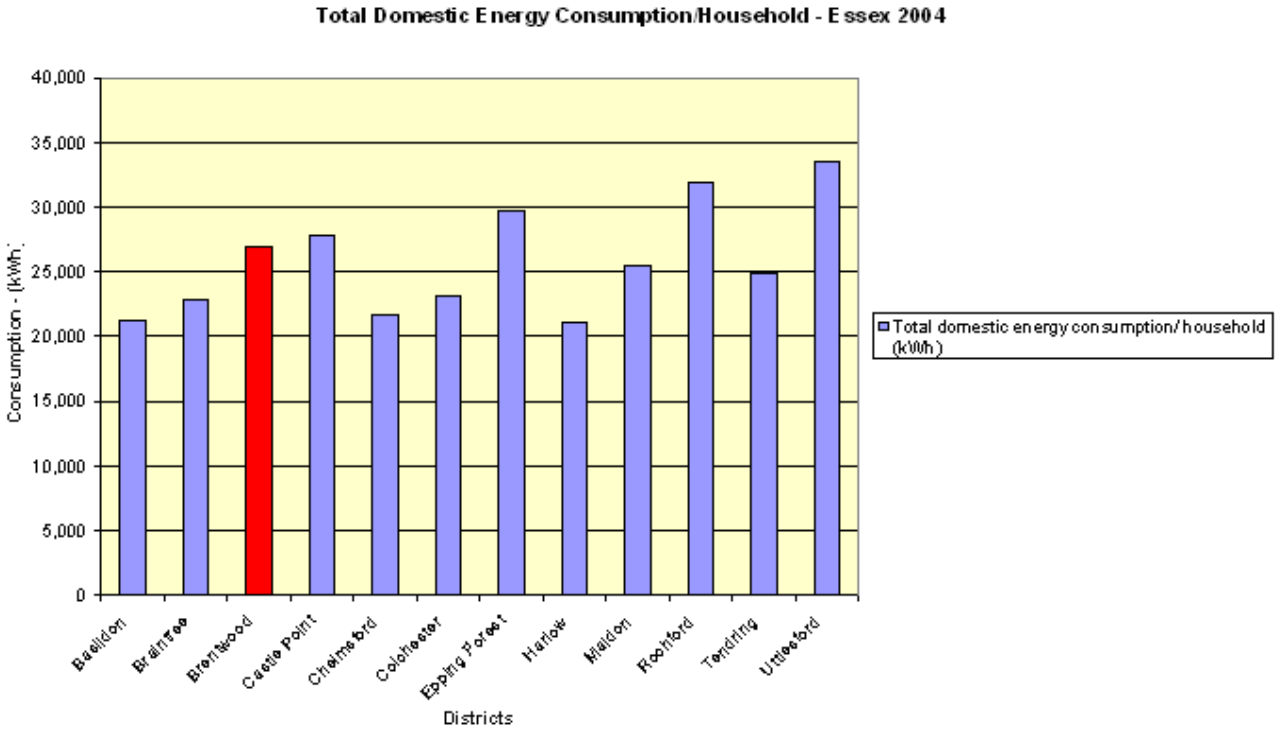
Figure 46:



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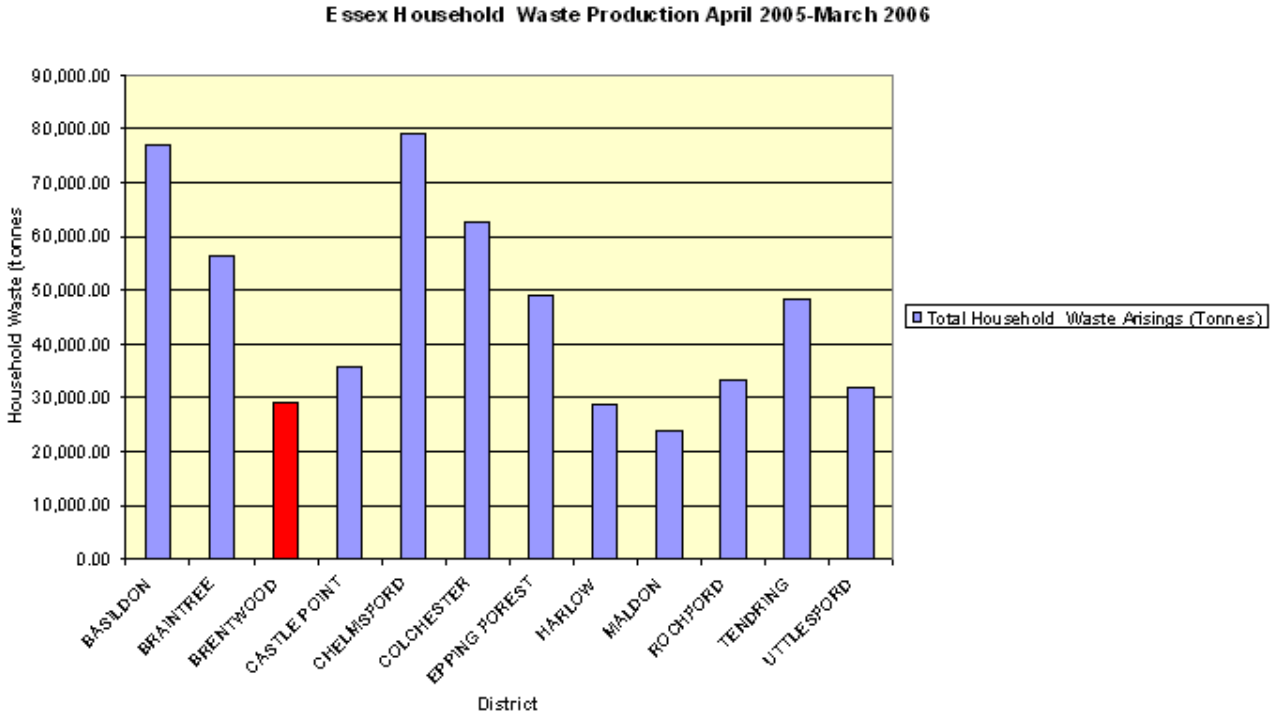
B. Waste

In terms of waste, Brentwood produced 29,227.80 tonnes of household waste in the period of April 2005 - March 2006. Figure 47 shows that this was the third lowest amount of waste amongst the twelve districts in the county and considerably lower than the county average

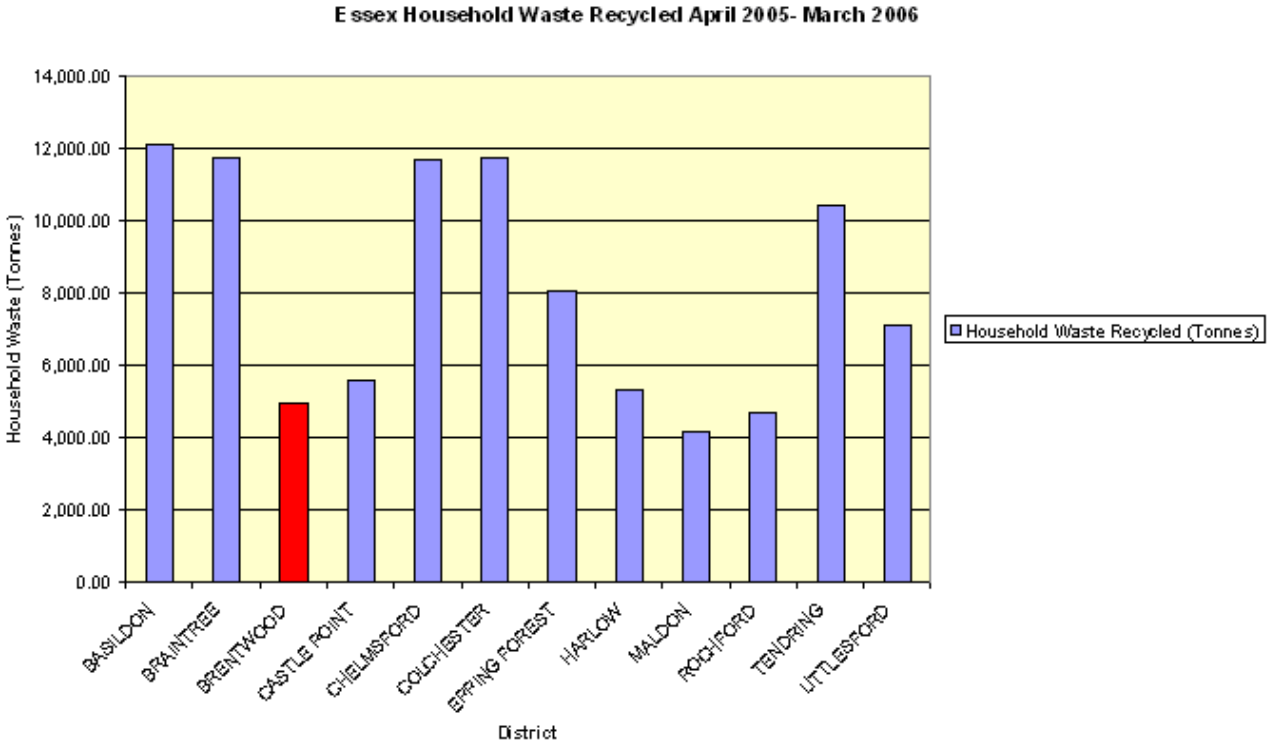
of 46,325.46 tonnes. However, Figure 48 shows that Brentwood performs below average within the county in regard to household waste recycled. Brentwood Borough recycles 4,940.80 tonnes of household waste (16.92% of the total produced) in comparison to the Essex county average of 8,147.8 tonnes (17.76%). Brentwood composted 2,831.90 tonnes of household waste (9.69% of all waste produced) in comparison to the Essex average of 3567.95 tonnes (7.02%) thus performing proportionately better than the county average.

Figure 47:



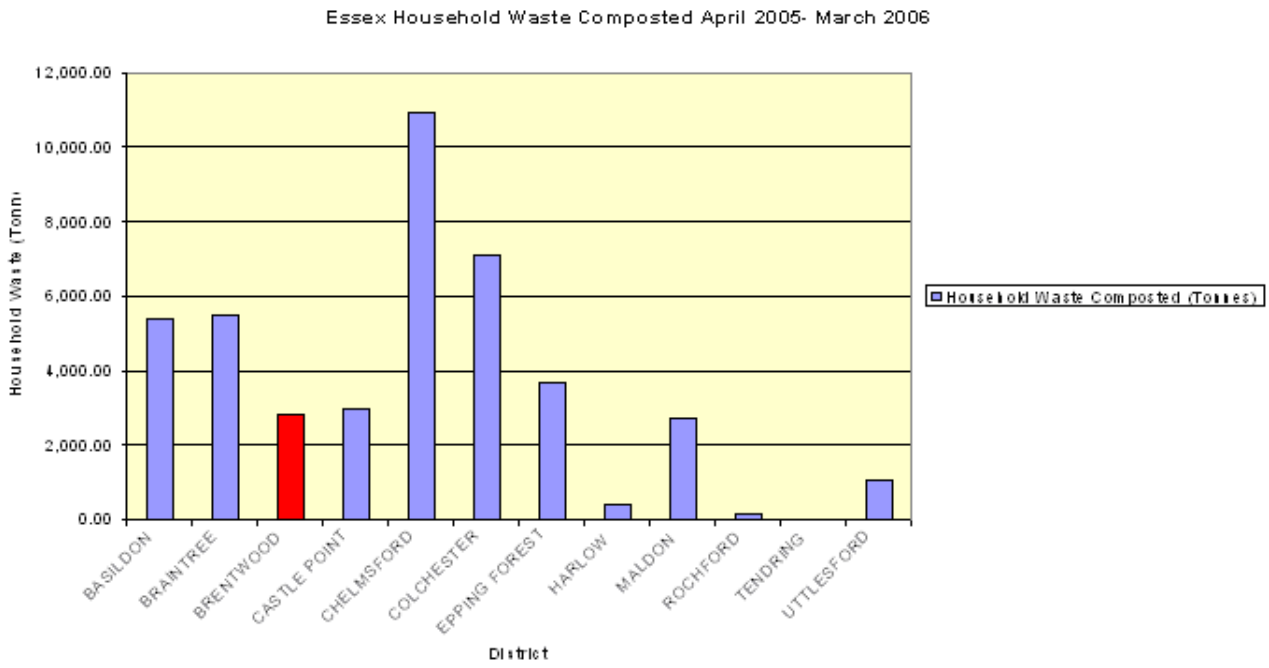
Essex Household Recycling & Composting Performance April 2005 - March 2006

Figure 48:



Essex Household Recycling & Composting Performance April 2005 - March 2006

Figure 49:



Essex Household Recycling & Composting Performance April 2005 - March 2006

"Our Future – In Progress" Corporate Performance Plan 2005-2006 (Brentwood Borough Council) states,

> *"the government has set statutory performance standards in relation to the percentage of household waste that is recycled (Best Value Performance Indicator BVPI 82a and 82b refer). The standard requires the Council to achieve a 30% recycling rate and this is measured by the sum of indicators 82a and 82b."*

The Council's performance against the performance indicators over the past few years is set out in Table 46.

Table 46: Brentwood Recycling and Composting Performance, 2001-2006

BVPI 82a	Percentage of the total tonnage of household waste arisings which have been recycled.	2005/2006 2004/2005 2003/2004 2002/2003 2001/2002	16.92% 13.79% 9.20% 11.80% 11.80%
BVPI 82b	Percentage of the total tonnage of household waste arisings which have been composted.	2005/2006 2004/2005 2003/2004 2002/2003 2001/2002	9.69% 10.70% 5.35% 2.44% NIL

Essex Household Recycling & Composting Performance April 2005 - March 2006

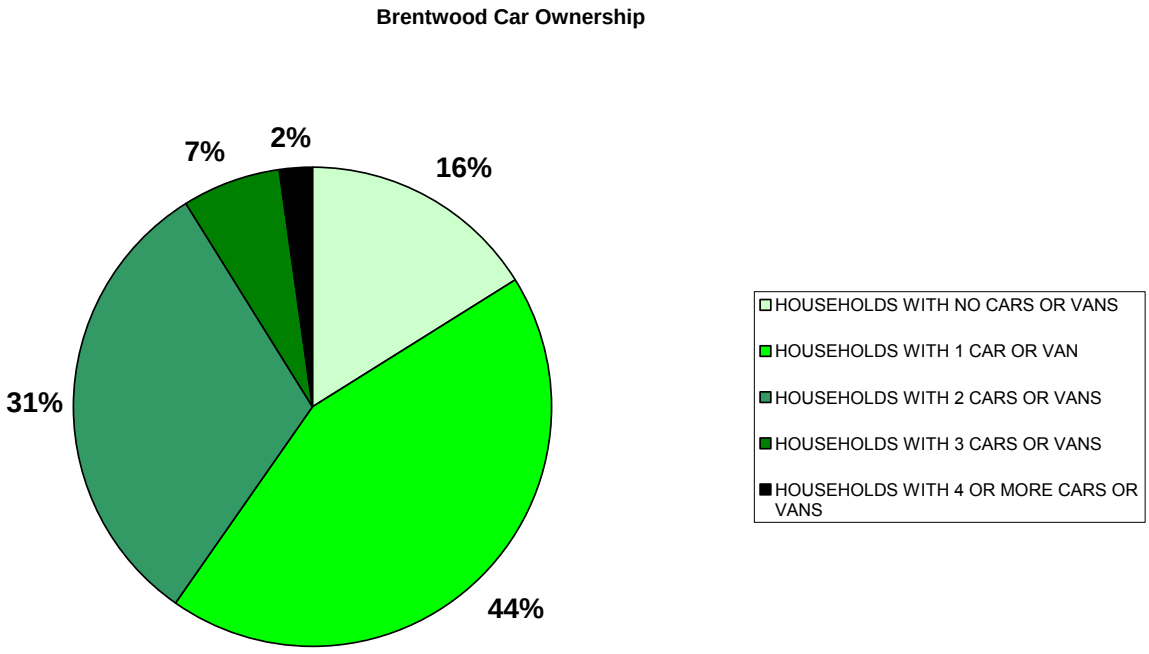
Table 46 shows that Brentwood has generally performed well in achieving an increase in tonnage of waste recycled during 2005/06. However, the performance for 2005/06 of 16.92% waste recycled was below the target level for the year of 18.5%. Composting of waste performed less well in 2005/06 than during the preceding year and was also below the set target of 11.5%.

The targets for both these indicators are being raised year-on-year in the future and will require continued improvement in performance if they are to be achieved. Recycling of all waste has a target of 20.0% set for 2006/07, rising to 22.5% in 2007/08 and to 23.5% for 2008/09. For composting the target for 2006/07 has been set at 12.0%, rising to 12.5% for 2007/08 and to 13.0% for 2008/09.

C. Standard Assessment Procedure (SAP) rating for New Dwellings

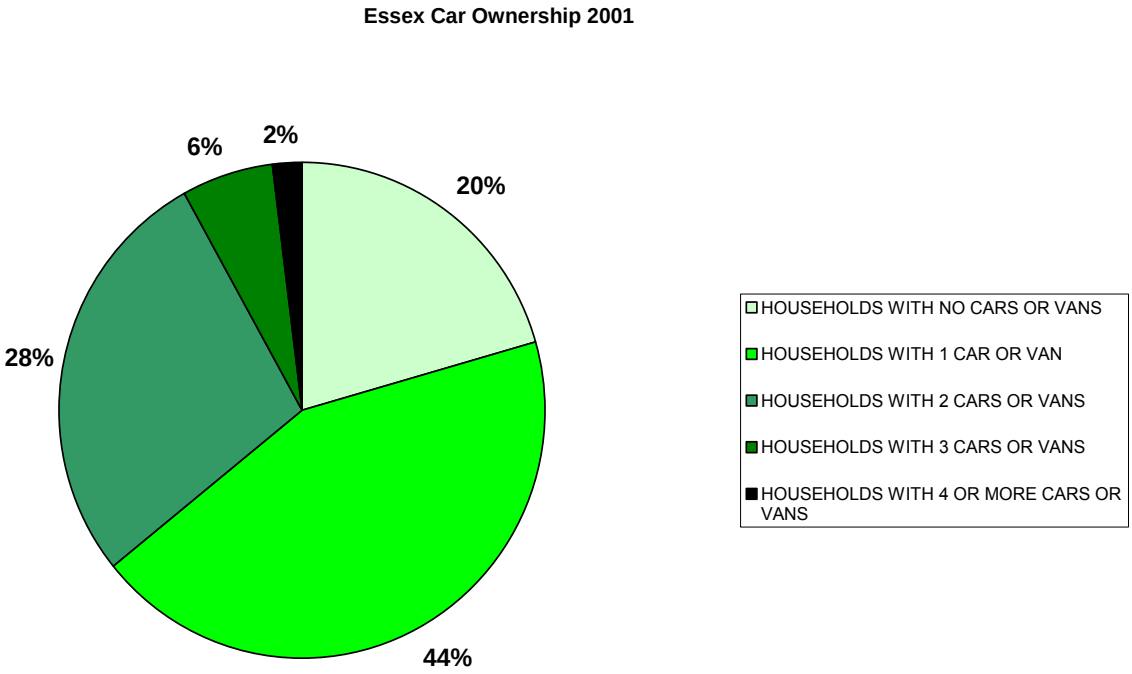
An amendment to Building Regulations in 2002 has resulted in a requirement for the calculation of the Standard Assessment Procedure (SAP) rating for all new dwellings and those converted through material change of use. At present there is little available data, due to implementation of the amendment being in its infancy, but with time and subsequent development, data will become more abundant. However, the average SAP rating of Local Authority owned dwellings has been included within "Our Vision – Our Future" Corporate Performance Plan 2006-2007 (Brentwood Borough Council). A target of 66.3 had been set for 2005/06, with a rating of 66.2 being achieved. For 2006/07 a SAP rating of 66.7 has been set. Subsequent targets for 2007/08 and 2008/09 are 67.4 and 68.9 respectively. The implementation of this BVPI will allow more data to become available regarding SAP ratings in the future.

Figure 50:



Census 2001

Figure 51:



Census 2001

D. Car Ownership

Car ownership is taken as a proxy indicator of the impact that car travel could have on air quality and climatic factors due to exhaust emissions.

As shown in Figure 50 and Figure 51**,** car ownership within Brentwood Borough displays a similar pattern to that for Essex. However, a lower proportion of households in Brentwood do not have a car/van (16%) compared to the Essex average. By contrast, a greater proportion of households in Brentwood have more than 1 car/van compared to the average for Essex – 40% compared to 36%. The number of households owning 1 car/van is about 44% in both the District and within Essex.

Despite these higher levels of car ownership the percentage of Brentwood's population travelling to work by public transport is 23.5%, significantly higher than the 15.5% average for Essex. Nevertheless, the preferred mode of transport to work for the majority is by car (as driver or passenger), although, at 56.7%, the proportion for Brentwood Borough is lower than the proportion of 62.8% recorded for Essex.

8.4 Summary

- Brentwood Borough currently has no renewable energy schemes to contribute towards meeting the regional target of 14% electricity generation from renewable sources target.
- Figures for domestic gas sales in the district in 2004 are the highest of all the other districts at 23,397 kWh and the Essex average of 21,270 kWh. The respective figures for commercial gas sales however, see Brentwood as the lowest of all districts within Essex at 285,256kWh and way below the County average of 497,933 kWh.

- Domestic electricity consumption/ meter point within Brentwood, at 5,190 kWh in 2004, is only slightly above the Essex county average of 5,125 kWh. In terms of industrial and commercial electricity consumption/meter point for the same year, the figure for Braintree is 60,300 kWh slightly lower than the Essex County average of 62,091 kWh
- The District produces lower amounts of household and municipal waste compared to other Districts in the county.
- Brentwood Borough's recycling figure of 16.9% failed to meet the Government PSA target of 25% recycling/composting of waste for 2005/06 (and improvement by 2008).
- Brentwood Borough Council has set targets for the average Standard Assessment Procedure rating of Local Authority owned dwellings on an annual basis to 2008/09.
- There are higher car ownership rates in Brentwood than in Essex as a whole, although travel to work by passenger transport is above the County average and travel to work by car is below average.

PART 2

Built ENVIRONMENT

9 ECONOMY AND EMPLOYMENT

9.1 Introduction

For an area to be sustainable, it must be able to attract industry and commerce in order that its citizens may gain employment and contribute to a successful local economy. This chapter presents information on the types of industry and commerce in Brentwood Borough, including commercial floor space vacancy rates and rateable values. It also presents information on the characteristics of employees in the Borough and travel to work patterns.

9.2 Policy Context

A. National Context

i) A Better Quality of Life – Sustainable Development in the UK 1999 sets out four aims for a sustainable development. One of these is the maintenance of high and stable levels of economic growth and employment.

ii) National planning policies are published by the Department for Communities and Local Government in Planning Policy Statements (PPS), which are gradually replacing Planning Policy Guidance Notes (PPG). In respect of industry and commerce, national guidance is presented in four documents:

- PPS1: Delivering Sustainable Communities (February 2005) states that the maintenance of high and stable levels of economic growth and employment is needed to help contribute to sustainable development. There is an expressed need that land suitable for industrial, commercial, retail, leisure and tourism and the public sector is made available in line with economic needs so that the local economy can prosper. Where possible, this land should be in existing centres to promote their vitality and viability. An authority should be able to provide for improved productivity, choice and competition between its industries in order to contribute towards a vibrant market. A local authority will also have to ensure that new developments are accessible to all by sustainable forms of transport such as by foot, bicycle or public transport in order to ensure that potential employees do not have to rely on private car use. This is particularly important for developments which are likely to result in a large number of employees regularly accessing a site.
- PPG4: Industrial, Commercial Development and Small Firms (November 1992) stresses the need to integrate environmental and economic objectives. Both man made and natural resources should be used responsibly and it is stressed that careful attention to environmental issues makes good business sense. PPG4 gives Local Authorities scope to propose policies aimed at channelling particular types of business development into particular locations, although the possible environmental ramifications of this will need to be addressed.
  The need for sustainable access is also highlighted in PPG4. Large developments should be located away from trunk roads to avoid congestion on roads designed for longer distance movement. Different types of industry will require different access arrangements. For example, warehouses depend on efficient distribution systems and the majority of traffic is likely to be large lorries. Consequently, these should be situated with easy access to strategic networks, with the prospect of rail or shipping links being examined. However, it is recognised that it may not be appropriate to

separate small scale industry and commerce from the residential communities which they serve.

- PPS6: Planning for Town Centres (March 2005) states that the Government's key objective for town centres is to promote their vitality and viability. This is to be achieved by planning for the growth and development of existing centres; and promoting and enhancing existing centres, by focusing development in such centres and encouraging a wide range of services in a good environment, accessible to all. Encouragement is given to investment that regenerates deprived areas and creates additional employment opportunities and an improved physical environment. It is also noted that it is not the role of the planning system to restrict competition, preserve current commercial interests or to prevent innovation.
- PPG7: Sustainable Development for Rural Areas (August 2004) asks Planning Authorities to support a wide range of economic activity in rural areas. The location of employment sites is important in rural areas. Facilities should be adequately served by public transport and provide improved opportunities for access and recycling. The Guidance also makes mention of the importance of leisure and tourism to rural areas. As well as sustaining local businesses, leisure and tourism can aid the protection of local heritage and culture.

B. Regional/County Context

i) Draft East of England Plan, December 2004

The Draft East of England Plan, prepared by the East of England Regional Assembly (EERA), was submitted to Government in December 2004. Following a period of public consultation the Plan was subject of an Examination in Public (EiP) between November 2005 and March 2006. The Report of the EiP Panel was published in June 2006. In December 2006 the Secretary of State published Proposed Changes to the Draft Plan for a period of public consultation to March 2007. The final Plan is expected to be published by Government by summer 2007.

Relevant policies in the Draft Plan, as submitted in December 2004 are:

- Policy E3: Approach To Employment Land Allocation states that Local Development Documents should allocate employment land to provide a range of sites and premises to meet the qualitative and quantitative needs of businesses within the sequential approach of the core spatial strategy. Efficient use must be made of the land, and development will be provided in urban areas, locations that minimise commuting, locations where public transport can be used and areas which minimise the impact on the environment.
- Policy E5: Supporting Economic Diversity and Business Development looks to Local Development Documents to formulate policies and proposals to support the sustainable development of an area's economy, including the designation of suitable land.
- Policy E7: Supporting Cluster Development highlights clusters as being of great importance to regional economic growth. Locally significant clusters should be designated as such by local economic partnerships in collaboration with local authorities and EEDA.
- Policy E10: Retail Strategy seeks to locate new retail development in existing centres, consistent with the size and character of the centre. Retail development is also identified as an important tool within priority areas for regeneration.

- Policy E11: Retail Distribution envisages that retail distribution centres will only be permitted in locations with good rail and road access.
- Policy E12: Out Of Town Retail states that there is no need for any additional regional out-of-town shopping centres within the planning period.
- Policy E13: Tourism suggests promoting more sustainable tourism which can extend employment outside of the normal tourist season.

ii) Regional Economic Strategy (RES) December 2004

The regional economic strategy (RES) is one of a suite of regional strategies and seeks coherence between and builds upon their economic development aspects. The RES sets the long-term vision for the sustainable economic development in the East of England. The RES needs to be considered alongside the Regional Spatial Strategy (the Draft East of England Plan) which covers the period up to 2021. The current RES was produced in 2004 and is formally reviewed every three years – consultation on the review of the RES is expected later this year.

The vision of the RES for the region is 'a leading economy, founded on our world-class knowledge base and the creativity and enterprise of our people, in order to improve the quality of life of all who live and work here'. 8 goals underpin this vision, 4 of which are particular relevance here,

- Goal One: A skills base that can support a world-class economy
  - Increasing employment rates in disadvantaged communities
  - Supporting wider career choices for young people
  - Developing skills that better meet business needs
  - Developing higher level skills to support the knowledge economy

- Goal Two: Growing competitiveness, productivity and entrepreneurship
  - Building a more enterprising culture
  - Providing a coherent and integrated business support service
  - Supporting the accelerated and sustained growth, productivity and competitiveness of the region's businesses
  - Developing the capacity of the region to engage in global markets and to improve the level and quality of foreign investment into the region
  - Ensuring business development adds value and vitality to local communities

- Goal Five: Social inclusion and broad participation in the regional economy
  - Supporting those who are disadvantaged to achieve their potential
  - Supporting disadvantaged communities and groups to access sustainable employment opportunities
  - Improving prospects for better quality employment
  - Providing improved access to essential services
  - Tackling discrimination experienced by communities or individuals

- Goal Eight: An exemplar in the efficient use of resources.
  - Promoting the adoption of resource efficiency and environmental good practice principles
  - Capturing the advantages of the renewable energy potential of the region
  - Progressing the development of environmental goods and services businesses
  - Establishing the region as an exemplar of environmentally sustainable development

iii) Framework for Regional Employment, January 2003

The Framework for Regional Employment highlights the importance of a region being able to supply sufficiently skilled workers. If they cannot be supplied, a region could be expected to experience social and environmental problems. Demand for higher skill sets invariably leads to higher wages, whilst those with lower level skills may not be given the training to enable them to develop theirs. Higher wages can drive up house prices in the region, making it difficult for low earners to be able to afford to buy. If the demand for skills cannot be met within the region, jobs are likely to be filled by workers from outside the area who may then not contribute to the local economy. Table 47 lists the issues harming employee development that have been given the highest priority in the Framework.

Table 47: Priority Issues in the Framework for Regional Employment

Top Priority – Both urgent and important priority requiring greater action, co-ordination and funding	High – Considerable action underway but still in need of either increased co-ordination or funding
• Increasing participation in higher education. • Response to redundancies • Skills for employability • Workforce development (WFD) and 'In Work' progression • Young people and career choices	• Future labour force • Higher level skills • Impact of housing on skills shortages • Increase of take-up of training by employees in small and medium-sized enterprises (SMEs) • Inward investment • Sector skills

Framework for Regional Employment, January 2003

iii) Essex and Southend-on-Sea Replacement Structure Plan April 2001

The Essex and Southend-on-Sea Replacement Structure Plan was adopted in April 2001. The Planning and Compulsory Purchase Act 2004 introduced a 'new' statutory plans system. The transitional arrangements for the 'new' system provide for the Adopted Structure Plan policies to be "saved" to 28th September 2007. Beyond that date policies of the Plan will cease to have effect unless they are "saved" by the Secretary of State. The Secretary of State has published a protocol on the procedures for saving Structure Plan policies. The protocol requires the Regional Planning Body to make requests for extending the life of Structure Plan policies to the Secretary of State by 1st April 2007. Such requests will be considered in the light of criteria set out in PPS11 paragraph 2.57.

Relevant policies in the Adopted Plan, April 2001 are:

- Policy CS3: Encouraging Economic Success seeks a sustainable balance of economic, commercial and housing development and transport investment. Achieving balanced economic success throughout the plan area is a critically important core objective. A key strategic priority is to secure a thriving and sustainable local economy in all parts of Essex and Southend by promoting economic development and enterprise.
- Policy BIW2: Ensuring Land Availability requires a Local Authority to provide an adequate range of sites to meet the needs of business, industry and warehousing. Positive action is required by authorities where a shortfall in provision is identified.
- Policy BIW4: Safeguarding Employment Land exists to ensure that land earmarked for employment will be safeguarded from redevelopment or change of use. The only

exception to this rule would be if the employment site is poorly located or development costs prohibitive.

Supporting text in the Plan notes that Brentwood is a town with an important employment centre but more constrained development capacity, need and potential. It has a structural employment problem, with the number of resident workers not matching the availability of local jobs. This is reflected in significant out-commuting, particularly to Greater London.

C. Brentwood Context

The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). Relevant policies within the Local Plan are:

- Policy E8: Employment Development Criteria, which states that employment areas need to be of a scale and nature appropriate to the locality and must be accessible by public transport, walking and cycling. Road access should avoid using narrow residential roads and country lanes and should also avoid significant traffic movements within rural areas. Necessary landscaping and screening should be provided where appropriate.
- Policy E9 Employment Development Criteria states that any development for employment (BI, B2 or B8) purposes will need to satisfy all the following criteria:
  i) It will be of a scale and nature appropriate to the locality
  ii) It is accessed by public transport, walking and cycling
  iii) Road access will avoid using narrow residential streets and country lanes and avoid significant traffic movements within rural areas
  iv) Appropriate landscaping and screening shall be provided.

9.3 Current Baseline Information

This section presents information on the types of industry and commerce in Brentwood Borough, including commercial floor space vacancy rates and rateable values. It also presents information on the characteristics of employees in the Borough and travel to work patterns.

A. Types of Industry and Commerce in Brentwood Borough

i) Counts of VAT Paying Businesses in Urban Locations

PPS1, Policy E3 from the East of England Plan and Policy BIW2 of the Essex and Southend-on-Sea Replacement Structure Plan all stress the need for a range of land to be released for a variety of industry use. Table 48 presents information that allows comparison of business types in Brentwood Borough with regional and national data to see whether the Borough specialises in particular industry types or whether it is under represented in particular industry types.

Table 48: Industry Types in Brentwood Borough

Type of Enterprise	Brentwood Borough	Percent	East England	Percent	England	Percent
Total Enterprises	2490	100.00%	165270	100.00%	1366245	100.00%
Agricultural	65	2.61%	11210	6.78%	86635	6.34%
Production	175	7.03%	14850	8.99%	120880	8.85%
Construction	350	14.06%	24010	14.53%	160380	11.74%
Motor Trade	105	4.22%	7400	4.48%	56340	4.12%
Wholesale	190	7.63%	11090	6.71%	92985	6.81%
Retail	210	8.43%	16020	9.69%	154640	11.32%
Hotels & Catering	115	4.62%	9750	5.90%	93745	6.86%
Transport	110	4.42%	3840	2.32%	49520	3.62%
Post/Telecommunications	20	0.80%	1190	0.72%	13175	0.96%
Finance	35	1.41%	590	0.36%	9200	0.67%
Property & Business Services	890	35.74%	48900	29.59%	413645	30.28%
Education	15	0.60%	770	0.47%	10360	0.76%
Health	5	0.20%	555	0.34%	7765	0.57%
Public Admin & Other Services	210	8.43%	7390	4.47%	116975	8.56%

National Statistics Online: Counts of VAT Based Enterprises by Broad Industry Group – Urban and Rural. Data published March 2005

The wide range of employment opportunities within the Borough is in accord with Policy E3 of the East of England plan which states that employment land is to be allocated to a range of business types. Property and Business services can be seen to be the most prevalent enterprise type within the Borough, with 35.74% of businesses being of this type. Property and Business services are also the most prevalent at the regional and national level. Across the entire spectrum of enterprise types, it is noticeable that Brentwood Borough does not stray far from the proportion of business types witnessed at either the regional or national level. Perhaps the main appreciable difference is that there is a larger proportion of Property & Business Services Enterprises and a lower proportion of agricultural enterprises and retail enterprises within the Borough, especially when the latter case is compared to the national level.

ii) Enterprises by Bulk Class

For the purposes of rateable value, the term ‘bulk class’ is used to describe premises in retail, office, manufacturing or warehousing use. As part of the 2005 revaluation exercise, a fifth category of ‘other bulk premises’ was introduced that includes mainly ‘community use’ type establishments such as community centres, village halls and social clubs.

It should be noted that the method for calculating commercial and industrial floor space and rateable value statistics changes periodically. The method changed for production of the 2005 data. Therefore direct comparison with historic data is not possible.

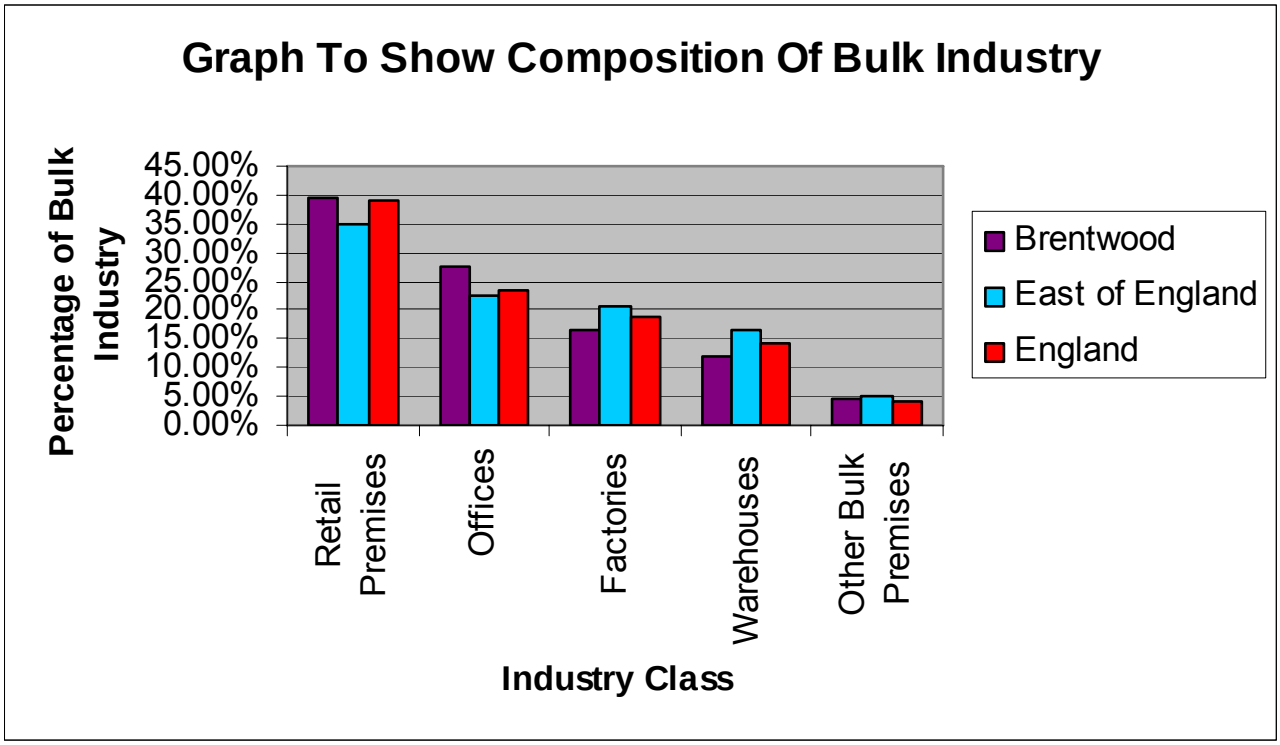
Analysis of data relating to bulk class uses allows comparison of business activity in the Borough by size of enterprise and in terms of space used. Use of both sets of data provides an indicator of the average scale of business in each industry type. Again, national and regional data are presented for comparative purposes.

Table 49: Percentage Composition of Bulk Industry

Bulk Enterprise Type	Brentwood	East of England	England
Retail Premises	39.66%	35.13%	39.21%
Offices	27.67%	22.51%	23.57%
Factories	16.46%	20.83%	18.69%
Warehouses	11.73%	16.56%	14.38%
Other Bulk Premises	4.47%	4.97%	4.14%

National Statistics Online. Published April 2005

Figure 52:



National Statistics Online: Commercial and Industrial Floor space and Rateable Value Statistics Data published April 2005

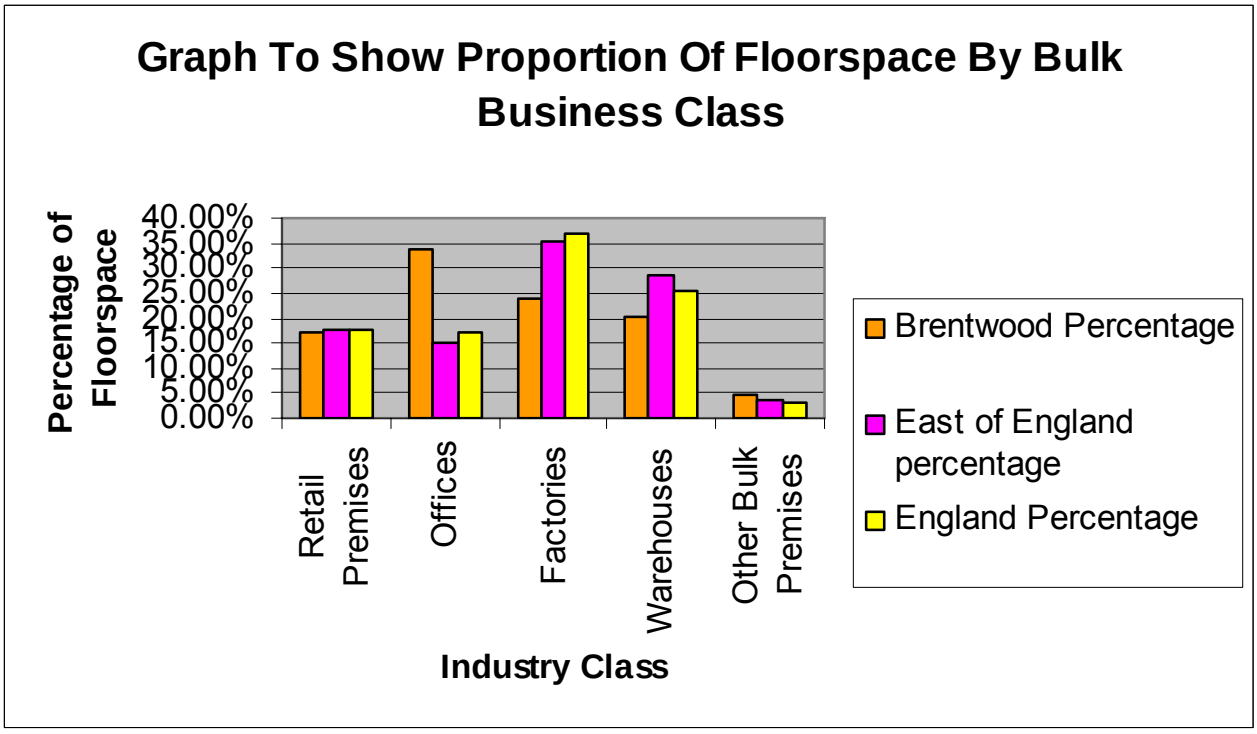
Table 49 and Figure 52 present data on the number of enterprises in Brentwood Borough by broad class of enterprise. The Borough's most prevalent industry classes, in terms of number of premises, are those of retail and offices (amounting to two-thirds of total enterprises). Whilst the percentage of retail premises within the Borough is similar to that at a national level, it is significantly above the regional average. With regard to office premises, Brentwood Borough has a much higher proportion than either the regional or national averages. By contrast, Brentwood Borough has proportionately less factory and warehouse premises than regional and national averages.

Table 50: Proportion of Floor space by Bulk Business Class

	Brentwood	East of England	England
Retail Premises	17.33%	17.77%	17.45%
Offices	33.86%	14.91%	16.91%
Factories	23.71%	35.30%	36.65%
Warehouses	20.32%	28.38%	25.63%
Other Bulk Premises	4.78%	3.65%	3.36%

National Statistics Online: Commercial and Industrial Floor space and Rateable Value Statistics Data published April 2005

Figure 53:



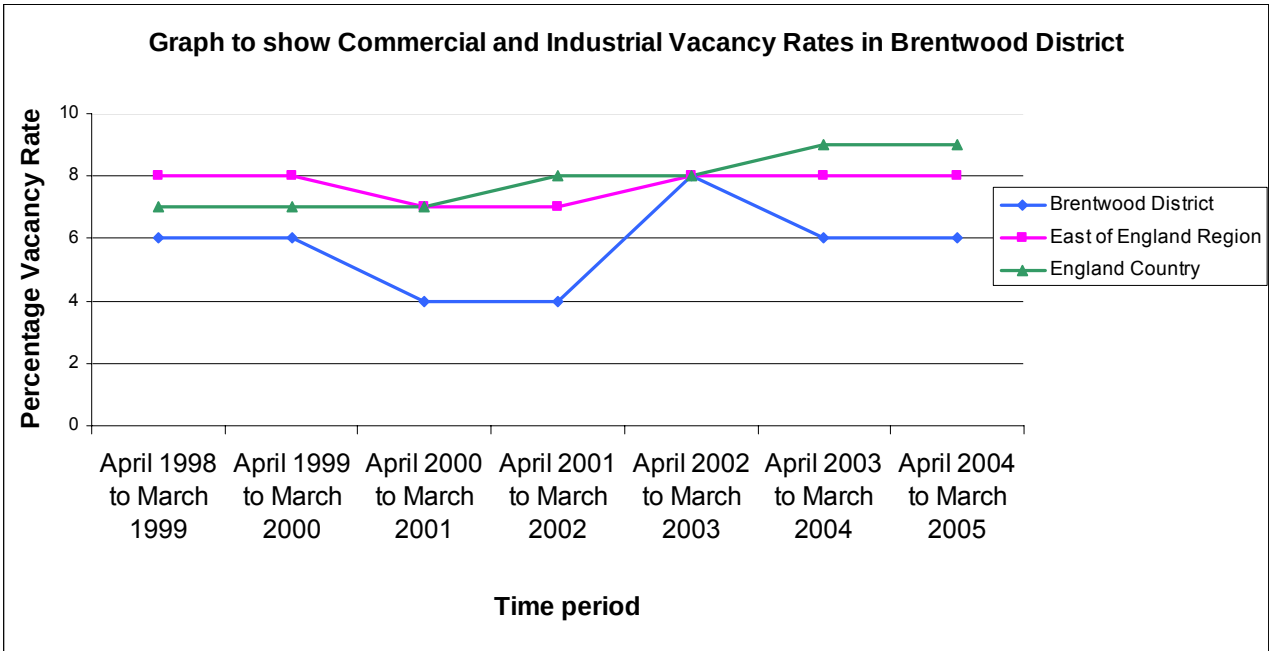
National Statistics Online: Commercial and Industrial Floor space and Rateable Value Statistics Data published April 2005.

Table 50 and Figure 53 present data on the floor space occupied by each class of bulk industry. As might be expected, considering the proportion of office premises in the Borough, this industry class accounts for the highest proportion of floor space. The floor space occupied by offices in the Borough, at just over 33%, is more than double the regional and national proportions. The proportion of floor space occupied by factories and warehouses is above the proportion of premises in these classes but account for a much lower proportion than at regional and national level. By contrast, the proportion of floor space occupied by retail premises is less than half the proportion of retail premises, and equivalent to the regional and national averages.

iii) Commercial and Industrial Property Vacancies

An analysis of commercial and industrial property vacancies could give an indication to any existing problems in the local economy and, particularly, in attracting business to the Borough.

Figure 54:



National Statistics Online: Commercial and Industrial Property Vacancy Statistics. Data published March 2005.

Figure 46 indicates that there was a sharp reduction in vacancy rates for business property within the Borough between April 1999 and March 2001, with a low of approximately 4%. Following this, there appears to have been a significant rise in vacancy rates with Brentwood Borough matching both the regional and national percentage of 8% between April 2002 and March 2003. However, the latest data available places Brentwood Borough with a vacancy rate of 6%, 3% lower than the national average and 2% lower than the regional average.

iv) Rateable Value

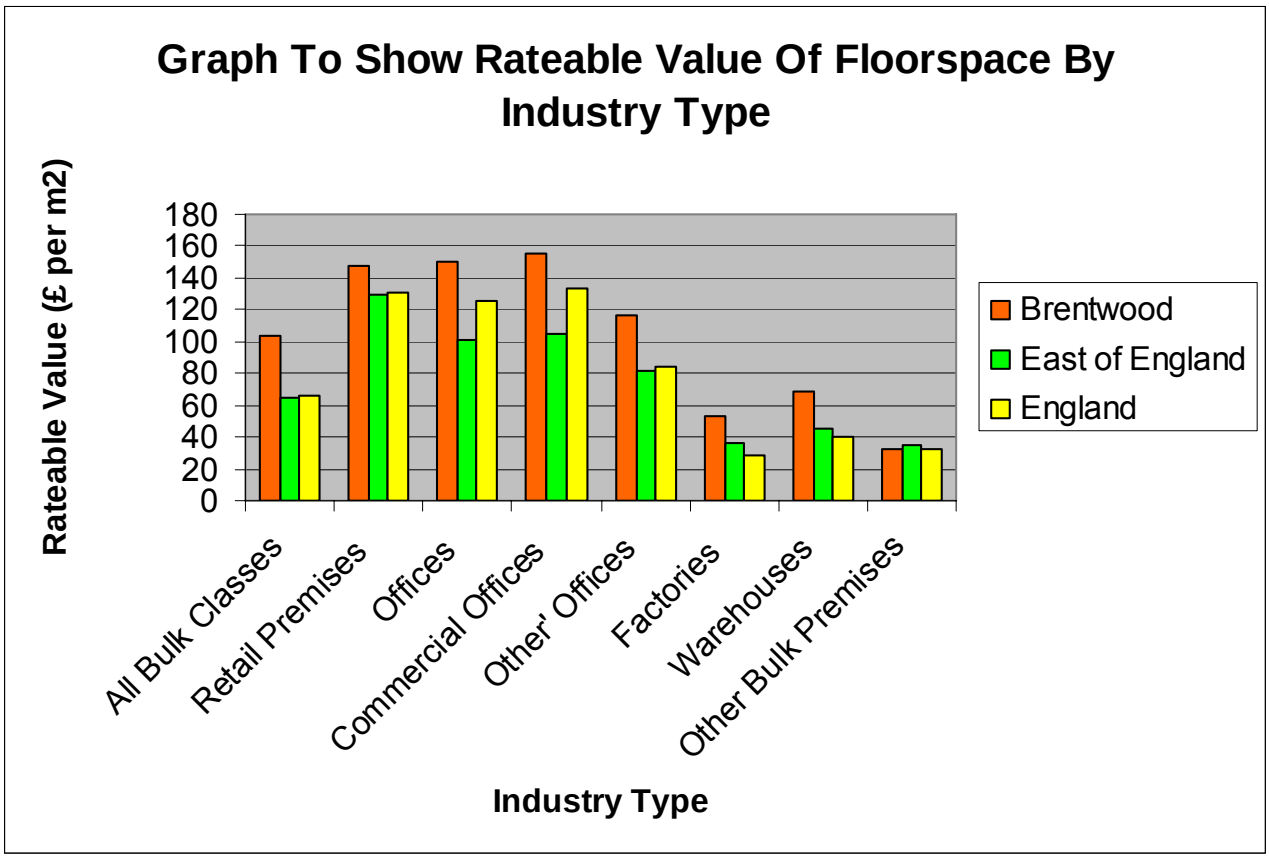
The rateable value of land, which is linked to the value of premises, is an important consideration in that it may be utilised as an indicator of the demand for premises and business strength within the Borough. A Borough with high rateable values for a land class indicates a healthy demand for that type of industry or premises in the area.

Table 51: Rateable Value of Floor space By Industry Type

	Rateable Value (£ per m2)		
Industry Class	Brentwood	East of England	England
All Bulk Classes	104	65	66
Retail Premises	148	130	131
Offices	150	101	125
Commercial Offices	155	105	134
Other' Offices	117	82	84
Factories	53	36	29
Warehouses	68	45	40
Other Bulk Premises	33	35	32

National Statistics Online: Commercial and Industrial Floor space and Rateable Value Statistics Data published April 2005

Figure 55:



National Statistics Online: Commercial and Industrial Floor space and Rateable Value Statistics Data published April 2005

Table 51 and Figure 55 show comparative rateable values by industry type for Brentwood, the region and England. The data show that Brentwood Borough has a higher rateable value than at the regional or national level across all industry types, the only exception being for the 'other bulk premises' class, which is equivalent to regional and national values. The higher than average rateable values, combined with the lower proportion of vacancy rates than the East of England or England (see Figure 46), indicate that Brentwood Borough has a viable and successful commercial and industrial base.

B. Employment Characteristics of Residents of Brentwood Borough

i) Employment Status of Brentwood Residents

High levels of employment are one of the 4 key pillars of a sustainable development as described in 'A Better Quality of Life – Sustainable Development in the UK (1999)'. In terms of general employment levels, Brentwood Borough is performing well. Total employees and self employed are at the regional average and well above the national average. Unemployment levels give little cause for concern as they are well below regional and national levels. The relatively low number of students, both economically active and inactive is due to the lack of higher education facilities available in the Borough. However, it would be hoped that students from the Borough would return upon completion of their studies and work within the local area.

Table 52: Employment Status of Brentwood Residents

Status	Brentwood	East of England	England
All People aged 16-74	49,514	3,884,104	37,607,438
Employees: Part Time (%)	11.93	12.48	11.78
Employees: Full Time (%)	42.39	42.61	40.55
Self-employed	10.07	9.25	8.28
Un-employed	1.86	2.60	3.35
Full-time students	2.01	2.32	2.57
Retired	15.99	13.99	13.61
Student	3.00	3.61	4.70
Looking after family/home	7.44	6.74	6.51
Permanently sick/disabled	3.42	3.91	5.52
Other	2.06	2.50	3.12

National Statistics Online, Economic Activity, 2001

ii) Employment Type of Brentwood Residents

Table 53 identifies 4 main employment categories, namely 'Manufacturing', 'Construction', 'Services' and 'Tourism-related'. Brentwood Borough has an above average proportion of people employed in the Finance, IT and other business activities sector. There is an under representation in the manufacturing sector and in the Public administration, education and health sector. The general proportion of full-time to part time jobs, at approximately 2:1, is in line with regional and national averages.

Table 53: Proportion of Employees in Different Industry Classes

Type of Job	Brentwood (employee jobs)	Brentwood (%)	Eastern (%)	GB (%)
Total employee jobs	29,870	-	-	-
Full-time	20,149	67.5	67.4	68.0
Part-time	9,721	32.5	32.6	32.0
Industry Class				
Manufacturing	2,611	8.7	12.0	11.9
Construction	2,039	6.8	5.1	4.5
Services	24,925	83.4	81.0	82.1
Distribution, hotels & restaurants	7,024	23.5	26.1	24.7
Transport & communications	2,283	7.6	6.4	5.9
Finance, IT, other business activities	8,033	26.9	19.5	20.0
Public admin, education & health	5,934	19.9	24.3	26.4
Other services	1,651	5.5	4.8	5.1
Tourism-related	2,307	7.7	7.8	8.2

Nomis: Annual Business Inquiry Employee Analysis (2004) Percentages based on working age population.
Notes: 1. Tourism-related includes employees also counted as part of the Services Industry Class.
2. Employee jobs excludes self employed, government supported trainees and HM Forces.

iii) Earnings By Brentwood Residents

The benefit of employment to the local economy is reflected not only in the availability of employment but also in the scale of earnings.

Table 54: Comparison of Average Weekly Earnings in Brentwood Borough against Regional and National Wages

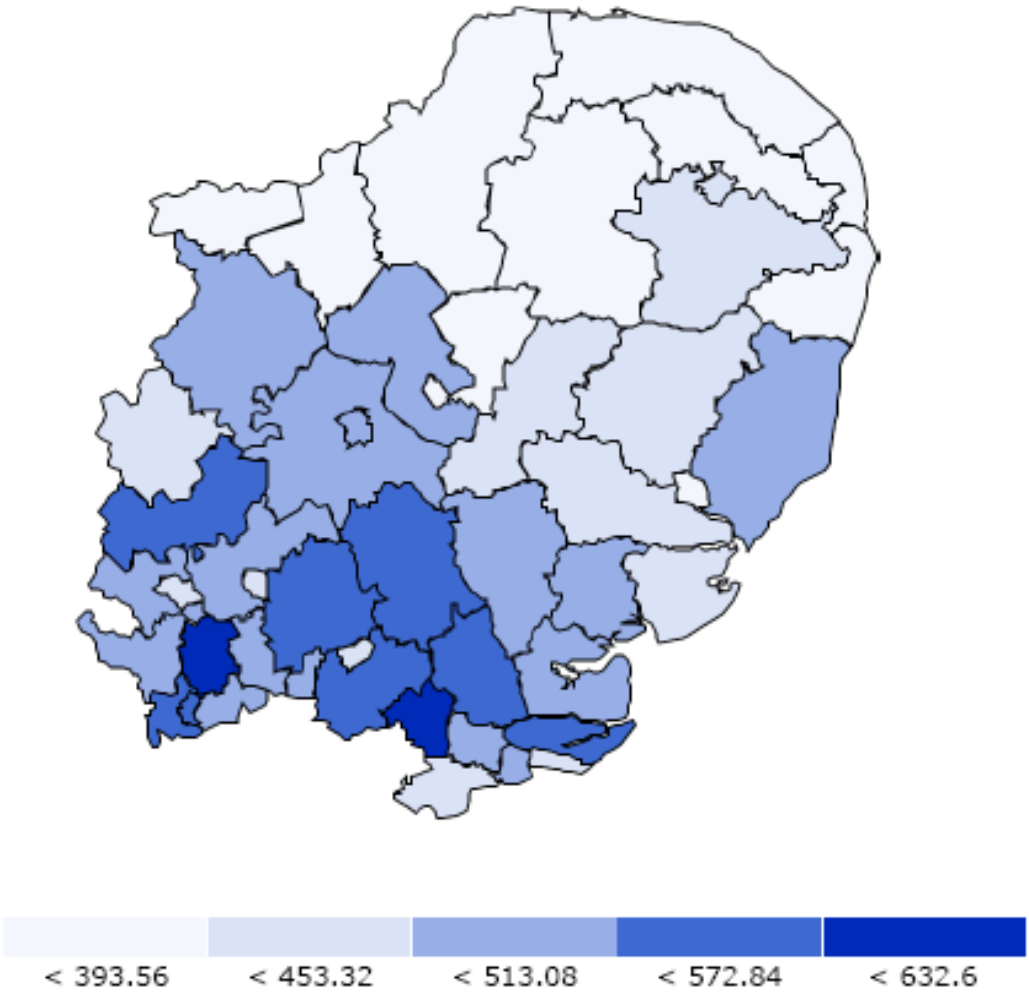
	Brentwood (pounds)	Eastern (pounds)	GB (pounds)
gross weekly pay			
Full Time Workers	632.60	457.20	433.10
Male Full Time Workers	732.40	500.00	474.90
Female Full Time Workers	599.10	375.70	372.30
hourly pay			
Full Time Workers	17.33	11.30	10.86
Male Full Time Workers	19.92	12.08	11.50
Female Full Time Workers	16.86	9.97	9.90

Nomis: Annual Business Inquiry Employee Analysis 2004

The average weekly earnings in Brentwood Borough compare very favourably to those for the Eastern region and Great Britain as a whole. This is particularly true for male full-time workers who earn £232.40 a week more than of their counterparts in the Eastern Region and £257.50 more a week than the average wage for Great Britain. Female full time workers also earn considerably more than the average for the Eastern region and Great Britain. Hourly pay rates in the Borough are also much higher than Eastern and Great Britain averages with Brentwood's full time workers earning £17.33 per hour, compared to £11.30 regionally and £10.86 nationally.

Figure 56 maps the weekly earnings by District in the East of England Region. The data underlying the map indicate that Brentwood is ranked 1st of the 48 Local Authorities in the region. With the highest weekly earnings, Brentwood demonstrates the pattern of weekly earnings in the region increasing with proximity to London.

Figure 56: Average Weekly Earnings in the Eastern Region



Taken from Nomis: Annual Business Inquiry Employee Analysis 2004

C. Travel to Work Patterns

i) Resident Workers and Jobs in Brentwood Borough

The 2001 Census recorded 32,809 residents of Brentwood Borough in employment. It also recorded 32,638 jobs in the Borough (see Table 55). Therefore, there was a statistical balance between the number of workers and jobs in Brentwood. However, only 14,818, or 45.2%, of residents also worked in the Borough. This means that over half of working residents travelled to work outside the Borough. Similarly, over half the jobs in Brentwood were taken up by people living outside the Borough.

The major employment destination of Brentwood residents was Greater London, with 11,655, or 35.5%, of Brentwood workers travelling to that destination for work. The next most popular destinations for employment were the adjoining Essex authorities of Basildon (1,738 or 5.3%), Chelmsford (1,446 or 4.4%), and Thurrock (758 or 2.3%). In total these four external job destinations provided employment for 15,597, or 47.5%, of employed residents from Brentwood. Together with those who live and work in the Borough, these areas met 92.7% of the employment needs of Brentwood workers.

The geographic origin of those working in Brentwood Borough shows a similar pattern. The largest flows of people travelling to the Borough to work come from Greater London (4,440 or 13.6%), Basildon (3,359 or 10.3%), Chelmsford (2,803 or 8.6%), and Thurrock (1,337 or 4.1%). In total these four external sources provided workers for 11,939, or 36.6%, of jobs in Brentwood. Together with those who live and work in the Borough, these areas met 82.0% of the employee needs of Brentwood businesses.

In net terms, 7,215 more Brentwood residents work in Greater London than residents of London who work in the Borough. Generally, Brentwood attracts more workers than it supplies to all other areas. There are net flows of workers from Brentwood to the two regional centres of Cambridge and Norwich, to Harlow, and to 4 districts in South Hertfordshire. But, the number of people involved is marginal with the net flow from Brentwood of only 78 people comprising an outflow of 326 workers and an inflow of 248.

Table 55: Travel to Work Flows for Brentwood Borough

	Work in Brentwood		Live in Brentwood		Net Flow
	Number	Percent	Number	Percent	Number
Brentwood	14,818	45.4	14,818	45.2	0
Greater London	4,440	13.6	11,655	35.5	-7,215
Basildon	3,359	10.3	1,738	5.3	1,621
Chelmsford	2,803	8.6	1,446	4.4	1,357
Thurrock	1,337	4.1	758	2.3	579
Sub-Total	26,757	82.0	30,415	92.7	-3,658
Other Areas	5,881	18.0	2,394	7.3	3,487
TOTAL	32,638	100.0	32,809	100.0	-171

Source: 2001 Census

ii) Transport Used for Travel to Work – Resident Population

Table 56 shows the means of transport used by residents of Brentwood Borough to travel to work.

Table 56: Travel to Work Methods for the Residential Population of Brentwood Borough

	Brentwood	Brentwood Percentage	East of England	East Of England Percentage	England	England Percentage
All People	32,087	100%	3884104	100.00%	35532091	100%
Works mainly at or from home	3,197	9.96%	243485	6.27%	2055224	5.78%
Underground, metro, light rail or tram	342	1.07%	21688	0.56%	709386	2.00%
Train	6,612	20.61%	156054	4.02%	950023	2.67%
Bus, minibus or coach	755	2.35%	102838	2.65%	1685361	4.74%
Taxi or minicab	201	0.63%	11693	0.30%	116503	0.33%
Driving a car or van	17,189	53.57%	1518613	39.10%	12324166	34.68%
Passenger in a car or van	1,420	4.43%	150642	3.88%	1370685	3.86%
Motorcycle, scooter or moped	295	0.92%	28637	0.74%	249456	0.70%
Bicycle	317	0.99%	100193	2.58%	634588	1.79%
On foot	2,376	7.40%	233737	6.02%	2241901	6.31%
Other	103	0.32%	11798	0.30%	104205	0.29%

National Statistics Online: Method of Travel to Work – Residential Population. Data published April 2001

Brentwood Borough has a higher proportional instance of car and van use when compared to both the regional and national level. At almost 20% higher than the national average,

this could be considered to be relatively significant. This higher proportion does however translate into a relatively small higher instance of people sharing private cars or vans. Brentwood Borough residents' use of Trains as a mode of transport compares well to both the East of England and the national level. At 20.61%, the proportion of Brentwood residents using this form of transport is 16% more than at the regional level and 18% more than at the national level. Bus use however, is lower than the regional and national averages. It is important to realise that direct comparisons in this manner may not be wholly accurate, as the geographic location, ease of access and supply of public transport will greatly influence these figures. Performance in other forms of sustainable transport, cycling and walking, is also mixed. More people travel to work on foot than at the regional and national level, although a smaller proportion cycle.

9.4 Summary

- The most prevalent business type in Brentwood Borough is Property and Business services, with a higher proportion than regional and national averages.
- There are significantly more office premises than the regional and national averages, but below average proportions of factory and warehouse premises.
- Commercial and industrial vacancy rates are lower than those found regionally and nationally.
- The Borough has a higher rateable value for its industrial and commercial floor space than that seen at the regional or national level.
- General employment levels in Brentwood Borough are at the regional average and above the national average.
- The Borough has an above average proportion of people employed in the finance, IT and other business activities sector.
- The proportion of full time to part time jobs is approximately 2:1, similar to regional and national levels.
- Average weekly earnings in the Borough are considerably higher than those found in the Eastern Region and Great Britain as a whole. Full-time workers in Brentwood Borough earn, on average, £175.40 a week more than their counterparts in the Eastern Region.
- Brentwood Borough has the same number of jobs as there are workers living in the Borough.
- Only 45% of workers living in Brentwood also work in the Borough.
- 35% of workers living in the Borough travel to work in London, with a further 12% travelling to the neighbouring authorities of Basildon, Chelmsford and Thurrock.
- 45% of jobs in Brentwood are taken by Brentwood residents, with 14% taken by residents of Greater London and a further 23% by people living in Basildon, Chelmsford and Thurrock.
- 58% of Brentwood residents travel to work by car or van, with 22% travelling by train or underground and 10% working mainly at or from home.

10 HOUSING

10.1 Introduction

Essex has a continually growing population, with the provision of adequate housing a key issue. Not only should there be sufficient housing for the growing population, there should also be suitable housing to meet a wide range of needs. Affordable housing should be factored into housing provision, especially in major housing developments, and there is a need to provide a proportion of housing stock to people who are homeless.

10.2 Policy Context

A. National Context

i) National planning policies are published by the Department for Communities and Local Government in Planning Policy Statements (PPS), which are gradually replacing Planning Policy Guidance Notes (PPG). In respect of housing, national guidance is presented in two PPSs:

- PPS1: Delivering Sustainable Communities (February 2005) promotes socially inclusive communities, including suitable mixes and accessibility of housing. It suggests that housing should be built to higher densities, on previously developed land, and with provision for adequate levels of affordable housing. An overriding aim is that everyone has the opportunity for a decent home in locations that reduce the need for travel.
- PPS3: Housing reflects the Government's commitment to improving the affordability and supply of housing in all communities by a step-change in housing delivery through a more responsive approach to land supply at local level. The Government's key housing policy goal is to ensure that everyone has the opportunity to live in a decent home, which they can afford, in a community where they want to live. The specific outcomes that the planning system should deliver are - high quality housing; a mix of housing, particularly in terms of tenure and price; a sufficient quantity of housing; housing in suitable locations, with good access to jobs, services and infrastructure; and a flexible, responsive supply of land. These outcomes should be based on the concepts and principles of sustainable development; a visionary and strategic approach; market responsiveness; collaborative working; evidence-based policy approach; and an outcome and delivery focus.
  Planning policies for housing include consideration of,
  - o High Quality – housing developments should be sustainable and environmentally friendly, reflecting the impact on climate change, biodiversity, accessibility, community development, urban form and design.
  - o Housing Mix - proposals should cater for all sections of the community by reflecting demand and the profile of households requiring housing, based on Strategic Housing Market Assessments and other evidence.
  - o Market Housing – a full range should be provided, including low-cost market housing.
  - o Affordable Housing – is defined as social-rented and intermediate housing. An overall target should be set for the amount of affordable housing to be provided, reflecting the Strategic Housing Market Assessment and likely levels of available finance. Separate targets should be set for social-rented and intermediate housing, where appropriate, and the size and type of affordable housing should be specified. Where viable and practicable, local planning authorities could set

different proportions for affordable housing to be sought for a series of site-size thresholds over the plan area. Plans should also set out the approach to seeking developer contributions to facilitate provision of affordable housing. In providing for affordable housing in rural communities there should be a positive and pro-active approach, informed by evidence, including, if appropriate, a Rural Exception Site Policy.

- Existing Housing Stock – empty houses should be brought back into use.
- Appropriate Level of Housing – should be determined by taking account of future need and demand for housing; availability of suitable land for housing; need to improve housing affordability; a Sustainability Appraisal of the environmental; social and environmental implications; and impact on existing or planned infrastructure. The Regional Spatial Strategy will set an overall housing provision and a distribution by housing market areas and local authorities.
- Identify suitable locations for housing – the Regional Spatial Strategy should identify broad strategic locations for development through assessing demand and need for housing; contribution to cutting carbon emissions; objectives of national policies and programmes; circumstances of the regional or sub-regional housing market; availability and capacity of existing major strategic infrastructure; and the need to crate and maintain sustainable communities. Local Planning Authorities should identify broad locations and specific sites by taking account of the spatial vision for the local area and the objectives of the Regional Spatial Strategy; the demand and need for housing; contribution to cutting carbon emissions; constraints or risks associated with locations and sites; options for accommodating new housing growth (including re-use and redevelopment of existing sites, urban extensions and new settlements); accessibility of proposed development to infrastructure, services and facilities; the needs of rural areas; and achieving sustainable communities across the authority area.
- Effective Use of Land – the national annual target is that at least 60% of new housing should be provided on previously developed land. The Regional Spatial Strategy should set a region-wide target and Local Development Documents should include a local target and trajectory.
- Efficient Use of Land – there is a national indicative minimum density of 30 dwellings per hectare, though authorities may wish to set a range of densities across their area.
- Delivering a Flexible Supply of Land – Local Development Documents should identify broad locations and specific sites that will enable continuous delivery of housing for at least 15 years from the date of adoption, taking account of the level of housing provision set out in the Regional Spatial Strategy. There should be sufficient deliverable sites for housing in the first 5 years, defined as sites that are available now, offer a suitable sustainable location, and with a reasonable prospect of housing being delivered. A further supply of sites should be identified for years 6 to 10 of the plan period and, where possible (or by broad location where not) for years 11 to 15. Sites critical to delivery of the housing strategy should be identified and the rate of housing delivery should be illustrated through a housing trajectory.
- Determining How Much Land is Required – sites with planning permission should not be included in future land supply unless they are developable at the point envisaged. Similarly, windfalls should not be included in the first 10 years land supply, unless there is a genuine reason preventing their identification.
- Maintaining a Flexible, Responsive Supply of Land – the supply of deliverable sites should be monitored annually within the Annual Monitoring Report process

with Local Development Documents setting out arrangements for managing the release of land.

Reflecting the principles of 'Plan, Monitor, Manage', Local Development Documents should set out a housing implementation strategy that describes the approach to managing delivery of the housing and previously-developed land targets and trajectories. In particular, Local Planning Authorities should set out the circumstances in which action will be needed to ensure performance is achieved in line with the housing and previously-developed land trajectories. Authorities should indicate what ranges of housing delivery and previously-developed land performance are acceptable and what action may be taken in what circumstances, so that there are clear and transparent points that will trigger management action. Where actual performance is outside the acceptable ranges or is at risk of not being met in future, authorities will need to establish the reason and take appropriate action.

ii) The Decent Homes Standard July 2000

As a minimum all council homes will have to meet the following standards by 2010 to comply with Government requirements. This standard must be met as the absolute minimum under all four of the measures, which are.

- Fitness - each home must achieve all of the following:
  - be structurally stable
  - be free from disrepair
  - be free from damp levels that could affect the health of the tenant
  - have lighting, heating and ventilation
  - have a piped supply of wholesome water
  - have facilities for preparation and cooking of food
  - have a suitably located toilet
  - have a bath or shower with hot and cold water
  - have suitable drainage.
- Reasonable State of Repair - all "key components" e.g. the foundation of the building, the external walls, the windows, the roof etc must all be in a reasonable state of repair. Other components such as ceilings, floors and internal walls should all be in a reasonable state of repair, although the Decent Homes Standard will allow one of these components not to be in a reasonable state of repair and still pass the standard.
- Reasonably Modern Facilities - there are six standards, with homes not meeting three or more of them failing this measure. The standard allows kitchens of 20 years or more and bathrooms of 30 years or more providing other criteria are met. The criteria are,
  - Kitchen with appropriate space and layout
  - Appropriately located bathroom and toilet
  - Adequate noise insulation
  - Adequate size and layout of communal areas in blocks of flats
  - Kitchen of 20 years old or less
  - Bathroom of 30 years old or less
- Thermal Comfort - the Decent Homes Standard requires all homes to have a central heating system with timing and temperature controls. Central heating can be gas, oil, or electric. There is also a requirement to have effective insulation such as loft insulation in houses.

iii) Sustainable Communities – Building for the Future

Homes in poor condition have been shown to damage the health of those who live in them and can also damage the sustainability of neighbourhoods. The strategy states that all social housing will have to conform to the Decent Homes Standard by 2010. By 2010, it is also hoped that quality design of public buildings will be integrated into all communities, especially those communities which have been revitalised.

iv) More Than a Roof: A Report into Tackling Homelessness March 2003 Homelessness can be caused by a number of different factors. Some of these can relate to the economy and the price of housing, or the problem may be more personal and relate to an individual or family. It is recognised that the overall supply of affordable housing is a key structural factor. In some areas of the country, the demand for housing is pushing prices above the threshold of what large numbers of the population can afford. This places additional pressures on the rented sector which also pushes up prices. Further issues have been a drop in investment and a decline in the amount of social housing, where large proportions have been sold under the Right to Buy Act. The report states that although statistics are collated regarding the number of homeless households and their reasons for being homeless, there is currently little analysis carried out in this field.

v) Sustainable Communities: Settled Homes; Changing Lives 2005 – sets out the national action plan for tackling homelessness. The action plan intends to tackle the three strands of prevention of homelessness, family and relationship breakdown, and domestic violence. The aim is to halve the number of households living in insecure temporary accommodation between 2005-2010. The Government expects to be able to deliver this promise by actions including:

- increasing funding for homelessness by 23% from £60m to £74m by 2007-08
- possible changes to homelessness legislation to improve the provision and take-up of preventative services and housing options
- improvement of hostels
- increasing the supply of new social housing by 50 per cent and making better use of existing social and private rented stock
- supporting and working in partnership with local authorities, voluntary sector agencies, landlords, homelessness service users and others
- improving information about homelessness

B. Regional/County Context

i) Draft East of England Plan December 2004

The Draft East of England Plan, prepared by the East of England Regional Assembly (EERA), was submitted to Government in December 2004. Following a period of public consultation the Plan was subject of an Examination in Public (EiP) between November 2005 and March 2006. The Report of the EiP Panel was published in June 2006. In December 2006 the Secretary of State published Proposed Changes to the Draft Plan for a period of public consultation to March 2007. The final Plan is expected to be published by Government by summer 2007.

Relevant policies in the Draft Plan, as submitted in December 2004 are:

- Policy H1: Distribution of Dwelling Position 2001 – 2021 states that Brentwood is expected to provide 2,900 additional dwellings, at a rate of 145 dwellings a year over the allotted time period.
- Policy H2: Affordable Housing and Mix of Housing Types stresses the need for Local Authorities to effectively plan and monitor housing needs and the proportion of affordable housing in new housing developments in co-operation with EERA, the Regional Housing Board and other relevant stakeholders to ensure that everyone has the opportunity of a decent home. Local development documents should secure an adequate supply of affordable housing consistent with local assessments by specfying the proportion of, and development threshold size for, inclusion of affordable housing. The capacity exists to make provision for sites of solely affordable housing in rural areas to meet an established need even though this is in contravention to standard policy.

ii) Regional Housing Strategy for the East of England, 2005 – 2010

Over the coming years, it is expected that the region will have to provide for an additional 23,900 homes a year, of which 11,000 will have to be 'affordable'. Section 106 agreements are identified as a key to delivering this target. Within existing residential areas, action to meet the Decent Homes Standard should be complemented by action on the quality of the environment surrounding homes: the 'liveability' of each neighbourhood. This should include bringing empty homes back into use, reusing derelict land and properties and providing more green space. The Regional Housing Strategy places emphasis on improving the sophistication of systems designed to anticipate future housing needs within the Region's communities. Stress is placed on an understanding of the housing market in terms of anticipating future needs and household circumstances to allow housing provision of a more strategic nature.

Avoiding homelessness is a key objective, with the strategy identifying that homelessness is a rising problem in the East of England. The house price to income ratio has increased from 5.4:1 in 2001 to 8.2:1 in 2004. The implications of increasing affordability problems are higher waiting lists and pressure to make more homeless application acceptances. Between 1997/98 to 2002/03, homeless acceptances increased by 37% across the region, compared to the national average of 25.9%.

The strategy makes reference to a number of PSA targets, of which those of relevance are:

- PSA 5: achieve a better balance between housing availability and the demand for housing, including improving affordability, in all English Regions while protecting valuable countryside around our towns, cities and in the green belt and the sustainability of towns and cities.
- PSA 7: by 2010, bring all social housing into a decent condition with most of this improvement taking place in deprived areas, and for vulnerable households in the private sector, including families with children, increase the proportion that live in homes that are in decent condition.

Private rented sectors are identified as having a significant role to play in providing temporary accommodation for homeless families and for people in the 'intermediate' housing market.

iii) Essex and Southend-On-Sea Replacement Structure Plan April 2001

The Essex and Southend-on-Sea Replacement Structure Plan was adopted in April 2001. The Planning and Compulsory Purchase Act 2004 introduced a 'new' statutory plans system. The transitional arrangements for the 'new' system provide for the Adopted Structure Plan policies to be "saved" to 28th September 2007. Beyond that date policies of the Plan will cease to have effect unless they are "saved" by the Secretary of State. The Secretary of State has published a protocol on the procedures for saving Structure Plan policies. The protocol requires the Regional Planning Body to make requests for extending the life of Structure Plan policies to the Secretary of State by 1st April 2007. Such requests will be considered in the light of criteria set out in PPS11 paragraph 2.57.

Relevant policies in the Adopted Plan, April 2001 are:

- Policy H3: Location of Residential Development states that the location of new housing development should have no adverse impact on the identity, character and setting of the established settlement, provide a choice of transport into and out and minimise destruction to the historic environment.
- Policy H4: Development Form of New Residential Developments sets out the priorities for new development. It seeks for mixed development in terms of land use and dwelling type. Historic features will need to be maintained and early provision of segregated routes for pedestrians and cyclists will be required.
- Policy H5:Affordable Housing states that the type and need for afforable housing will be identified from local housing strategies. The case is also made for developing affordable housing sites in rural areas as an exception to normal planning policies.

C. Brentwood Context

i) Brentwood Borough Replacement Local Plan Adopted August 2005

The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). Relevant policies within the Local Plan are:

- Policy H1: Residential Provision sets out the need to increase net dwelling stock by 1,450 dwellings in the Brentwood Borough between April 1996 and March 2011. Provision is to be concentrated within existing settlement areas and on previously developed land.
- Policy H9: Affordable Housing on Larger Sites states that on suitable sites for housing development of 20 units and above or on suitable residential sites of 0.66 hectares or more within Brentwood urban area, and on sites of 5 units and above or on suitable sites of 0.16 hectares or more within the defined settlements elsewhere in the Borough, the Council will seek a proportion of 35% of the number of dwelling units to provide for affordable housing.
- Policy H15: Housing Density states that the Council expects any proposal for new residential development to be of appropriate density that makes efficient use of land, with residential densities of no less than 30 dwellings per hectare. Town centre locations will be expected to provide densities greater than 65 dwellings per hectare.
- Policy H18: House Types states that the design and layout of new residential properties should seek to increase their flexibility, convenience, safety and accessibility.

ii) Brentwood Borough Housing Strategy 2004 and Beyond

The Strategy notes that due to its close proximity to London and good transport links, Brentwood is a desirable place to live. Major challenges are therefore to meet housing demand generally within green belt constraints, and to address the affordability issue for lower and middle income households for whom private house prices and rents are prohibitive. Median to average incomes are £13,900 to £27,500 per annum, with typical 3 bed semi-detached house price £245,000.

The Council has led on the development of the Local Strategic Partnership. Following a multi-agency cross-community consultation, the following strategic objectives have been identified, which, when incorporated in the fully developed Community Strategy, will also be formally reflected in the Corporate Performance Plan. They represent a development of the objectives previously identified in the Community Plan and Housing Strategy:-

- Ensuring that rural housing needs are met and recognising the contribution in this respect by small-scale developments.
- Recognising the role affordable housing can play in sustaining balanced, more inclusive communities.
- Seeking to ensure that homes comply with minimum standards of fitness and decency.
- Ensuring that sufficient land is identified and available to meet foreseen local housing needs, recognising the need for variety and environmental sensitivity.
- Optimising the use of land and property owned by the public, private, voluntary and community sectors to produce affordable social housing.
- Seeking to ensure that the necessary infrastructure is available to facilitate housing development.

iii) Brentwood Borough Council Homelessness Strategy 2003-2008

The strategy addresses issues relating to:

- Homelessness Prevention – Brentwood Borough Council is obliged by the Homelessness Act 2002 to prevent homelessness whenever possible. The Council is also the prosecuting Authority in relation to illegal activities and harassment of tenants by their landlords. It is recognised that homelessness can be caused by a variety of reasons and that early intervention and prevention work are crucial in tackling homelessness. People should be empowered to resolve their own problems and choose the best solutions which suit them. This can only be achieved if they have the correct advice and information available to them.
- Temporary Accommodation - To ensure that there is sufficient accommodation available for people who are or may become homeless is an integral part of the Homelessness Strategy. While the aim should be to ensure long term accommodation there is a role for temporary and emergency accommodation to play while long term housing solutions are sought. The Government has now set a target to ensure that Local Authorities do not use bed and breakfast for homeless families except in emergencies and then not for more than 6 weeks by April 2004. In addition to meeting this aim Brentwood Borough Council has also made the same commitment to reduce the use of bed and breakfast accommodation for vulnerable single homeless applicants. This will be a challenge in the context of increasing applications from this group.

- Long-term Housing Solutions - A significant number of homeless people have low incomes and access to social housing is likely to be their main option as a permanent home. Local Authority and RSL Allocation policies are going through a period of change brought about by the Homelessness Act 2002. The government is also encouraging Local Authority's to move towards choice based lettings which give greater choice and a more active role for applicants. Since the introduction in January, 2003 of the Allocations provision within the Homelessness Act all applicants on the Housing Register and Transfer List are awarded points on the same basis and subsequent offers of accommodation are made to those with the highest housing need. It is Brentwood's intention to review the new Allocations Policy to ensure that the points scheme is working in that those in greatest housing need are being offered appropriate accommodation. In terms of long-term housing solutions there is a clear link between the housing department and planning. The Homelessness strategy will dovetail with the aims of the housing strategy with regard to producing additional affordable social housing.
- Consultation with Service Users - It is acknowledged that consultation with service users and also those who are homeless but do not use the services are key in terms of developing and shaping the future of the service. Whilst this is the case it has been extremely difficult in engaging the services users in Brentwood.
- Monitoring and Evaluation - The Government has requested that council's produce a 5 year Homelessness Strategy. However Brentwood Council has decided to review its strategy on an annual basis. The Homelessness Strategy Working Group will be the body which monitors the progress against the Action Plan. By reviewing the strategy annually the group will be able to consider responses to changing environments and continue to anticipate future trends.

10.3 Current Baseline Information

A. House Prices

Table 57 shows the average price and number of sales of detached, semi-detached, terraced and flats/maisonettes in Brentwood Borough, East of England and England for 2004.

Table 57: Average House Prices and Number of Sales In 2004

Region / Area	Detached		Semi-Detached		Terraced		Flat / Maisonette	
	Av. Price	Sales	Av. Price	Sales	Av. Price	Sales	Av. Price	Sales
Brentwood	£385,500	468	£237,250	506	£186,500	319	£145,000	371
East of England	£235,000	38,086	£165,000	37,834	£142,000	39,659	£119,995	20,857
England	£235,000	250,382	£145,000	320,830	£120,000	3505	£142,500	219,839

National Statistics Online, Changes to ownership by dwelling price, Jan 2004 to Dec 2004

The average price of a semi-detached house in Brentwood Borough in 2004 was £237,250, significantly higher than the East of England average of £165,000 and England average of £145,000. The greatest difference in house prices is in the average price of a detached house. The East of England and England averages were the same at £235,000, but the cost of equivalent property within Brentwood Borough was £385,000, a difference of £150,000 or 64%. The probable explanation for these differing prices is the close proximity of the Borough to London, as well as its good road and rail links and a high quality urban and rural environment.

Table 58: Percentage of Sales by Housing Type in Brentwood Borough In 2004

Region / Area	Detached	Semi-Detached	Terraced	Flat / Maisonette
Brentwood	32.6%	33.2%	16.5%	17.5%
Essex	29.2%	30.5%	24.1%	16.2%
England	22.8%	31.6%	26.0%	19.2%

Brentwood Borough Council Local Development Framework Annual Monitoring Report 2004/ 2005

Table 58 shows that semi-detached housing accounted for the largest amount of sales by tenure type in Brentwood in 2004/2005. This correlates with the Essex and England figures. The second largest amount of sales was of detached housing in Brentwood Borough; a slightly higher figure than that for Essex and almost 10% higher than the England percentage. This is balanced by a much lower percentage of terraced properties sold during 2004/2005, with the Brentwood percentage of 16.5% significantly lower than both the Essex and England figures. Sales of flats and maisonettes were above the Essex average but below the national average.

B. Dwelling Stock by Tenure and Condition

In 2004 Brentwood had a total dwelling stock of 30,316, of which 26,877 or 88.7% of dwellings were owner occupied or private rented with 11.3% being local authority, Registered Social Landlord (RSL) or other public sector dwellings. The proportion of local authority, RSL or other public sector dwelling stock is lower in Brentwood than either regionally or nationally. As Table 60 (overleaf) shows there were no unfit dwellings in the local authority, RSL or other public sector stock in Brentwood in 2004. A total of 560 dwellings in the owner occupied and private rented stock were classed as unfit at 2004. This represents 1.85% of the total dwelling stock of the Borough, which is a lower proportion than the 3.2% recorded for the region and the national figure of 4.3%.

Table 59 shows the characteristics of the regional and national local authority housing stock. Unfortunately it has not been possible to obtain equivalent data for Brentwood.

Table 59: Local Authority Housing Stock

	Brentwood		East of England		England	
	Actual	Percent	Actual	Percent	Actual	Percent
Low Rise Flat	0	0%	47647	21.3%	419071	18.0%
Medium Rise Flat	0	0%	32003	14.3%	427665	18.4%
High Rise Flat	0	0%	5900	2.6%	200993	8.6%
House	0	0%	137650	61.7%	1276244	54.9%
One Bedroom	0	0%	67031	29.9%	690372	29.6%
Two Bedrooms	0	0%	69751	31.1%	773304	33.2%
Three or More Bedrooms	0	0%	87267	38.9%	864033	37.1%
Age of Dwelling: Pre 1945	0	0%	31407	18.3%	462446	30.1%
Age of Dwelling: Post 1944	0	0%	140135	81.7%	1075258	69.9%

National Statistics Online: Local Authority Dwelling Stock by Size, Age and Type. Data published April 2004

Table 60: Dwelling Stock by Tenure and Condition

	Brentwood	Brentwood Percentage	East of England	East of England Percentage	England	England Percentage
Total Dwelling Stock	30316	100.00%	2370842	100.00%	21723001	100.00%
LA Dwelling Stock	2626	8.66%	224063	9.45%	2318481	10.67%
RSL Dwelling Stock	738	2.43%	156695	6.61%	1771629	8.16%
Other Public Sector Dwelling Stock	75	0.25%	14346	0.61%	82810	0.38%
Owner Occupied and Private Rented Dwelling Stock	26877	88.66%	1975738	83.33%	17550081	80.79%
Total Unfit Dwellings	560	1.85%	72818	3.07%	1034496	4.76%
Unfit LA Dwellings	0	0.00%	237	0.01%	97827	0.45%
Unfit RSL Dwellings	0	0.00%	1301	0.05%	40094	0.18%
Unfit 'Other Public Sector' Dwellings	0	0.00%	205	0.01%	4103	0.02%
Unfit Owner Occupied and Private Rented Dwellings	560	1.85%	75921	3.20%	934875	4.30%

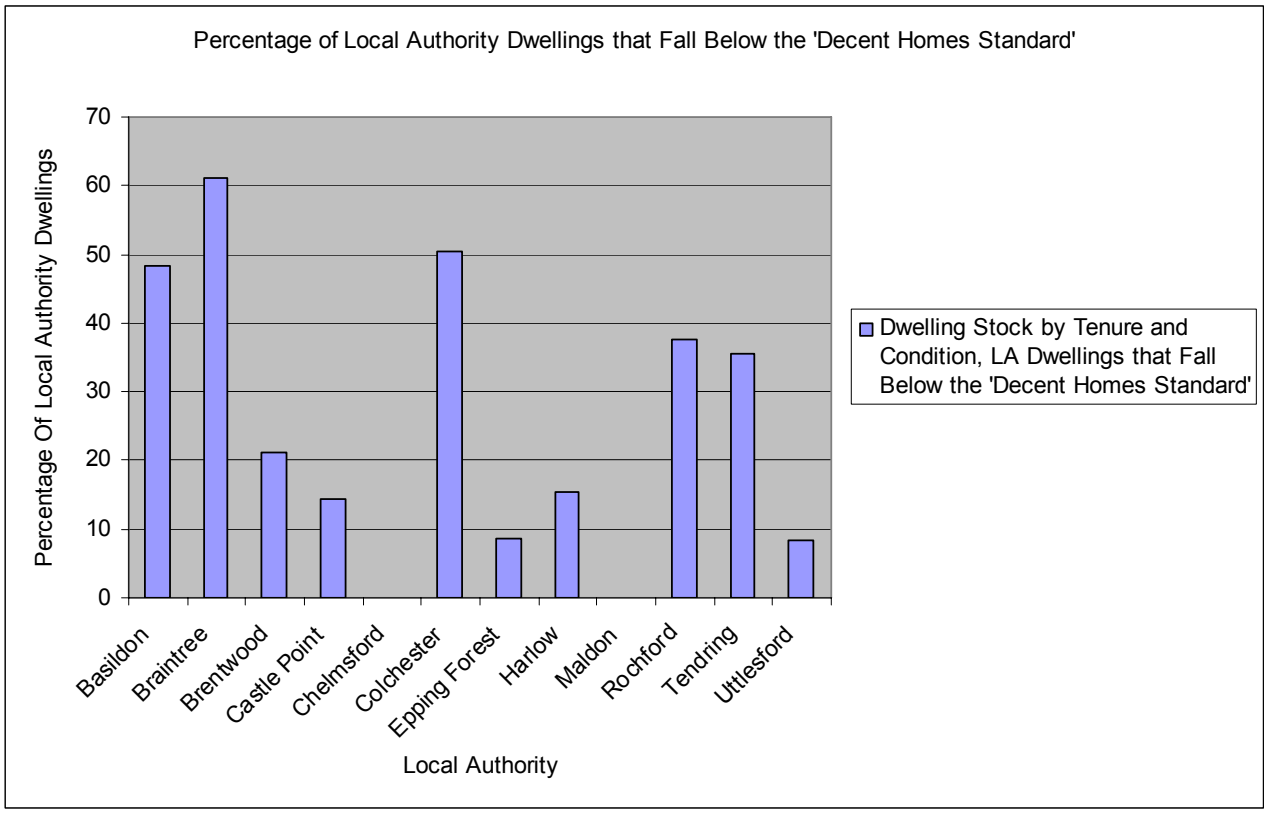
National Statistics Online: Dwelling Stock by Tenure and Condition. Data published April 2004

C, Decent Homes Standard

This section presents data relating to the Decent Homes Standard (see above). It should be noted that data are not available for either Chelmsford Borough Council or Maldon District Council, which have transferred their entire housing stock, to Chelmer Housing Partnership and Moat Housing Group respectively.

In respect of the Decent Homes Standard, as Figure 57 shows, Essex authorities split into two groups – one with at least a third of local authority dwellings falling below the standard and the other with about a fifth or less below the standard. Brentwood, with 21.1% of local authority dwellings falling below the Decent Homes Standard has the highest proportion of the lower group of authorities. Epping Forest records the lowest value (8.5%) with Braintree recording the highest value (61%). As a minimum, all social housing must conform to the Decent Homes Standard by 2010. The number not conforming was expected to have dropped by a third between 2001 and 2004 (www.communities.gov.uk : Decent Homes Standard).

Figure 57:



National Statistics Online: Dwelling stock By Tenure and Condition. Data published April 2004

D. Affordable Housing Completions

The number of affordable housing completions has been highly variable between 2001 and 2006 – ranging from 81 in 2001/02 to nil in 2003/04. Over the five-year period 2001 to 2006 a total of 118 affordable dwelling completions were recorded.

Table 61: Affordable Housing Completions in Brentwood Borough 2001 – 2006

Year	2001/02	2002/03	2003/04	2004/05	2005/06
Completions	81	14	0	2	21

Brentwood Borough Council Annual Monitoring Report 2005

The information available on affordable housing completions is limited. As can be seen, over the 4 years for which data was received, however no percentages are available. There were 81 affordable housing completions in 2001-2002, whilst there were no affordable housing completions in 2003-2004. During the five year period there were a total of 118 affordable housing completions, which represents 12.8% of total net dwelling completions between 2001 and 2006.

E. Homelessness

Homelessness is identified as a serious and growing problem by the Government that will need to be addressed to achieve its aim of giving everyone the opportunity of a decent home. This section includes information regarding the number of Local Authority housing in comparison to Housing Associations, Right to Buy sales, number of households on the housing register and the number of homelessness decisions and acceptances that were made by Brentwood Borough Council.

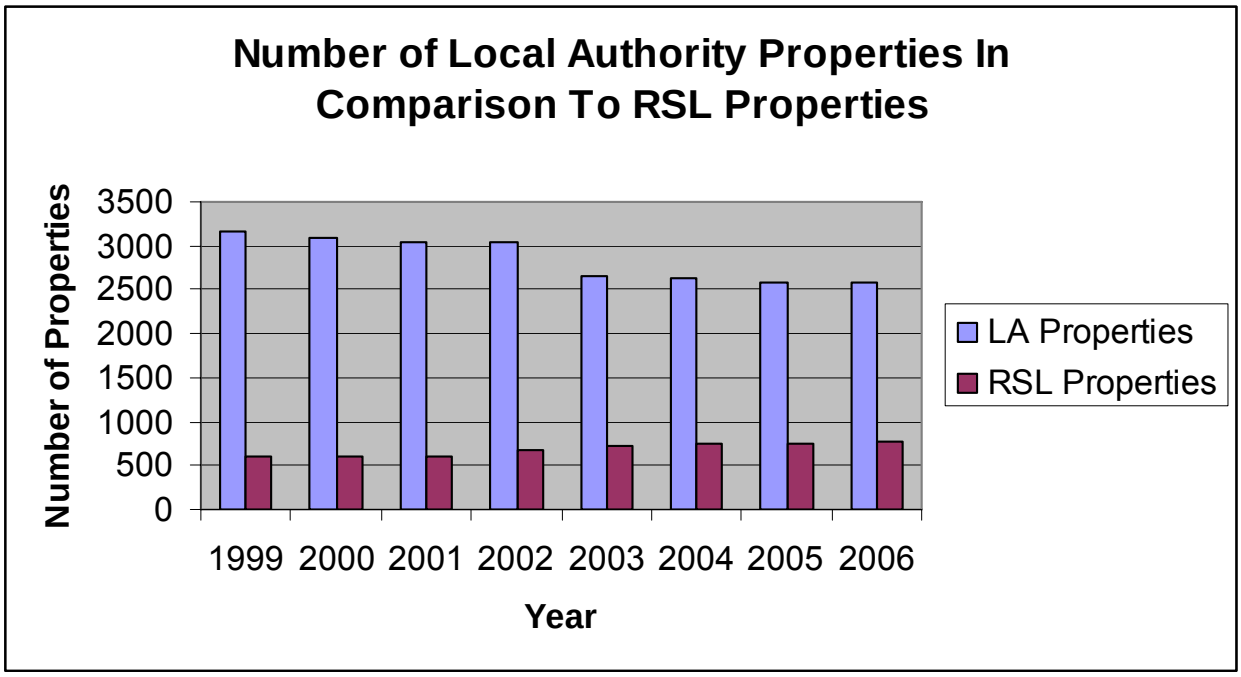
i) Local Authority and Registered Social Landlord Properties

Table 62: Number of Local Authority and Registered Social Landlord (RSL) Properties

Year	LA Properties	RSL Properties
1999	3154	603
2000	3091	603
2001	3050	602
2002	3035	685
2003	2667	733
2004	2626	738
2005	2592	747
2006	2576	763

Brentwood Borough Council 2007

Figure 58:



Brentwood Borough Council 2007

The total Local Authority owned housing stock has been decreasing year-on-year. Many Local Authority dwellings are sold through the Right to Buy programme. 2003 saw the largest single reduction in Local Authority owned properties, with a fall of 368 properties from 3,035 in 2002 to 2,667 in 2003. There has been a further fall since 2003 such that the total amount of Local Authority housing stock stood at 2,576 in 2006.

Since 2001, the number of RSL properties has risen, although not at the same rate that Local Authority owned dwellings have reduced. The number of RSL properties was 763 in 2006, giving a ratio of Local Authority owned to RSL owned properties of approximately 3:1. This is down from 5:1 in 1999. The total number of properties in this study was reported as 3339 in 2006. This is down from 3757 in 1999. The continual reduction in available social housing could lead to problems in housing statutory homeless families and individuals within the area that they live, or they may be placed in housing of an unsuitable size. This is contrary to the intent of PPG3, Policy H2 of the East of England plan and Policy H5 of the Essex and Southend-on-Sea Replacement Structure Plan, which state that Local Authorities should provide everyone with the opportunity of a decent home.

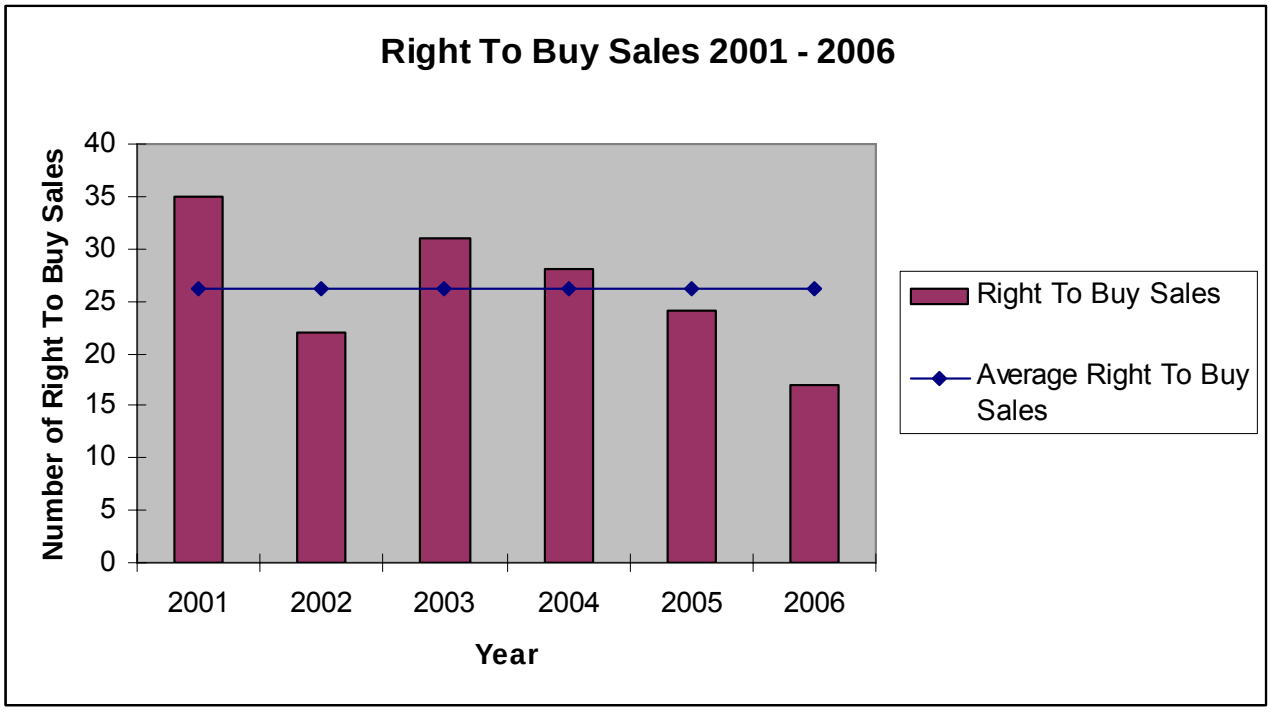
ii) Right to Buy Sales

Table 63: Brentwood Borough Council Right To Buy Sales

Year	Right To Buy Sales	Average Right To Buy Sales
2001	35	26.17
2002	22	26.17
2003	31	26.17
2004	28	26.17
2005	24	26.17
2006	17	26.17

Brentwood Borough Council 2007

Figure 59:



Brentwood Borough Council 2007

In 2001 there were 35 Right to Buy sales in Brentwood Borough. This annual number of sales has not been exceeded in the period to 2006. There has been a decrease in the number of sales each year between 2003 and 2006. This has resulted in the 17 Right to Buy sales recorded in 2006 being just under half those recorded in 2001.

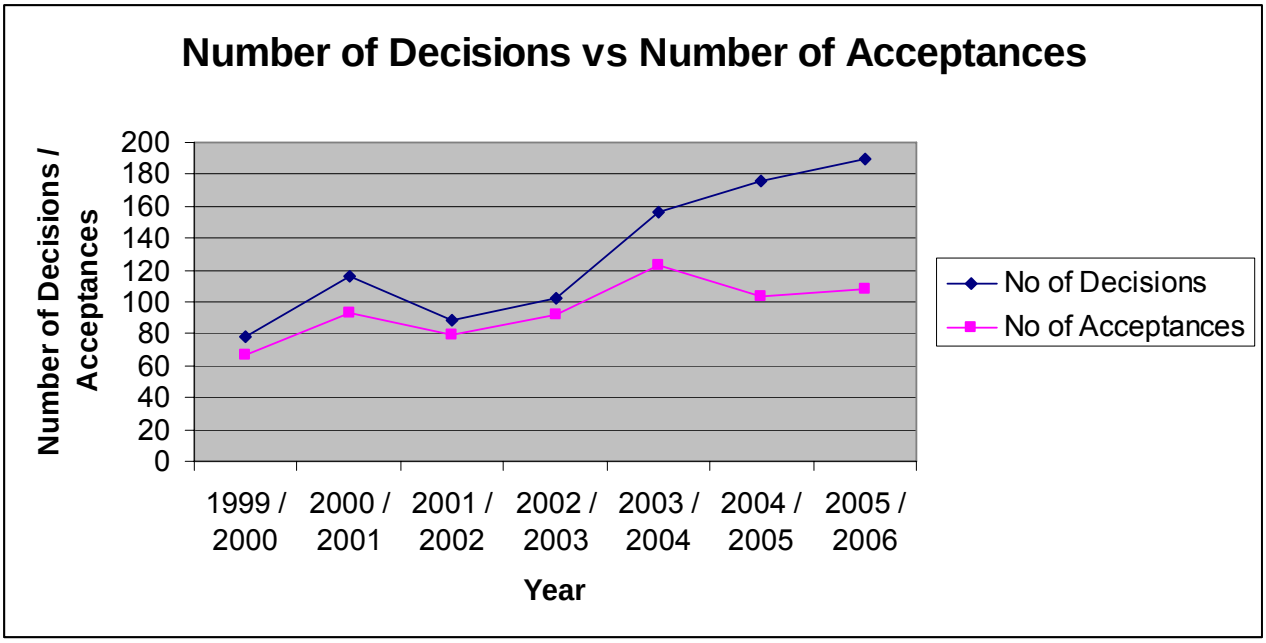
iii) Homelessness Decisions and Acceptances

Table 64: Number of Homelessness Decisions and Acceptances

Year	No of Decisions	No of Acceptances
1999 / 2000	78	67
2000 / 2001	116	93
2001 / 2002	89	79
2002 / 2003	102	92
2003 / 2004	156	123
2004 / 2005	176	103
2005 / 2006	190	108

Brentwood Borough Council 2007

Figure 60:



Brentwood Borough Council 2007

Up until 2002/2003, the number of homelessness decisions and acceptances were relatively similar and followed the same pattern. However, from 2003/2004 a divergence in the two trends is evident, with the number of decisions made continuing to rise through to 2005 / 2006 whilst, despite a small upturn in 2005/2006, the number of acceptances peaked during 2003 / 2004. Current figures stand at 190 decisions and 108 acceptances. Thus, there were twice as many decisions as acceptances in 2005/2006. Since 1999 the number of decisions has increased by about 140% whilst the number of acceptances has increased by just over 60%.

iv) Housing Register

Table 65: Number of Households on the Housing Register, on the Transfer List, and the Number of Allocations

Year	On Housing Register	On Transfer List	No of Allocations
1999 / 2000	523	564	No data
2000 / 2001	457	468	No data
2001 / 2002	No data	No data	No data
2002 / 2003	461	501	226
2003 / 2004	777	542	186
2004 / 2005	1091	558	133
2005 / 2006	1441	531	137

Brentwood Borough Council 2007

The number of cases on the Housing Register remained relatively static between 1999 / 2000 and 2002 / 2003. Since 2002/2003 there has been a significant increase in cases, with the 2005/06 total of 1,441 being more than 3 times greater than that recorded in 2002 / 2003. The number of individual cases on the Housing Register has been increasing by about 300 a year in each year from 2002/2003.

The number of cases on the Transfer List has remained relatively static between 1999/2000 and 2005/2006. The number of cases has averaged 527 during the period, remaining in the range 468 to 564.

The number of allocations made by Brentwood Borough Council has generally fallen from 2002/2003, which is the earliest year for which data is available. The number of allocations made in 2005/2006, at 137, represents only 61% of the allocations made in 2002/2003.

F. Development on Previously Developed Land

The Government requires 60% of all new development to take place on previously developed land (PDL). Table 66 shows that almost all dwelling completions in Brentwood Borough since 2001 have been on PDL, with about 98% of residential completions occurring on PDL during the period. Brentwood Borough has been achieving the Government target of 60% of all residential development to be constructed on PDL and is one of the best performing local authorities in Essex.

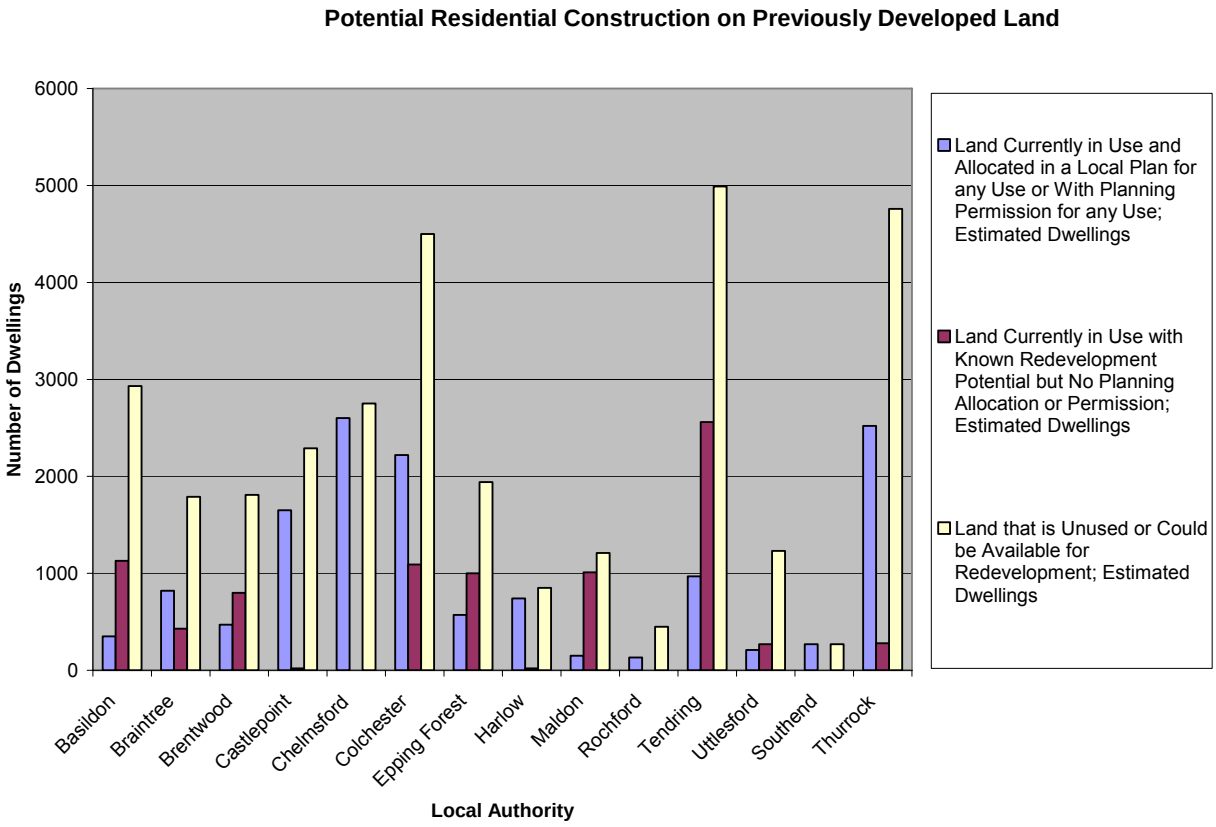
Figure 61 and Figure 62 show that Brentwood Borough has a relatively limited potential for redevelopment of land which is currently in use, derelict or vacant when compared to other local authorities in Essex. However, currently the potential exists for about 3,000 additional dwellings to be accommodated on PDL. This total is broadly in line with the Borough's overall housing provision to 2021.

Table 66: Dwelling Completions on Previously Developed Land

Year	Completions on PDL	Total gross dwelling completions	Percentage built on PDL
2001/2002	196	199	98.5
2002/2003	268	284	94.4
2003/2004	229	231	99.1
2004/2005	175	175	100.00
2005/2006	139	140	99.3
2001-2006	1,007	1,029	97.9

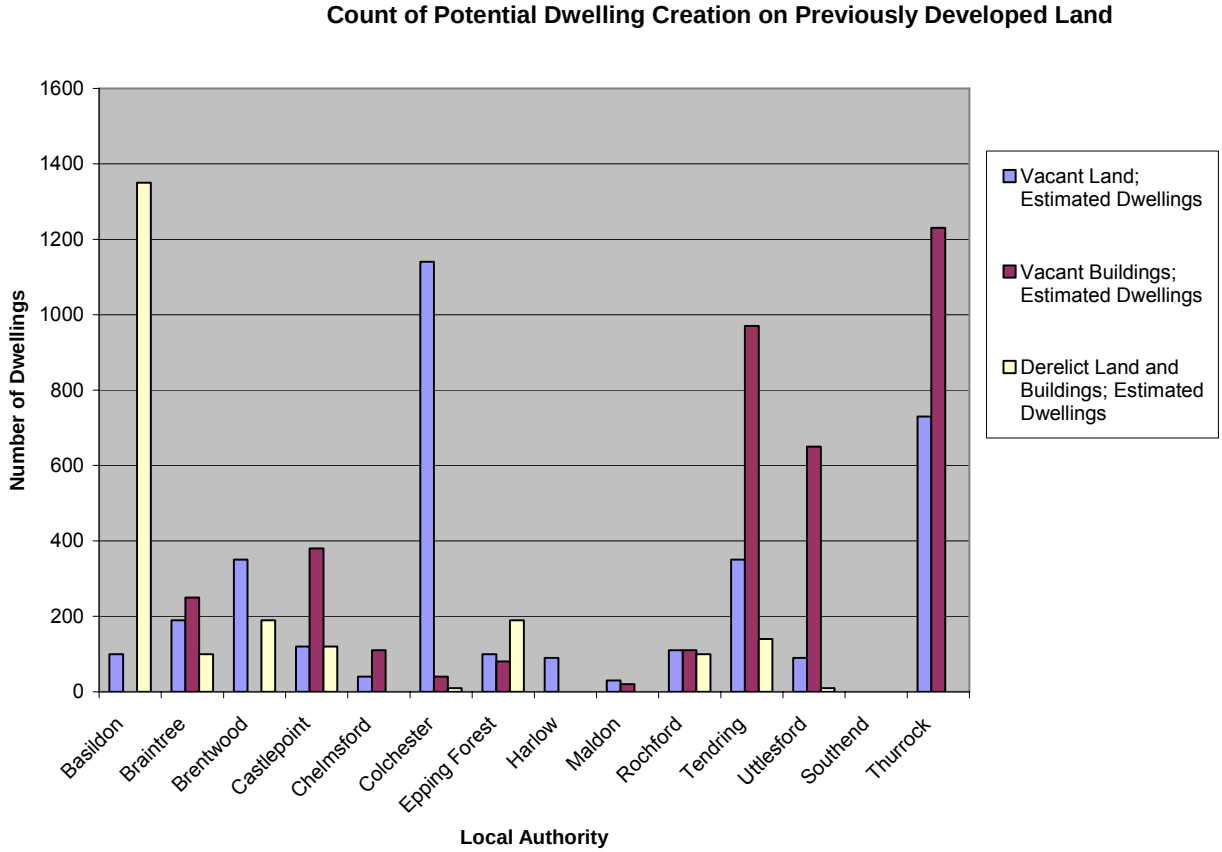
Essex County Council Spatial Planning Group 2006

Figure 61:



National Statistics Online: Land Use Statistics (Previously-Developed Land) Data published March 2004.

Figure 62:



National Statistics Online: Land Use Statistics (Previously-Developed Land). Data published March 2004.

10.4 Summary

- The average price of detached, semi-detached and terrace housing in Brentwood Borough is considerably higher than at Regional and National level, with the average price of a detached dwelling being £150,000 more than Regional and National prices.
- Semi detached housing accounts for the highest percentage of sales in the Borough in line with county and national statistics, but Brentwood Borough has considerably fewer sales in terraced properties.
- At 1.85% of total dwelling stock, the Borough houses proportionately less unfit dwellings than both the East of England and the nation, at 3.2% and 4.3% respectively. No Local Authority housing in Brentwood is deemed unfit for habitation.
- The Borough contains a lower proportion of Local Authority housing and a much smaller proportion of RSL's than the region or nation.
- 21.1% of homes within Brentwood Borough fail the Decent Homes Standard.
- The stock of Local Authority owned dwellings has fallen from 3,154 in 1999 to 2,576 in 2006.
- The number of RSL dwellings has shown a year-on-year increase from 603 in 1999 to 763 in 2006.
- Right to Buy sales have decreased since 2003, and at 2006 were only half the number in 2001.
- Before 2003, the number of homelessness decisions and acceptances showed a similar trend, but since then a marked increase in the number of decisions has not been reflected in acceptances.
- The number of households on the Housing Register has increased more than 3 fold since 2002 / 2003, but with little change to numbers on the Transfer List and a sharp fall in the number of allocations.
- Since 2001 98% of residential completions in Brentwood Borough have occurred on previously developed land.
- The Borough has potential for development of an additional 3,000 dwellings on previously developed land, which is in line with the Borough's overall housing provision to 2021.

11. POPULATION

11.1 Introduction

This section focuses on aspects of the population structure of Brentwood Borough taken from the 2001 Census.

11.2 Policy Context

There is no specific policy context for this topic.

11.3 Current Baseline Information

The population of Brentwood Borough was recorded from Census data as being 68,456 in April 2001. 48.5% of these were male. The sex composition of Brentwood Borough shows a slightly lower proportion of males to that seen at the regional and national level. The Office of National Statistics estimated the Borough's population to be 70,900 at June 2005. During 2002, the Office of National Statistics reported that Brentwood Borough had a population density of 448 people per km^2 which is above the densities for East of England and England at 284 and 380 people per km^2 respectively.

It should be noted that the information in the remainder of this section of the report is all taken from the results of the 2001 Census. The next Census will be held in 2011. Therefore, the data will not be updated in this form as part of the annual monitoring process. Alternative data sources will be used where available.

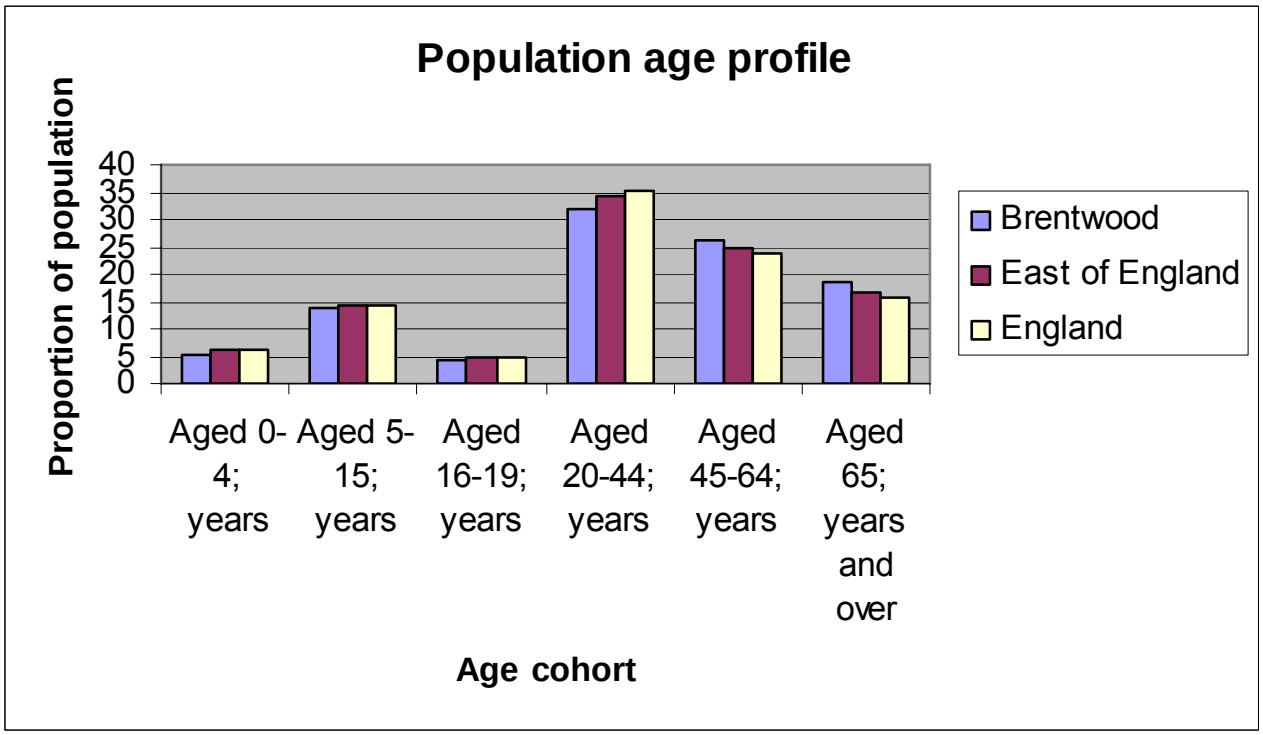
A. Age Profile

Table 67: Age Profile Breakdown

	Brentwood	East of England	England
Aged 0-4; years	5.37%	5.97%	5.96%
Aged 5-15; years	13.72%	14.13%	14.2%
Aged 16-19; years	4.3%	4.66%	4.9%
Aged 20-44; years	32.08%	34.25%	35.31%
Aged 45-64; years	26.11%	24.54%	23.75%
Aged 65; years and over	18.42%	16.45%	15.89%

National Statistics Online: Key Figures for People and Society: Population and Migration. Data published in 2001 Census

Figure 63:



National Statistics Online: Key Figures for People and Society: Population and Migration. Data published in 2001 Census

Brentwood Borough has broadly the same age profile as the regional and national averages, though with a slightly lower proportion in each of the younger age groups (44 years and under) and a slightly higher proportion in the older age groups (45 years and over).

B. Country of Birth

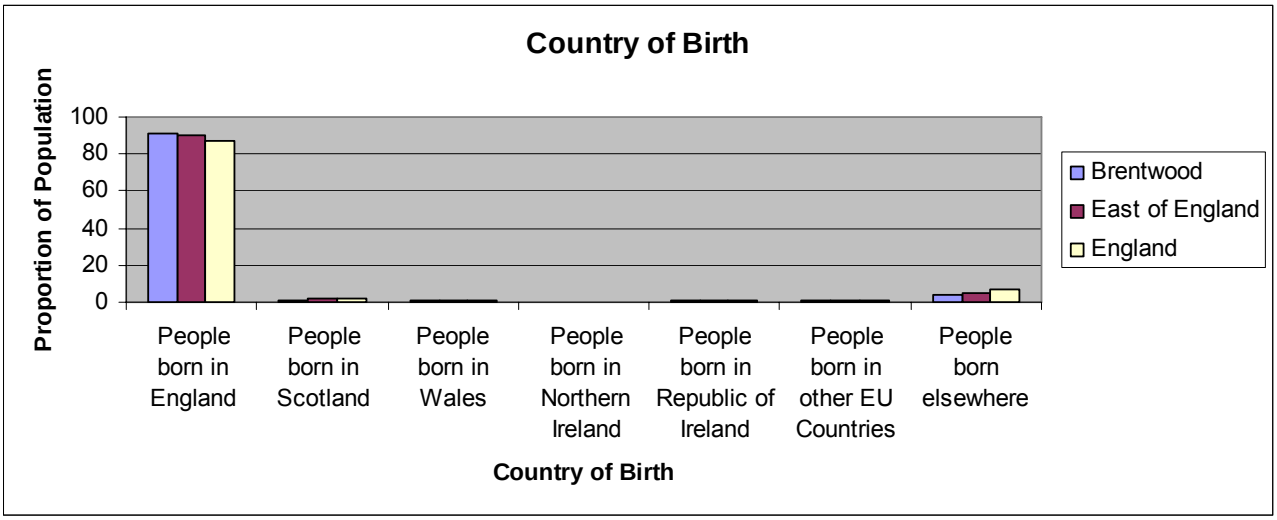
Table 68: Proportionality of Residents' Country of Birth

	Brentwood	East of England	England
People born in England	90.94	89.93	87.44
People born in Scotland	1.26	1.63	1.62
People born in Wales	1.05	1.01	1.24
People born in Northern Ireland	0.37	0.4	0.44
People born in Republic of Ireland	1.01	0.87	0.94
People born in other EU Countries	1.26	1.4	1.41
People born elsewhere	4.12	4.75	6.91

National Statistics Online: Key Figures for People and Society: Population and Migration. Data published in 2001 Census

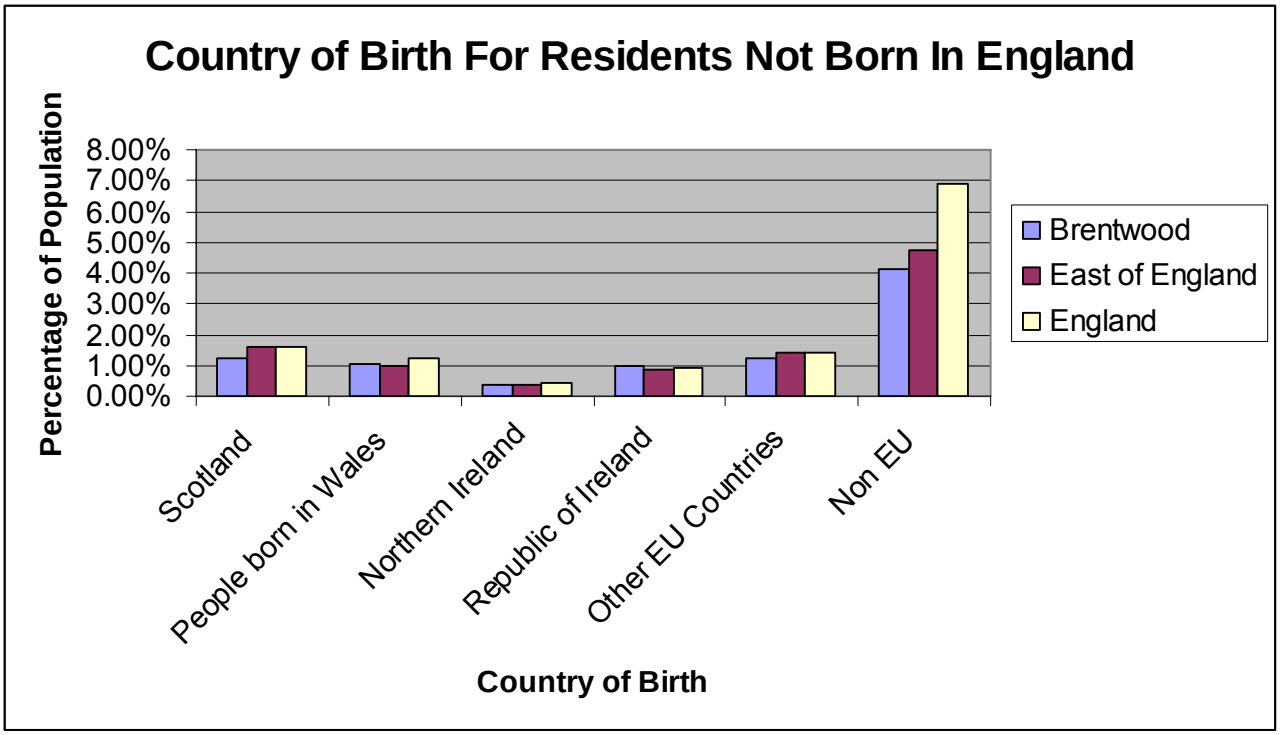
To aid clarity, two graphs are presented to display the information in the above table. Due to the dominance of 'People born in England' across all geographies, all other values are masked. Consequently, a second graph is included showing all values other than those for 'People born in England'.

Figure 64a:



National Statistics Online: Key Figures for People and Society: Population and Migration. Data published in 2001 Census

Figure 64b:



National Statistics Online: Key Figures for People and Society: Population and Migration. Data published in 2001 Census

Brentwood has a higher proportion of residents born in England than at regional or national level. In each of the other categories, Brentwood Borough is under represented, with the exception of people born within the Republic of Ireland.

C. Ethnic Composition

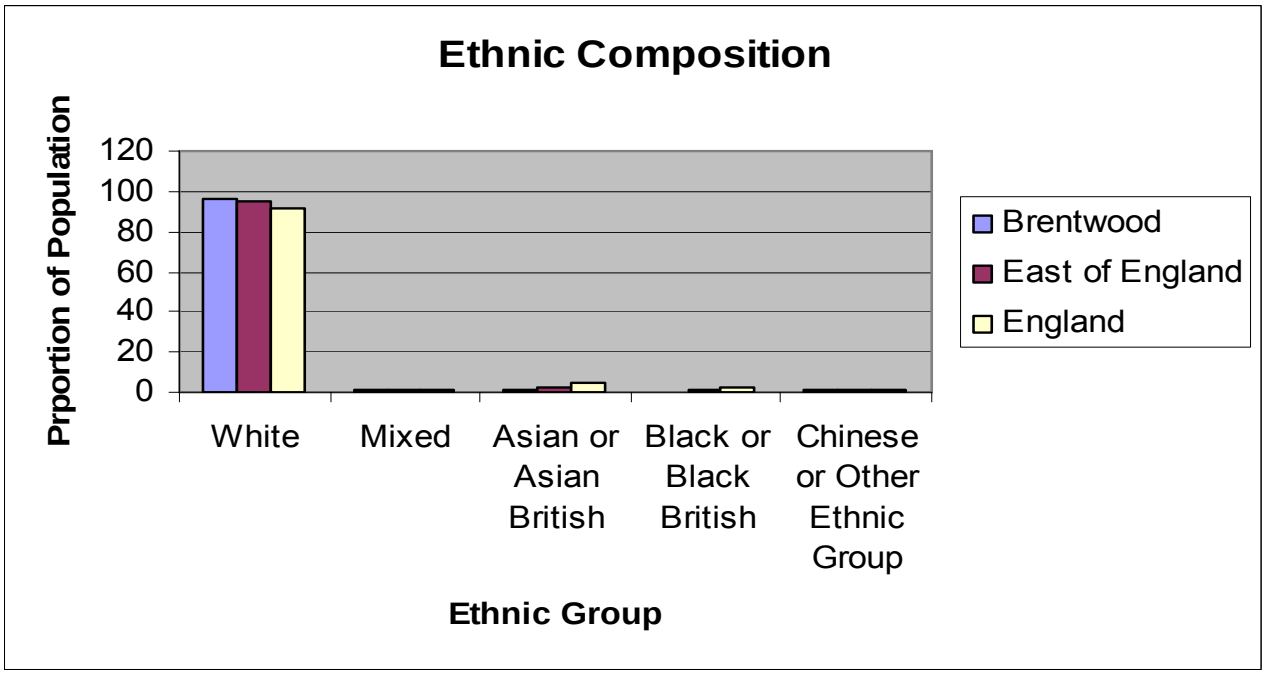
Table 69: Ethnic Composition of Brentwood Borough

Ethnic Group	Brentwood/%	East of England/%	England/%
White	96.43	95.12	90.92
Mixed	0.98	1.08	1.31
Asian or Asian British	1.40	2.26	4.58
Black or Black British	0.54	0.90	2.30
Chinese or Other Ethnic Group	0.65	0.65	0.89

National Statistics Online: Key Figures for People and Society: Population and Migration. Data published in 2001 Census

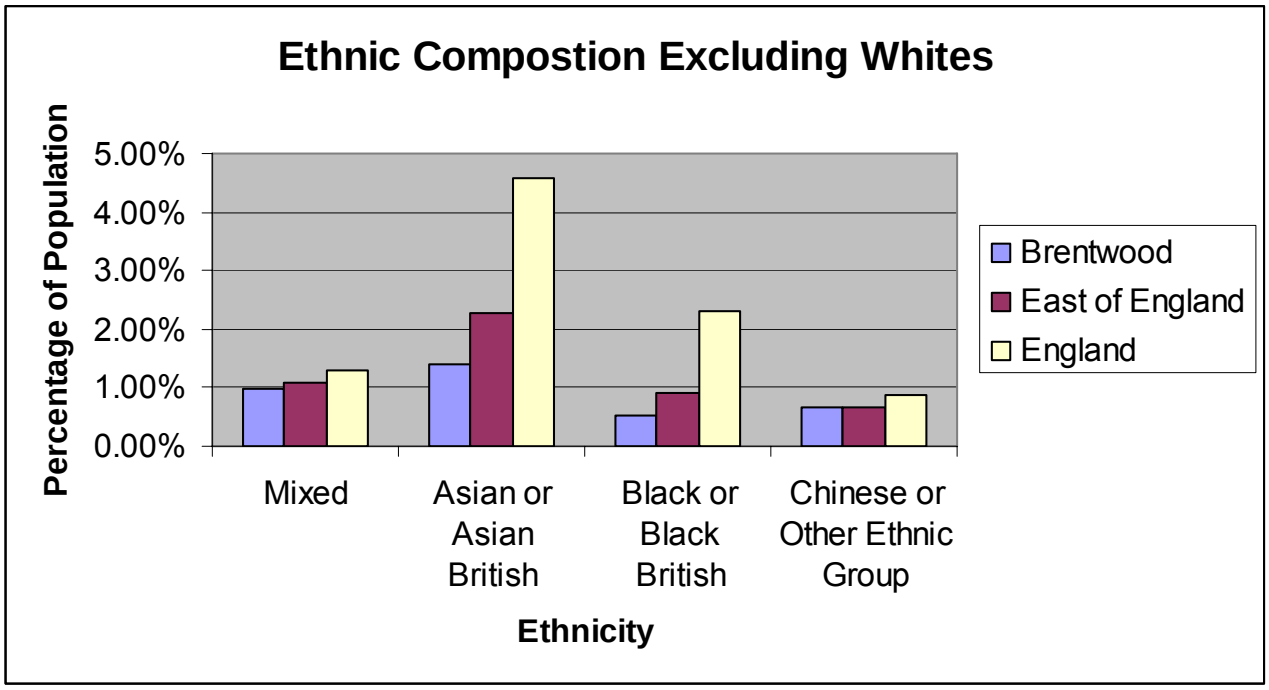
To aid clarity, two graphs are presented to display the information in the above table. Due to the dominance of the 'White' ethnic group across all geographies, all other values are masked. Consequently, a second graph is included showing all values other than those for the 'White' ethnic group...

Figure 65a:



National Statistics Online: Key Figures for People and Society: Population and Migration. Data published in 2001 Census

Figure 65b:



National Statistics Online: Key Figures for People and Society: Population and Migration. Data published in 2001 Census

Brentwood Borough has a higher proportion of people from the White ethnic grouping when compared with the East of England and England. Brentwood Borough has an under representation of all other ethnic groupings, with the most marked, compared with national data, being in the Asian or British Asian and the Black or Black British groupings. Those from this particular ethnic groups make up 1.4% and 0.54% of the Borough's population respectively, compared to 4.58% and 2.3% at the national level.

D. Life Expectancy at Birth

Table 70: Life Expectancy at Birth

	Brentwood		East of England		England	
	June 2002	June 2003	June 2002	June 2003	June 2002	June 2003
Males	79.4	79.5	77.3	77.6	76.2	76.6
Females	81.9	81.9	81.4	81.6	80.72	80.9

National Statistics Online: Key Figures for People and Society: Population and Migration. Data published June 2003

As might have been expected, the life expectancy for a Brentwood Borough resident does not vary greatly to that witnessed at both a regional and national level. In broad terms, residents of Brentwood Borough have a life expectancy above the East of England and England averages for both males and females, with males experiencing the greater increase. Life expectancy can be seen to have risen very slightly in males between June 2002 and June 2003 within the Borough. This matches the slight life expectancy increases witnessed at both the regional and national levels. The potential impacts of longer life expectancy will become marked over a greater time period, in terms of accommodation and service needs.

11.4 Summary

- Brentwood Borough has broadly the same age profile as the regional and national averages, though with a slightly lower proportion in each of the younger age groups (44 years and under) and a slightly higher proportion in the older age groups (45 years and over).
- Brentwood Borough has a higher than average proportion of residents being born within England.
- Brentwood Borough has a higher than average proportion of the White ethnic group.
- Life expectancy within the Borough is higher than that seen regionally and nationally, particularly for males. As is the case regionally and nationally, females have a slightly higher life expectancy than men.

12 EDUCATIONAL ACHIEVEMENT

12.1 Introduction

The quality of education that young people receive can have great ramifications for their future development and employment prospects. Consequently it is important for an area to provide a number of good quality centres of education to ensure that its population is provided with the skills needed to contribute to society. This section examines the educational achievements of 15 year old students at GCSE level or equivalent.

12.2 Policy Context

A. National Context

i) National PSA targets for GCSE attainment

- 60% of pupils to achieve five or more GCSEs or equivalent by 2008
- In every individual school, at least 20% of pupils will achieve five or more A*-C GCSEs or equivalent by 2004, 25% by 2006 and 30% by 2008.

ii) Five Year Strategy for Children and Learners, Department for Education and Skills, July 2004 identifies the issue that too many 14-19 year old pupils become disenchanted with school. It is recognised that vocational learning is seen as second best and that pupils leave school insufficiently prepared for the world of work. The strategy promotes a better link up of childcare and education to support a child throughout their early lives. The strategy also calls for 'dawn-to-dusk' schools, to enable parents to juggle their work commitments with looking after their children. In secondary schools, the intent is to increase freedom and independence, as well as to provide greater flexibility in the curriculum. The strategy sets out 8 key goals:

1. Guaranteed 3-year budgets for every school from 2006, geared to pupil numbers, with every school also guaranteed a minimum per pupil increase each year.
2. Every school to become a specialist school with a mission to build a centre of curriculum excellence.
3. Freedom for all secondary schools to own their land and buildings, manage their assets, employ their staff, improve their governing bodies, and forge partnerships with outside sponsors and educational foundations.
4. More places in popular schools, with no 'surplus places rule' and all successful and popular schools able to propose their expansion.
5. High quality inspection and accountability involving minimal bureaucracy, with intervention following in cases of failure.
6. 200 independently managed academies to be open or in the pipeline by 2010 in areas with inadequate existing secondary schools.
7. Every secondary school to be refurbished or rebuilt to a modern standard over the next 10 to 15 years.
8. 'Foundation partnerships' to enable schools to group together to raise standards and to work together to take on wider responsibilities.

B. Regional/County Context

i) The Essex School Organisation Plan 2006-2011 states that all children and young people living in Essex are entitled to the highest quality education in order that they can achieve the highest possible standards and fulfil their potential. 'Every Learner', Essex Curriculum Policy statement, states:

> *'In Essex, every learner is entitled to an experience of learning which is rich and varied, enjoyable and challenging and inspires all to strive for excellence so that everyone, for the benefit of us all, is able to shape our destinies and create a better future.'*

Planning and organising school places in Essex is a complex task. The County Council, the Dioceses of Chelmsford and Brentwood and their respective voluntary schools, the Learning and Skills Council (LSC) and the governing bodies of schools all have key roles to play in bringing forward proposals for changes to schools. With nearly 600 schools and just over 200,000 pupils to consider, finding workable strategies for planning school places is demanding and challenging for all concerned.

The Plan provides comprehensive information on:

- the current pattern of educational provision across the county;
- forecasts of pupil numbers in future years;
- details of government regulations and guidance and ECC policies concerned with school
- organisation issues;
- the current strategic thinking about school places in Essex.

The Plan also highlights the substantial level of housing development planned for parts of Essex over the next few years, with the corresponding demands for school places and notes that in other areas of the county there is a declining school population.

The Plan outlines how the Local Authority will, in securing the provision of primary, secondary and special education, also promote:

- the raising of standards;
- improved outcomes for all pupils;
- greater diversity in the type of schools in the authority's area;
- increased collaboration between schools;
- greater community cohesion;
- increased choice in school admissions.

The Plan sets out the requirement for places in maintained primary, secondary and special schools until 2011, and identifies the areas where providers will need to match supply with demand. It provides the context for the future organisation of school places in Essex and sets out the principles that need to be given serious consideration when planning school places.

ii) DfES funded Increased Flexibility Programme - mirroring the policy at national level, and in tune with other Learning Skills Councils, the Essex LSC is overseeing a programme to try to ensure that pupils remain inspired in their school. The aim of this programme is to create enhanced vocational and work based learning

schemes. In Essex, an early model has been established around Colbayns High School in Clacton. The school has developed links with Colchester Institute and neighbouring schools to provide courses for 14-19 year olds in vocational studies such as brickwork, motor vehicle studies and hair and beauty.

12.3 Current Baseline Information

'GCSE' should be taken as meaning 'GCSE or equivalent' throughout this section of the report. The first part of this section presents the total number and proportion of 15 year old pupils achieving a certain number of GCSE or equivalent qualifications. It is followed by a breakdown of male and female achievement at this age group under the same categories.

Table 71: GCSE or Equivalent Qualifications Achieved By All Pupils for 2004

	Brentwood	East of England	England
15 Year Old Pupils; Total	823	64124	645386
All 15 Year Old Pupils Achieving 5+ A* - C	66.0	54.4	53.6
All 15 Year Old Pupils Achieving 5+ A* - G	94.4	90.7	88.5
All 15 Year Old Pupils Achieving 5+ A* - G Including English and Mathematics	92.5	89	86.4
All 15 Year Old Pupils With Any Passes	98.9	96.7	96.1
All 15 Year Old Pupils with No Passes	1.9	3.3	3.9

National Statistics Online: GCSE and Equivalent Results for Young People. Data published August 2004

Brentwood Borough's GCSE or equivalent performance is higher than both the regional and national averages. The Borough has a percentage of 66% of all 15 year old pupils achieving 5+ A* to C, a higher result than the regional average of 54.4% and the national average of 53.6%. This is consolidated with 94.4% of all 15 year old pupils achieving 5+ A* to G grades, again a higher mark than either the Regional or National average. Only 1.9% of all 15 year old pupils fail to achieve any passes, compared to 3.3% at a Regional level and 3.9% at a national level. The Government wishes to diversify learning into vocational areas and hope to see the number of pupils attaining 5 GCSE passes A*-C or equivalent rise as pupils are able to tailor their education programme to suit themselves. The Borough's current performance is above the target of 60% of pupils achieving 5 or more GCSE passes at A*-C level by 2008.

Table 72 and Table 73 show that both male and female pupils in Brentwood Borough outperform their counterparts at regional and national level. Nevertheless, in line with the regional and national picture, female pupils outperform male pupils in each category.

Table 72: GCSE or Equivalent Qualifications Achieved By Male Pupils for 2004

	Brentwood	East of England	England
15 Year Old Boy Pupils; Total	424	32,511	328,028
15 Year Old Boy Pupils Achieving 5+ A* - C	58.5	48.9	48.7
15 Year Old Boy Pupils Achieving 5+ A* - G	92.5	88.8	86.2
15 Year Old Boy Pupils Achieving 5+ A* - G Including English and Mathematics	90.3	86.9	83.9
15 Year Old Boy Pupils With Any Passes	97.9	96.3	95.4
15 Year Old Boy Pupils with No Passes	2.1	3.7	4.6

National Statistics Online: GCSE and Equivalent Results for Young People. Data published August 2004

Table 73: GCSE or Equivalent Qualifications Achieved By Female Pupils for 2004

	Brentwood	East of England	England
15 Year Old Girl Pupils; Total	399	31,613	317,358
15 Year Old Girl Pupils Achieving 5+ A* - C	73.9	60	58.6
15 Year Old Girl Pupils Achieving 5+ A* - G	96.5	92.6	90.8
15 Year Old Girl Pupils Achieving 5+ A* - G Including English and Mathematics	94.7	91.1	89
15 Year Old Girl Pupils With Any Passes	98.2	97.2	96.8
15 Year Old Girl Pupils with No Passes	1.8	2.9	3.2

National Statistics Online: GCSE and Equivalent Results for Young People. Data published August 2004

12.4 Summary

- The proportion of pupils in the Borough achieving 5 GCSE A*-C grades is considerably higher than the East of England and England overall.
- The Borough is ahead of both the national and regional proportion of 15 year olds receiving 5 GCSE passes A*-G including Maths and English.
- There is much lower proportion of male and female pupils receiving no passes at GCSE in the Borough than at regional and national level.
- In general, females are outperforming males in the Borough. The pattern is the same at the regional and national level.

13. CRIME

13.1 Introduction

A key objective of planning policies is to promote communities which are inclusive, healthy, safe and crime free, by creating safe and accessible environments where crime and disorder or fear of crime does not undermine quality of life or community cohesion.

13.2 Policy Context

A. National Context

i) National planning policies are published by the Department for Communities and Local Government in Planning Policy Statements (PPS), which are gradually replacing Planning Policy Guidance Notes (PPG). In respect of crime, national guidance is presented in two documents:

- PPG3: Housing (January 2005) seeks to promote designs and layouts which are safe and take account of public health, crime prevention and community safety considerations.
- PPG13: Transport (March 2001) states that people should come before traffic. Places that work well can be used safetly by all in the community for a wide range of purposes, day and night. Local Authorities in partnership with the police should promote designs which are safe in terms of personal security and also take into account crime prevention.

ii) National Community Safety Plan 2006-2009

The National Community Safety Plan 2006-2009 highlights 5 key priorities:

- Making Communities Stronger And More Effective
  - Provide more opportunities for communities to help shape their futures through sustainable community strategies, local development frameworks and parish plans.
  - Increase the level of volunteering and community engagement by 5%.
  - Propose a new power to enable local people to secure a response from the police.
- Further Reducing Crime And Anti-Social Behaviour
  - Reduce crime by 15%, and further in high crime areas by 2007/08. This will be done by focussing on individual crimes and through targetting the offending behaviour of individuals who cause the most crime and harm.
  - Establish neighbourhood policing teams in every community by 2008.
  - Combat alcohol related violence and disorder through the implimention of Alcohol Disorder Zones, Drinking Banning Orders, conditional cautions and enforcement of licensing requirements.
- Creating Safer Environments
  - Improve public space and quality of people's homes and communities through the *Cleaner, Safer, Greener Communities* initiative.
  - Ensure that policies are in place to make places safer by designing out crime in all new residential, industrial, retail and commercial development as well as in parks, open spaces and car parks.

    - Promote the take-up of enforcement powers to gate off alleyways affected by crime and anti-social behaviour
- Protect The Public And Building Confidence
    - Bring 1.25 million offences to justice by 2007/08
    - Implement new measures to improve protective security for crowded places, soft targets and the transport system.
- Improving Peoples Lives So They Are Less Likely To Commit Offences or Re-offend
    - Provide safe, healthy, stimulating and enriching environments for children and families at the heart of their communities.
    - Halve the number of people living in insecure temporary accommodation by 2010.

B. Regional/County Context

i) East of England Plan December 2004

The Draft East of England Plan, prepared by the East of England Regional Assembly (EERA), was submitted to Government in December 2004. Following a period of public consultation the Plan was subject of an Examination in Public (EiP) between November 2005 and March 2006. The Report of the EiP Panel was published in June 2006. In December 2006 the Secretary of State published Proposed Changes to the Draft Plan for a period of public consultation to March 2007. The final Plan is expected to be published by Government by summer 2007. A relevant policy in the Draft Plan, as submitted in December 2004, is Policy SS16: Quality in the Built Environment, which states that local development documents will deliver new development of high quality in urban and rural areas to ensure that new built development addresses crime prevention, community safety and public health.

C. Brentwood Position

i) Brentwood Borough Replacement Local Plan 2005

The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). A relevant policy within the Local Plan is Policy C25: Secured by Design, which states that all new development will be expected to assist in achieving greater community safety through the creation of a more safe and secure environment.

ii) Brentwood Borough Community Safety Strategy 2005 – 2008

The strategy responds to central government's targets and priorities, and also reviews the previous 2002-05 Strategy, examines the results of surveys, outlines the policing plan and details the work of the six Action Plan Sub Groups:

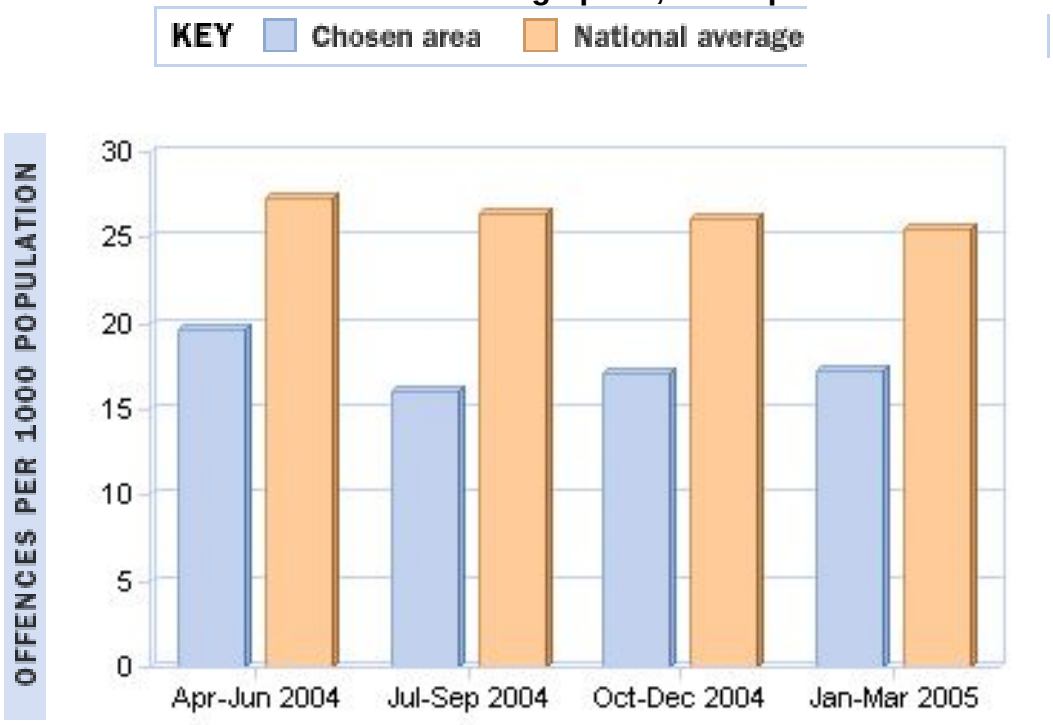
- Anti- Social Behaviour;
- Prolific and other Priority Offenders;
- Domestic Violence;
- Drug & Alcohol Related Crime;
- Core Crime (burglary and vehicle crime); and,
- Community Reassurance.

13.3 Current Baseline Information

This section details the total number of offences recorded in Brentwood Borough per 1,000 population. It also provides a statistical breakdown for all 12 Essex Boroughs / Districts within 6 key offence areas for the financial year 2004/05, together with a data table which amalgamates all the data received. Finally, there is a brief analysis of the trend in offending patterns within 5 of these areas.

A. All Offences

Figure 66: All Offences in Brentwood Borough per 1,000 Population



Crime Statistics Online.

Figure 66, above, shows that the number of recorded crimes per 1,000 population in the Borough is appreciatively lower than the National Average. The number of crimes registered in Brentwood Borough fell between April and September 2004, although they subsequently rose slightly between July and December 2004.

B. Key Offences

Table 74, overleaf, presents crime statistics per 1,000 people across the 6 areas of crime that have been identified as being key areas. All the data for the 6 key crime areas has been taken from the 2004/05 financial year which represents the most recent data available. In order to allow fuller comparison, each of these 6 key areas is examined in turn for all the Boroughs/Districts within Essex. Each Borough/District is also compared to the English Average to give an insight into the County's Performance as a whole.

Table 74: Number and Type of Offences per Borough / District per 1,000 People

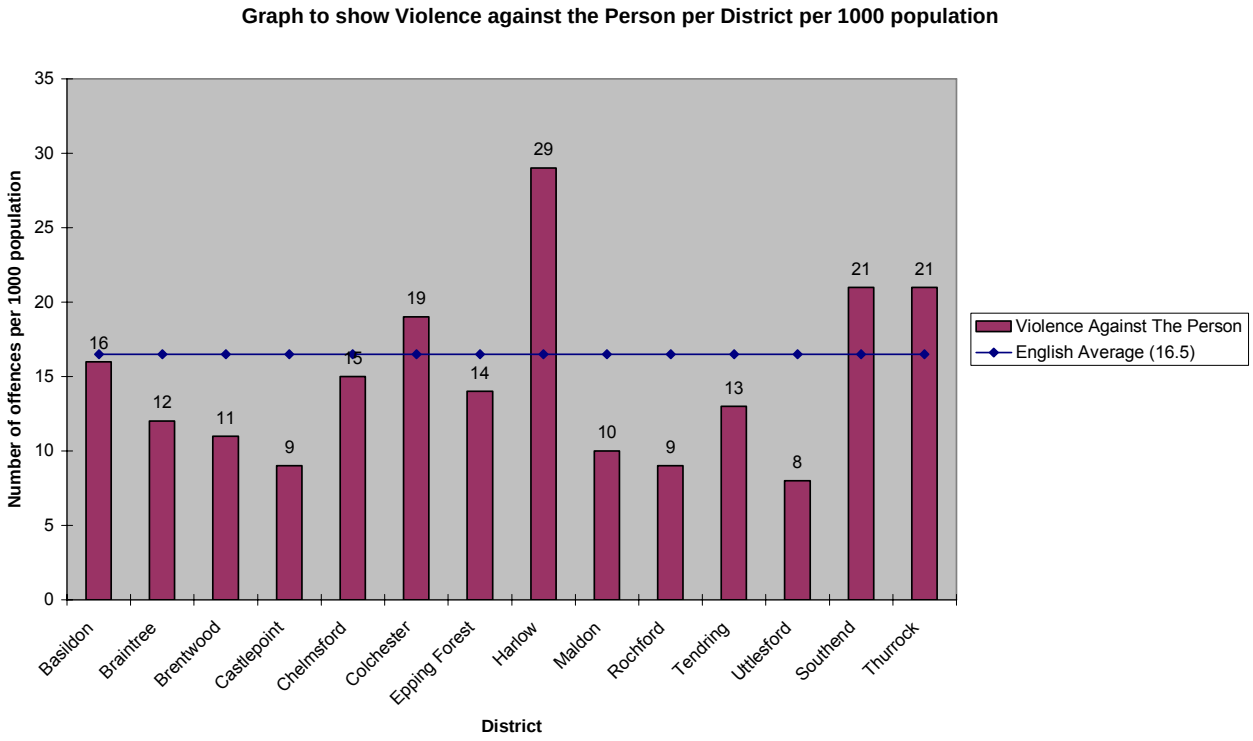
	Council														
Offence Committed	**Basildon**	**Braintree**	**Brentwood**	**Castlepoint**	**Chelmsford**	**Colchester**	**Epping Forest**	**Harlow**	**Maldon**	**Rochford**	**Tendring**	**Uttlesford**	**Southend**	**Thurrock**	**English Average**
Violence Against The Person	16	12	11	9	15	19	14	29	10	9	13	8	21	21	16.5
Robbery Offences	1	0	1	1	1	1	1	2	0	0	0	0	2	1	1.4
Theft Of A Motor Vehicle Offences	6	2	4	3	2	2	5	5	2	2	3	1	4	10	4.5
Sexual Offences	1	1	1	0	1	1	1	2	0	0	1	1	1	1	0.9
Burglary Dwelling Offences	5	2	4	2	3	3	5	4	2	3	3	2	6	3	6.4
Theft From A Vehicle Offences	11	4	10	5	6	5	9	10	4	4	6	4	9	15	10
Households	70,000	57,000	29,000	36,000	67,000	66,000	51,000	32,000	25,000	33,000	63,000	28,000	71,000	60,000	-
Population	166,370	134,900	69,510	87,040	158,530	158,940	121,180	77,820	60,030	78,860	140,880	70,040	160,280	145,270	-

Financial year 04/05 per 1000 ppl

Up My Street Data for the Financial Year 2004/05.

C. Violence against the Person Offences

Figure 67:

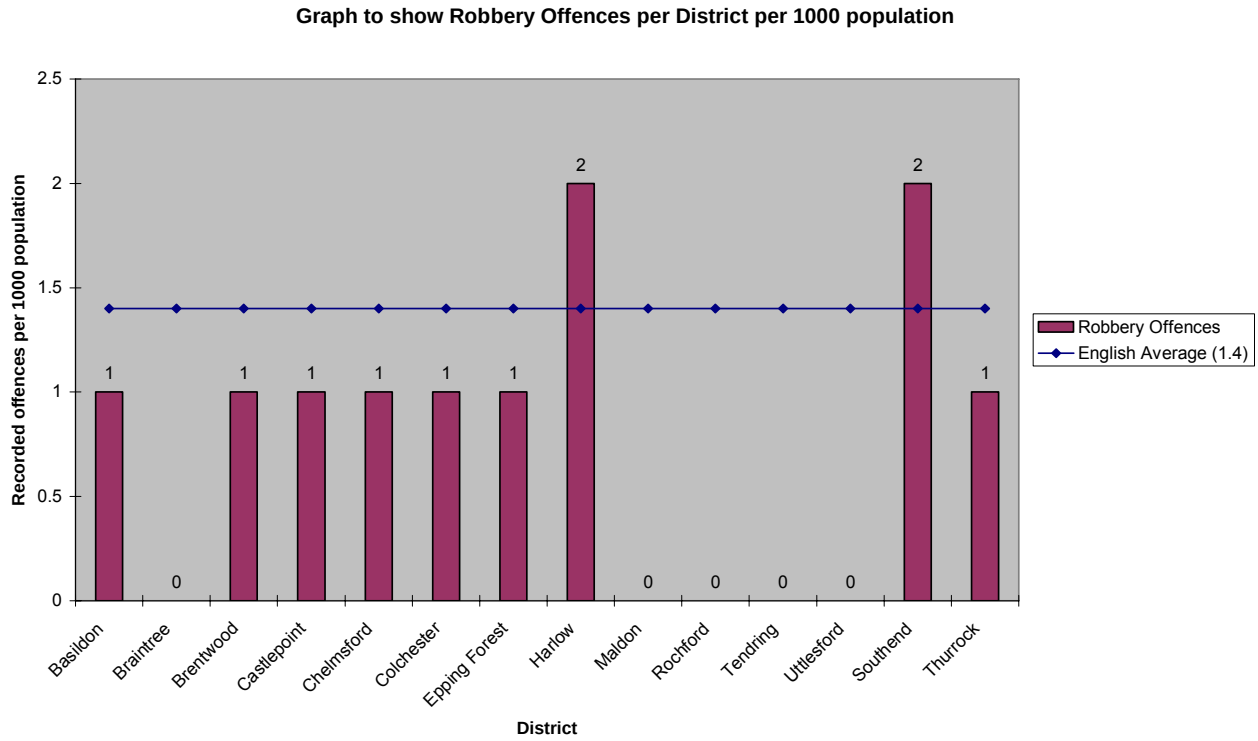


Up My Street Data for the Financial Year 2004/05.

'Violence against the person' covers all those offences ranging from murder to less serious misdemeanours against an individual. Brentwood is ranked 10th out of the 14 District and Unitary authorities in Essex, with a recorded 'violence against person' rate of 11 offences per 1,000 population. This is well below the English Average of 16.5 offences per 1,000 population. Elsewhere in Essex the urban areas of Harlow, Southend and Thurrock record rates for this offence above the national average.

D. Robbery Offences

Figure 68:

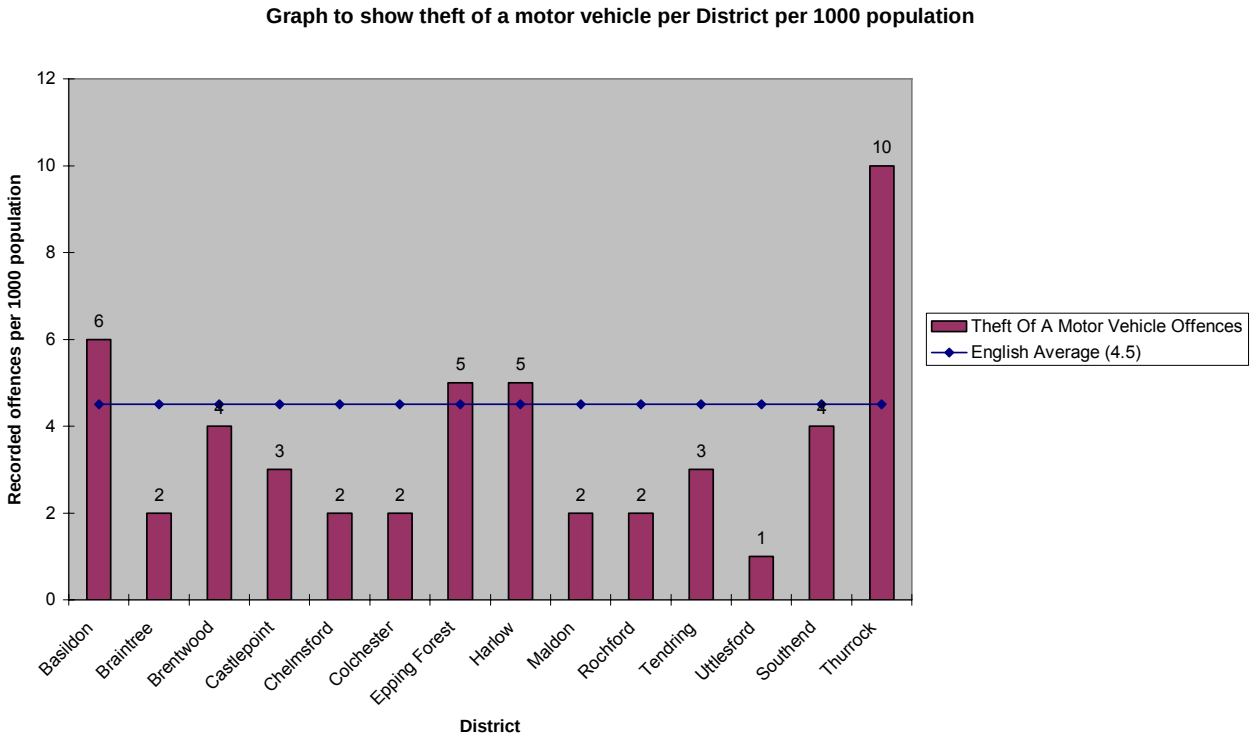


Up My Street Data for the Financial Year 2004/05.

Analysis of Robbery offences is problematic, due to the comparatively low occurrence of this crime. The English average is 1.4 offences per 1,000 population. Brentwood, with 1 offence per 1,000 population is below the national average. Elsewhere in Essex only Harlow and Southend exceed the English average with 2 offences per 1,000 population.

E. Theft of a Motor Vehicle

Figure 69:

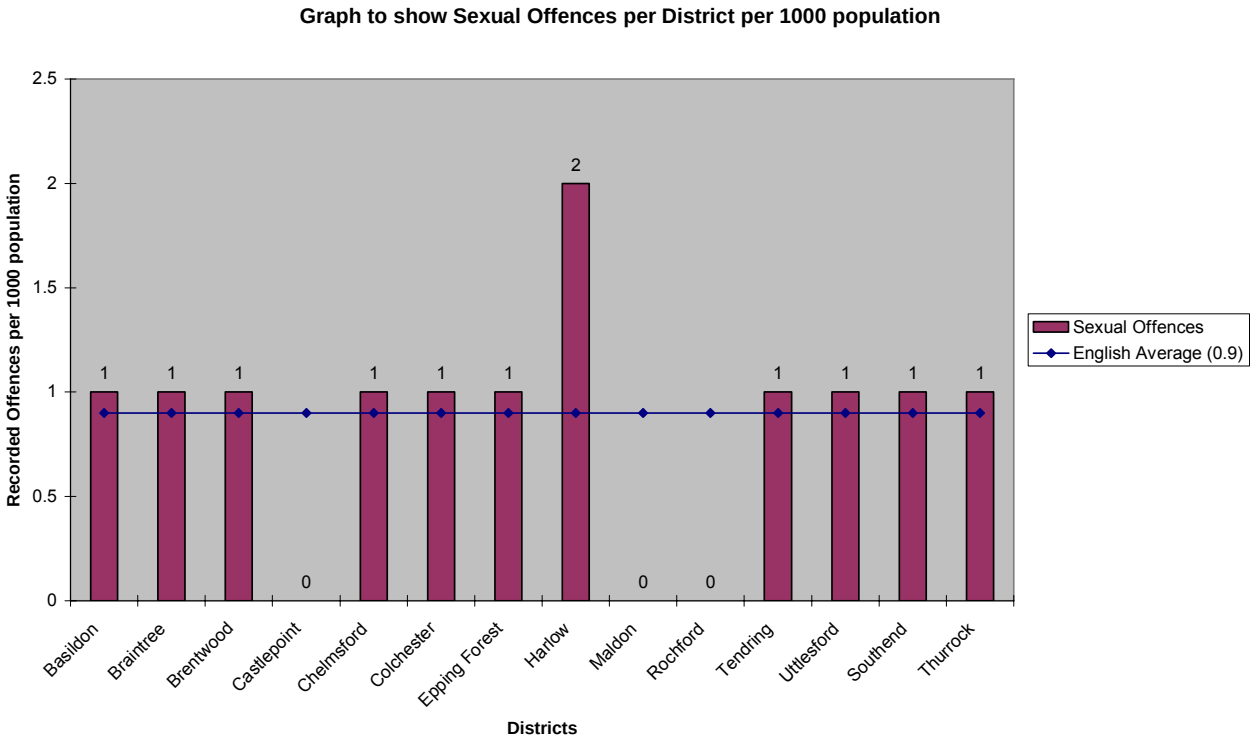


Up My Street Data for the Financial Year 2004/05.

In terms of theft of a motor vehicle, Brentwood records 4 offences per 1,000 population. This is below the English average of 4.5 offences per 1,000 population. Elsewhere in Essex, Thurrock records more than double the national rate of offences. Basildon, Epping Forest and Harlow also record above the national rate, with Southend recording the same rate as Brentwood.

F. Sexual Offences

Figure 70:

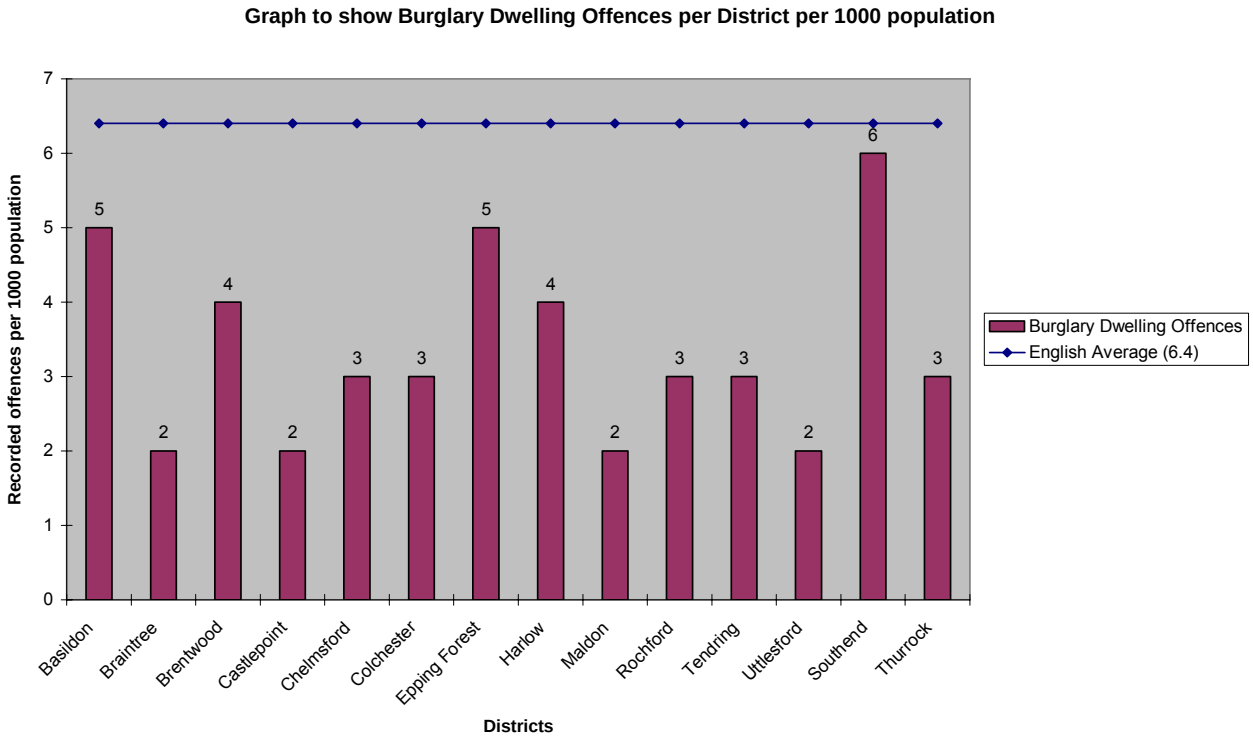


Up My Street Data for the Financial Year 2004/05.

The English average for occurrence of sexual offences is 0.9 per 1,000 population. The low value makes meaningful analysis difficult. 10 of the 14 district and unitary authorities in Essex, including Brentwood, record 1 offence per 1,000 population. This is just above the national average. Elsewhere in Essex only Harlow records a higher value.

G. Burglary of Dwelling Offences

Figure 71:

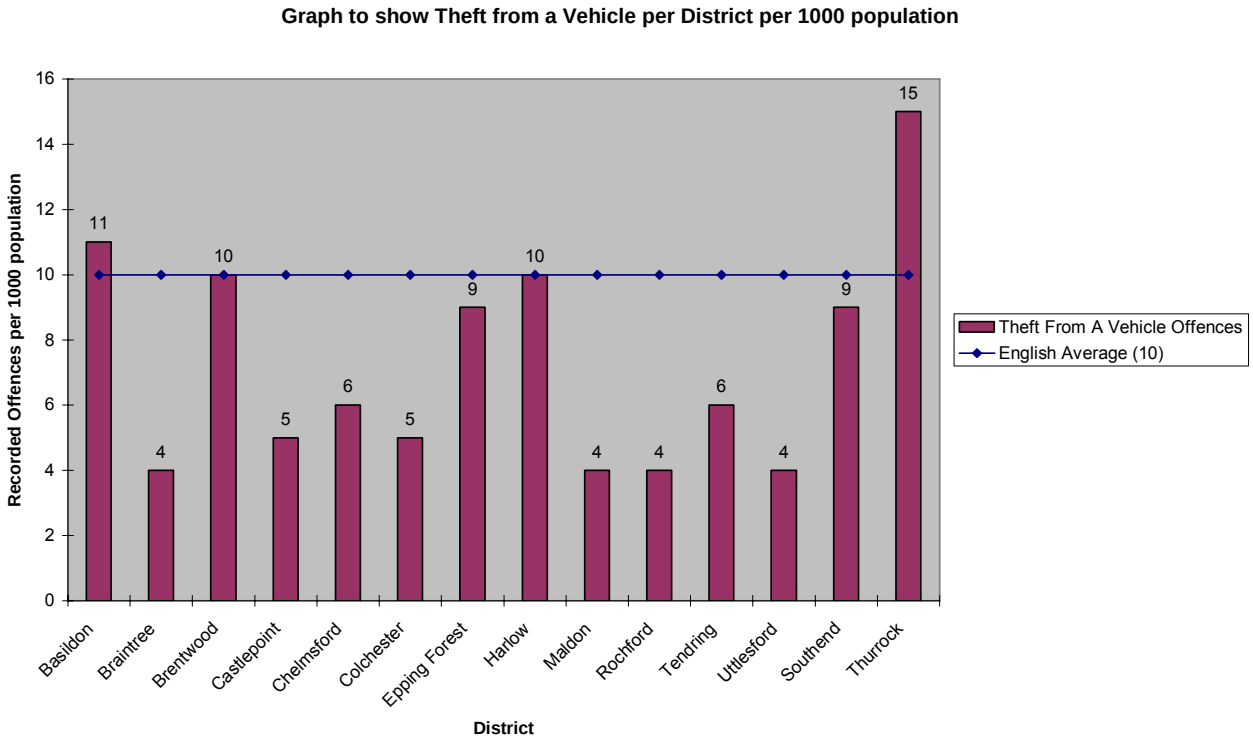


Up My Street Data for the Financial Year 2004/05.

Burglary of dwelling offences average 6.4 per 1,000 population in England. Occurrence in all 14 district and unitary authorities in Essex is below the national average. Southend has the highest occurrence at 6 offences per 1,000 population. Brentwood recorded 4 offences per 1,000 population which, although below the English average, is the 4th highest occurrence recorded in Essex.

H. Theft from a Vehicle Offences

Figure 72:



Up My Street Data for Financial Year 2004/05.

The English average occurrence for theft from a motor vehicle is 10 per 1,000 population. Brentwood records the same rate of occurrence. Within Essex only Thurrock and Basildon record higher occurrences, with Harlow recording the same rate as Brentwood. Most other authorities in Essex record significantly lower rates of occurrence in this category.

I. Trends in 5 Key Crime Areas

Data published by National Online Statistics enable a comparison to be made between the numbers of offences within Brentwood Borough across 5 key crime areas over the period April 2003 to March 2005. Data are contained in Table 75.

The change in the pattern of crime within Brentwood Borough between 2003 and 2005 does not mirror that seen at regional or national level. The most divergent statistic is that for robbery, with an increase of 15.79% in Brentwood, whereas there was a decrease in this type of offence both regionally and nationally. Similarly, theft from a motor vehicle also saw a small rise in offences in Brentwood which is contrary to the significant decreases witnessed at both regional and national level. Although there was no change in offences of burglary in a dwelling during the period in Brentwood Borough, there was a considerable decrease at the regional and national level. Similarly, offences of theft of a motor vehicle showed a slight decline in Brentwood between 2003 and 2005 but this was much smaller than the significant decline in these offences regionally and nationally. By contrast, offences of violence against a person decreased in the Borough over the period whilst increases in this offence were recorded at regional and national level.

Table 75: Change in Number of Offences within Brentwood Borough by Offence Type between April 2003 and March 2005

	Brentwood Borough			East Of England			England		
Crime Area	April 2003 - March 2004	April 2004 - March 2005	Percentage Change	April 2003 - March 2004	April 2004 - March 2005	Percentage Change	April 2003 - March 2004	April 2004 - March 2005	Percentage Change
Violence Against The Person	861	774	-10.10%	81,951	88,969	8.56%	902,738	981,211	8.69%
Robbery	38	44	15.79%	4976	4547	-8.62%	99915	87619	-12.31%
Burglary In A Dwelling	310	310	0.00%	27329	22043	-19.34%	338431	309761	-8.47%
Theft Of A Motorvehicle	254	251	-1.18%	21379	18045	-15.59%	274524	228819	-16.65%
Theft From A Vehicle	640	662	3.44%	50921	43153	-15.26%	568704	470454	-17.28%

National Statistics Online: Notifiable Offences Recorded By the Police. Data published March 2005

13.4 Summary

- The number of recorded crimes per 1,000 population in the Borough is appreciatively lower than the National Average. The number of crimes registered in Brentwood Borough fell between April to September 2004. It has since risen slightly between July and December 2004.
- Brentwood Borough's criminal incidences are below that of the national average in all the types of crime covered with the exception of Theft from Motor Vehicle Offences, where the number of recorded offences per 1000 population is the same as the national average, and for sexual offences, although analysis of this offence is difficult due to the low number of incidents reported.
- Brentwood Borough's increase of 15.79% in offences of robbery runs counter to trends elsewhere, this offence decreasing by 8.62% in the region and by 12.31% in England.
- The rise in the number of incidences of Thefts from Motor Vehicles (3.44%) also goes against the regional (15.26%) and national (17.28% averages which show marked improvements.

14. ROAD ACCIDENT DATA

14.1 Introduction

The Government places great emphasis on people being able to travel safely whatever their chosen mode. When thinking about new development, and in adapting existing development, the needs and safety of all in the community should be considered from the outset, and addressed in the Transport Assessment accompanying development proposals, taking account of the importance of good design.

14.2 Policy Context

A. National Context

i) National planning policies are published by the Department for Communities and Local Government in Planning Policy Statements (PPS), which are gradually replacing Planning Policy Guidance Notes (PPG). In respect of this topic, PPG13: Transport (March 2001) states that people should come before traffic. Places that work well can be used safely by all in the community for a wide range of purposes, day and night. Local Authorities in partnership with the police should promote designs which are safe in terms of road safety. The planning system has considerable influence on the safety of pedestrians, cyclists and vehicle users through the design and layout of footpaths, cycleways and roads. Planning is also able to influence road safety through its control of new development.

ii) National Community Safety Plan 2006-2009 states that by 2010, the number of deaths and injuries on the roads of Britain should have reduced by 40% when compared to the average for 1994-1998. In the case of children, this number should be reduced by 50%. The significantly higher occurences of road accidents in disadvantaged communities is also expected to be tackled. There is also a wish to see a 10% reduction in those casualties deemed slightly injured.

B. Regional/County Context

i) East of England Plan December 2004

The Draft East of England Plan, prepared by the East of England Regional Assembly (EERA), was submitted to Government in December 2004. Following a period of public consultation the Plan was subject of an Examination in Public (EiP) between November 2005 and March 2006. The Report of the EiP Panel was published in June 2006. In December 2006 the Secretary of State published Proposed Changes to the Draft Plan for a period of public consultation to March 2007. The final Plan is expected to be published by Government by summer 2007.

A relevant policy in the Draft Plan, as submitted in December 2004 is Policy T11: Environment and Safety. This policy states that the development and design of transport infrastructure and policy will seek to protect and enhance the natural, built and historic environment, minimise environmental impact and improve safety and security by reducing sources of danger. Safety improvements should be sought through eliminating or reducing sources of danger rather than by restricting the movement of pedestrians and cyclists.

ii) Essex Local Transport Plan 2006 - 2011

The Essex Killed or Seriously Injured (KSI) Partnership includes the police, fire and ambulance services, the Highways Agency; and Southend-on-Sea and Thurrock Councils. Key KSI accident groups are motorcyclists, young drivers and children. Results from Essex County Council's stakeholder consultations showed that 71% of respondents felt that drink driving was the biggest safety problem concerning road use. Child safety is highlighted as a major issue. Work has been undertaken to ascertain the areas where accidents involving children are most prevalent. It is envisaged that these areas may be suitable for 20mph zones and home zones.

The Council is funding a surface treatment programme which is successfully providing significant accident reductions. A minimum First Year Rate of Return of 250% is expected for the surface treatment programme. As part of Accident Reduction 2010 site treatments, there will be a minimum of 100% First Year Rate of Return at mass accident sites

The County Council and the Essex Safety Camera Partnership has in partnership invested in software to analyse road accident patterns. As a result the County Council is now at the leading edge of accident data systems. It is through camera enforcement, safety engineering and speed management schemes that the Council wish to combat the road accident problem.

C. Brentwood Context

i) Brentwood Borough Replacement Local Plan August 2005

The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). Relevant policies within the Local Plan are:

- Policy T17: Pedestrian Facilities states that walking will be promoted as an alternative form of transport to the car, particularly for shorter trips through improved conditions for pedestrians by increasing pedestrian priority, widening footpaths and implementing traffic calming measures.
- Policy T16: Cycling promotes cycling as an alternative means of transport to the car, in conjunction with the Brentwood Cycling Strategy, through the provision of new cycle routes as part of highway infrastructure improvements and traffic management measures.

14.3 Current Baseline Information

Table 76 shows road accident data for Brentwood Borough. Population data from the 2001 Census has been used to calculate the proportion of residents experiencing a road accident.

Table 76: Road Accident Data for Brentwood Borough against Local and National Averages

Dec-03						
	Brentwood	Brentwood Percentage	East of England	East of England Percentage	England	England Percentage
Total Population (Taken from Census 2001)	68,456		5,388,140		49,138,831	
All Casualties	67	0.10%	3,994	0.07%	32296	0.07%
All Car Occupants Killed or Seriously Injured	41	61.19%	2,055	51.45%	14,631	45.30%
All those using Two Wheeled Motor Vehicles Killed or Seriously Injured	10	14.93%	882	22.08%	6,948	21.51%
All Pedal Cyclists Killed or Seriously Injured	3		232	5.81%	2,202	6.82%
All Pedestrians Killed or Seriously Injured	7	10.45%	575	14.40%	6,884	21.32%
All Child Casualties	4	5.97%	370	9.26%	3,476	10.76%
All Child Pedestrian Casualties	…	…	170	4.26%	2,026	6.27%
All Elderly Casualties	4	5.97%	164	4.11%	1,751	5.42%
All Elderly Pedestrian Casualties	0	0.00%	31	0.78%	739	2.29%

National Statistics Online: Road Accident Data. Data published December 2003.

Brentwood Borough had a higher instance of all casualties relating to road accidents in 2003 than regional or national averages. The proportion of casualties who were car occupants, killed or seriously injured, is noticeably higher at 61.19% for Brentwood than for either the regional or national data. However, the proportion of casualties who were pedestrians (10.45%) is less than half the national rate. Also much lower than the regional or national averages were all child casualties, although the number of elderly casualties is slightly higher.

The main issue for the Borough with respect to road accidents appears to be those injured whilst travelling by car. It would therefore be prudent to carry out a spatial analysis of the incidence of accidents to try to identify any accident hotspots. It may then be possible to mitigate the number of casualties in these identified areas through the implementation of traffic calming measures and other road safety techniques.

14.4 Summary

- Brentwood Borough has a slightly higher percentage of all casualties than the East of England average and National average.
- The Borough has a significantly higher than average percentage of all car occupants killed or seriously injured.
- The proportion of casualties who were pedestrians in the Borough is half that of the national average.
- A spatial analysis of road accidents should be undertaken to identify any road traffic accident hotspots and potential remediation measures.

15. INDICES OF MULTIPLE DEPRIVATION

15.1 Introduction

This section of the report examines the Index of Multiple Deprivation 2004 (revised). The 2004 revision of the Index updates the 2001 version of the Index. Data and maps are presented which consider the distribution and scale of deprivation in Brentwood Borough and Essex.

15.2 Policy Context

There is no specific policy context for the Index of Multiple Deprivation (IMD). The Index uses a variety of statistical data to provide a consistent national assessment of the absolute and relative prevalence of deprivation at a range of geographical scales. The Index is generally used to inform policy development and funding initiatives over a wide range of topic areas.

15.3 Current Baseline Information

Table 77 shows the national ranking of Essex districts for four measures from the IMD. The number alongside each District name is the district's national rank for that measure. A lower rank means a greater incidence of deprivation within the authority.

Table 77: Essex Boroughs / Districts Ranking On IMD2004 Measures

Rank Essex	Average Score	Average Rank	Extent	Local Concentration
1	Tendring 103	Tendring 98	Basildon 106	Tendring 111
2	Harlow 120	Harlow 101	Tendring 127	Basildon 116
3	Basildon 132	Basildon 142	Harlow 180	Colchester 189
4	Colchester 217	Colchester 221	Colchester 193	Harlow 207
5	Epping Forest 234	Braintree 228	Braintree 263	Epping Forest 243
6	Braintree 237	Epping Forest 232	Epping Forest 246	Braintree 247
7	Castle Point 245	Castle Point 243	Castle Point 273	Castle Point 258
8	Maldon 280	Maldon 280	Rochford 271	Chelmsford 286
9	Brentwood 312	Brentwood 312	Maldon 298	Rochford 299
10	Rochford 316	Rochford 319	Brentwood 295	Maldon 301
11	Chelmsford 320	Chelmsford 321	Chelmsford 274	Brentwood 307
12	Uttlesford 341	Uttlesford 342	Uttlesford 298	Uttlesford 352

Indices of Deprivation 2004 (revised) Essex Results. October 2004.

Tendring, Harlow and Basildon are the most deprived Boroughs / Districts in the County in terms of averaged deprivation across the whole of the Boroughs / Districts. On the national scale, Tendring is in the top 30% most deprived Districts. Uttlesford is the least deprived District in the County, and among the 4% least deprived nationally. Brentwood scores fairly low in terms of overall deprivation, being classed within the 12% least deprived districts.

The Extent score indicates what proportions of an authority's residents are living in a deprived area. The proportion of people living in seriously deprived small areas is 0% for Brentwood.

A breakdown of the averaged deprivation rank and score provides an indication of any specific type of deprivation prevalent in an area.

Table 78: Character of Deprivation

	IMD	Income	Employment	Health & disability	Education, skills & training	Barriers to housing & services	Living environment	Crime	No. of small areas
Essex CC	4.6	6.4	3.5	2	15.6	20.7	1.2	6.5	863
Basildon	20	23.6	8.2	5.5	41.8	14.5	0	33.6	110
Braintree	0	2.4	0	0	15.5	25	0	0	84
Brentwood	0	0	0	0	0	15.6	2.2	0	45
Castle Point	0	3.5	1.8	0	15.8	0	0	0	57
Chelmsford	0	1	0	0	2.9	11.5	0	0	104
Colchester	4.8	6.7	2.9	3.8	9.6	27.9	2.9	6.7	104
Epping Forest	0	3.8	0	0	7.7	16.7	0	0	78
Harlow	1.9	1.9	0	0	37	46.3	0	18.5	54
Maldon	0	0	0	0	4.9	22	0	0	41
Rochford	0	1.9	1.9	0	1.9	5.7	0	0	53
Tendring	13.3	13.3	17.8	7.8	27.8	33.3	6.7	2.2	90
Uttlesford	0	0	0	0	0	32.6	0	0	43

Indices of Deprivation 2004 (revised) Essex Results. October 2004.

Table 78 shows that Brentwood Borough is largely less deprived than the County as a whole. However, there are two areas where performance could be improved:

- the Barriers to Housing and Services indicator, shows that 15.6% of the 45 small areas in Brentwood to be deprived. However, this is below the Essex average and only 4 out of the 12 Essex districts are less deprived than Brentwood on this measure. In Brentwood Borough the small areas are all within the rural areas of the Borough surrounding Brentwood town to the north west, north east and south west, but excluding Ingatestone, Doddinghurst, Blackmore, and Ingrave and Herongate. The Barriers to Housing and Services indicator includes two sub-domains - wider barriers to housing and geographical barriers to services. Table 79 shows that there are no small areas in Brentwood considered to be deprived within the wider barriers to housing sub-domain. This means that it is the geographical barrier to services sub-domain that has the greater effect to the deprivation recorded by the Barriers to Housing and Services indicator. The Table shows that 46.7% of small areas in Brentwood are deprived on this measure, compared with only 28.7% in Essex. Only Uttlesford, at 53.5%, scores higher. The geographical barriers to services sub-domain, considers distance to GP surgeries, supermarkets, primary schools and post offices.
- the Living Environment indicator, shows that 2.2% of the small areas in Brentwood to be deprived. Brentwood Borough is the 3rd most deprived Borough in Essex with regard to this indicator, with only Colchester and Tendring showing higher scores. In Brentwood Borough the small area affected is the residential area of the 'East Ham' estate, off Running Waters, in the south of Brentwood town. The indicator is split into two sub-domains, 'indoors' environment and 'outdoors' environment, with both recording the same value of 2.2% in Brentwood. The 'indoors' living environment, considers social and private housing in poor condition and houses without central heating., and the 'outdoors' environment considers air quality, and road traffic accidents.

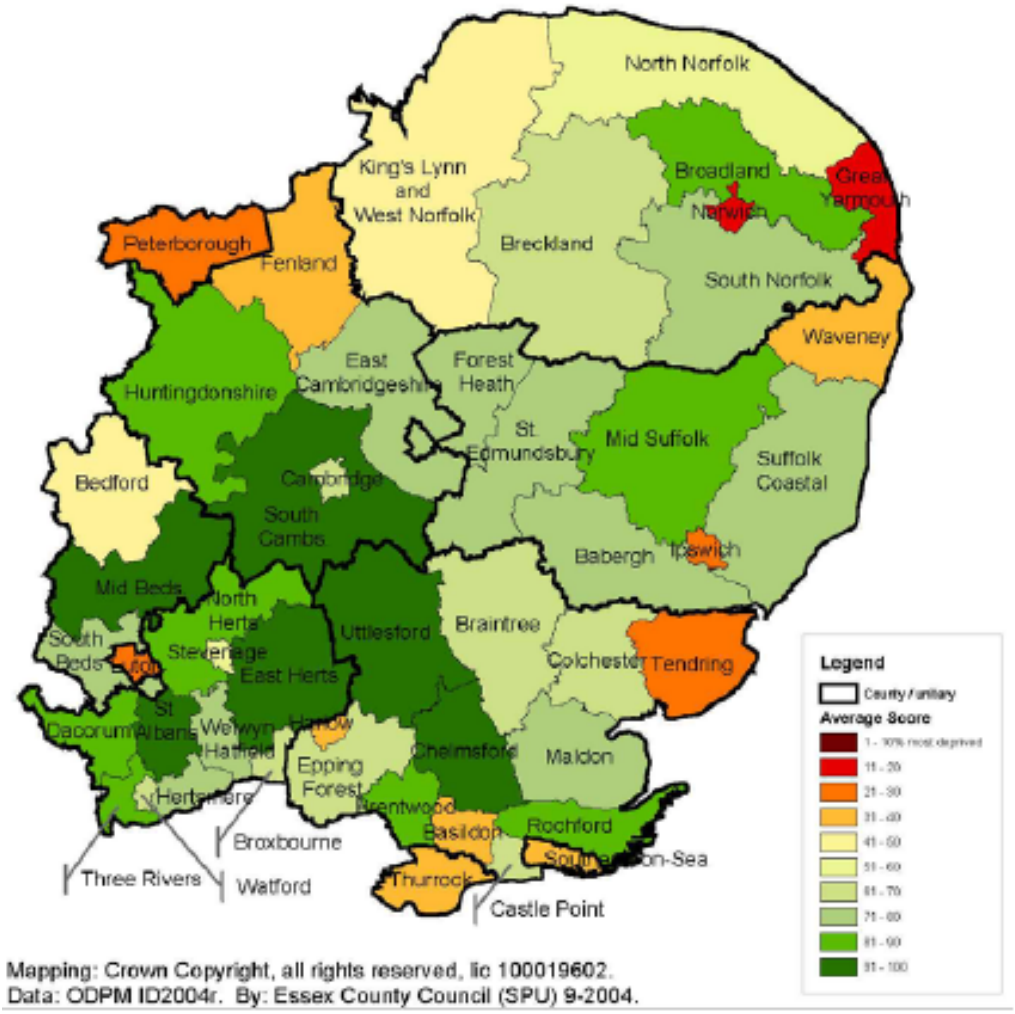
Table 79: Deprivation Character by Sub-Domain

	'Child poverty' (IDACI)	'Older people poverty' (IDAOPI)	Education sub-domain: children & young people	Education sub-domain: working age skills	Barriers sub-domain: geog barriers to services	Barriers sub-domain: wider barriers to housing	Environment sub-domain: 'indoors'	Environment sub-domain: 'outdoors'	No. of small areas
Essex CC	**7**	**5.9**	**12.7**	**18.5**	**28.7**	**11.5**	**2.1**	**3.5**	**863**
Basildon	22.7	22.7	41.8	48.2	22.7	0	0	8.2	110
Braintree	1.2	4.8	3.6	15.5	40.5	0	0	0	84
Brentwood	0	0	0	0	46.7	0	2.2	2.2	45
Castle Point	3.5	5.3	7	29.8	12.3	0	0	5.3	57
Chelmsford	1.9	1	2.9	1.9	31.7	0	1	2.9	104
Colchester	8.7	4.8	8.7	12.5	24	27.9	3.8	2.9	104
Epping Forest	6.4	3.8	3.8	15.4	26.9	1.3	0	5.1	78
Harlow	5.6	5.6	35.2	25.9	11.1	87	0	1.9	54
Maldon	0	0	2.4	4.9	46.3	0	0	0	41
Rochford	1.9	1.9	0	7.5	18.9	0	0	7.5	53
Tendring	13.3	6.7	24.4	33.3	26.7	24.4	13.3	2.2	90
Uttlesford	0	0	0	0	53.5	0	0	0	43

Indices of Deprivation 2004 (revised) Essex Results. Data published 2004

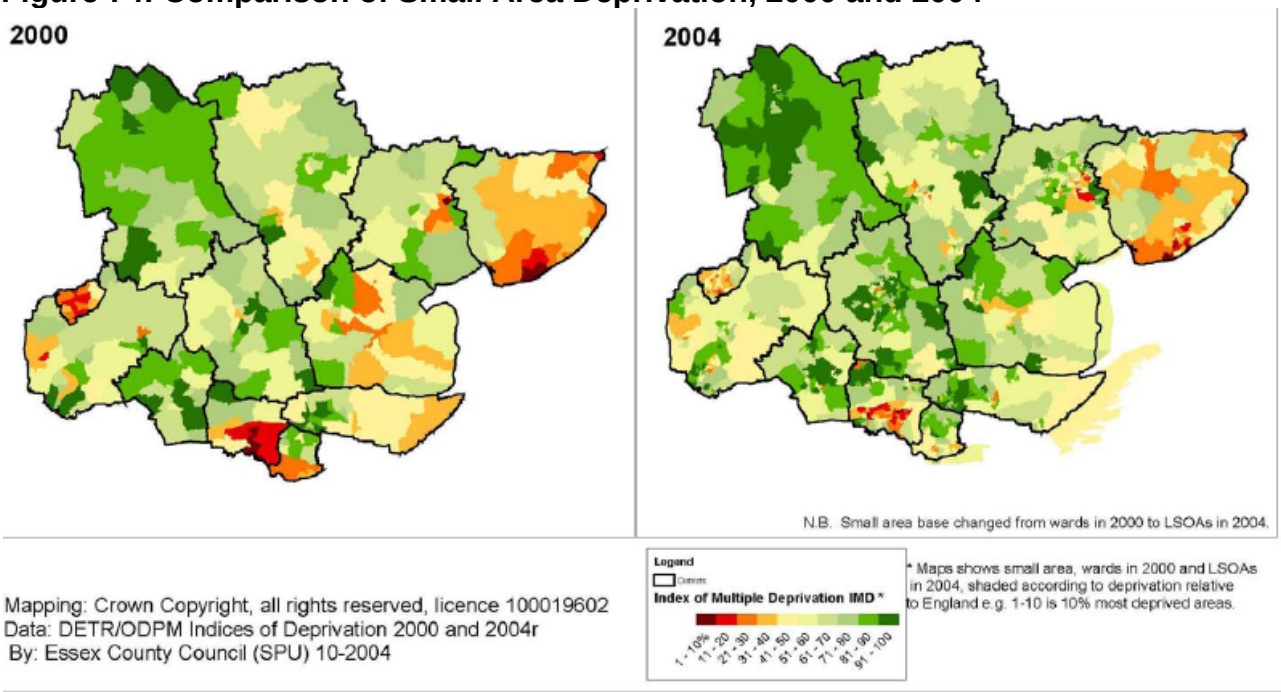
The spatial distribution of deprivation through the East of England is shown in Figure 73. This shows that Brentwood is one of the least deprived authorities in the region. Regionally, there is a broad pattern of higher deprivation in the north eastern parts of the region with lower deprivation in the south western parts. Within Essex, Tendring is the most deprived district and Uttlesford and Chelmsford are the least deprived. Brentwood falls within the top 10-20% of least deprived authorities.

Figure 73: IMD2004 Average Indices of Multiple Deprivation for the Eastern Region



Indices of Deprivation 2004 (revised) Essex Results. Data published October 2004

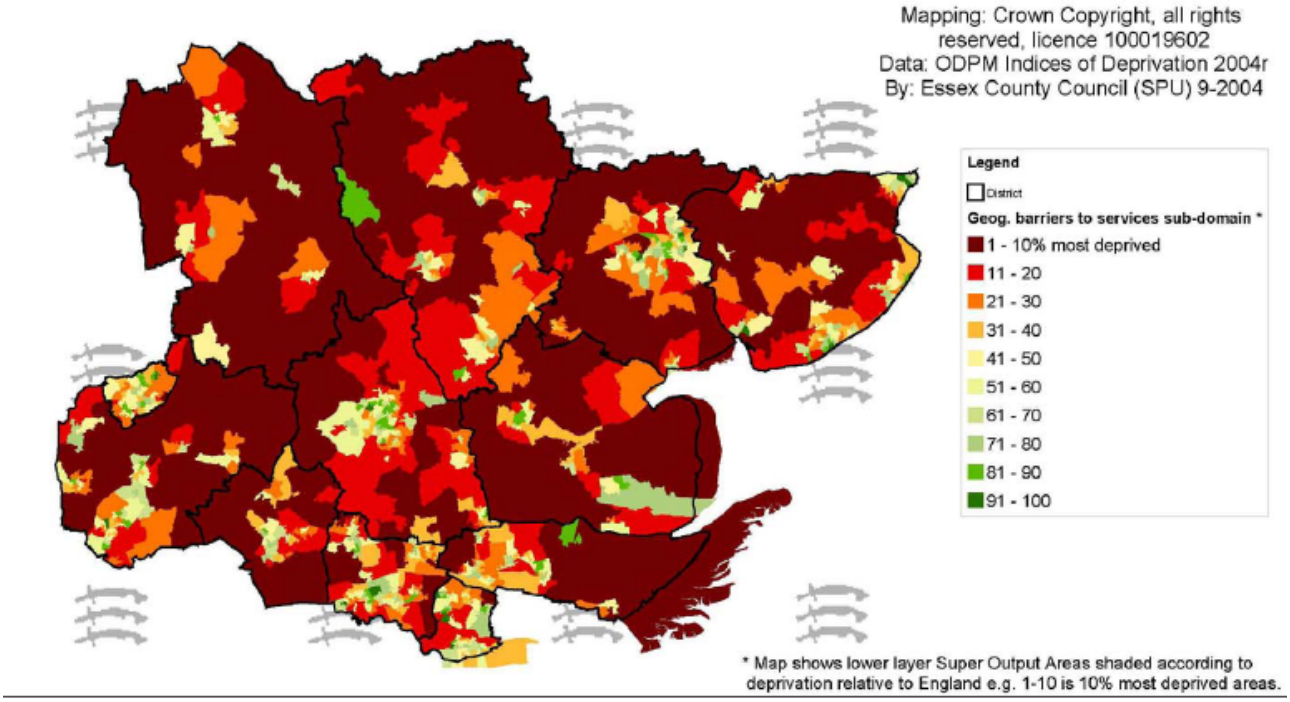
Figure 74: Comparison of Small Area Deprivation, 2000 and 2004



Indices of Deprivation 2004 (revised) Essex Results. Data published October 2004

In comparing the results of the 2000 IMD and the 2004 IMD, as shown by Figure 74, it should be noted that direct comparison is not possible, due to changes of methodology and data sources. Nevertheless, broad comparisons are possible and it does appear that Essex has become less deprived in the period between studies. Harlow District shows considerable improvements, along with areas in Basildon and Castle Point. With respect to Brentwood Borough, performance has largely reduced, with much of the reduction located in the Brentwood Rural Ward to the North of the Borough, although it is also evident in Brentwood Hutton and Brentwood South Wards.

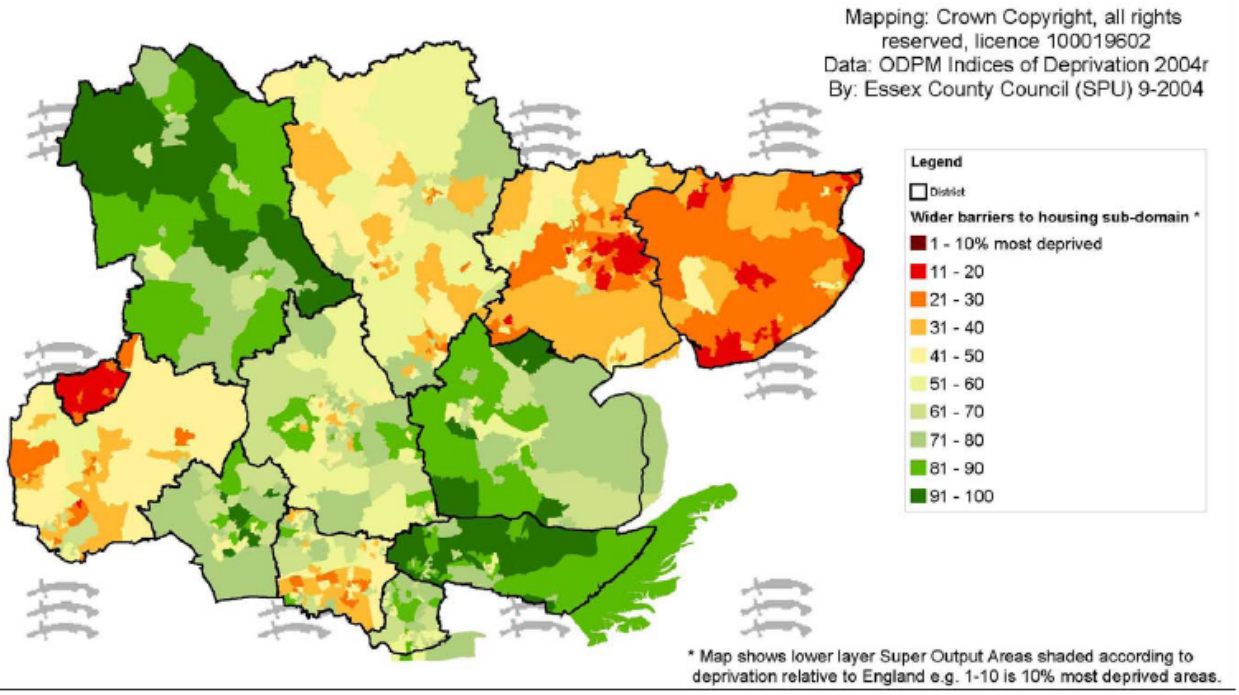
Figure 75: Geographic Barriers to Services Sub Domain



Indices of Deprivation 2004 (revised) Essex Results. Data published October 2004

The Geographic Barriers to Services sub-domain is a major contributor to deprivation in both Essex and Brentwood Borough. Relative to the country as a whole, on this measure the majority of Essex, by area, is in the 10% most deprived areas of the country, with only isolated patches of good performance. Urban areas tend to score better than rural areas on this measure. The same pattern is generally exhibited within Brentwood Borough, but, by this measure, the majority of the Borough by area falls within the 20% most deprived areas. The areas of poorest performance in Brentwood Borough are largely concentrated in the Ward of Brentwood North.

Figure 76: Wider Barriers to Housing Sub-Domain



Indices of Deprivation 2004 (revised) Essex Results. Data published October 2004.

Figure 76 shows that performance in terms of the Wider Barriers to Housing sub-domain is extremely mixed throughout Essex. There does not appear to be any immediate spatial pattern discernable. It is however noticeable that Colchester, Harlow and Tendring Boroughs/Districts are all under performing in this field. Elsewhere in Essex, whilst there is scope for improvement in some areas, the majority of areas display average or better performance. The majority of Brentwood Borough is, at a minimum, in the 40% least deprived areas, with Brentwood North Ward again showing the worst performance.

15.4 Summary

- Brentwood Borough is the 4th least deprived District out of the 12 districts in Essex;
- Brentwood Borough is largely less deprived than the County as a whole. However, there are two identified domains in which performance could be improved, namely Living Environment and Barriers to Housing and Services;
- Brentwood Borough is in the top 20% least deprived authorities in the East of England region, within which there is a broad pattern of deprivation increasing towards the north east, in areas furthest from London;
- Brentwood Borough is largely in the 10% most deprived areas in respect of the Geographic Barriers to Services sub-domain.

16. CULTURAL HERITAGE AND MATERIAL ASSETS

16.1 Introduction

The historic environment should be effectively protected and valued for its own sake, as an irreplaceable record which contributes to our understanding of both the present and the past. The presence of the historic environment adds to the quality of life, by enhancing the local scene and sustaining a sense of local distinctiveness, which is an important aspect of the character and appearance of our towns, villages and countryside. It also has an importance for leisure and recreation.

16.2 Policy Context

A. International / National Context

i) Under the Treaties of Rome (1957) and Maastricht (1992) and the Draft European Constitution (2003), conservation of European cultural heritage is a consideration for all EU activities. There are however no EU Directives covering cultural heritage. Almost all European countries have ratified the Council of Europe's Valletta Convention (1992) and the Granada Convention (1985) on Archaeological Heritage, and many (though not yet the UK) are signatories to the Florence Convention (2000) on European Landscape. Most European countries have signed (although several including the UK have not yet ratified) the UN Economic Commission for Europe Aarhus Convention (1998) on Environmental Information. Increasingly, cultural heritage is being recognised as an important aspect of sustainable development, as is reflected in the Council of Europe's Guiding Principles for Sustainable Spatial Development of the European Continent (2002), in the EU SEA Directive (2001) and the EIA Directive (1985).

ii) Although the current framework, 'A better quality of life: a strategy for sustainable development for the UK' (DEFRA, 1999) refers to cultural heritage, it is not a major aspect of UK sustainability at a strategic level. However, with the publication of the Government's statement 'The Historic Environment: A Force for Our Future' (DCMS 2001), the importance of the historic environment to people's quality of life is highlighted. Within development planning, the historic environment has become a more significant aspect of sustainability, as exemplified by PPG15 and PPG16 for example. PPG16 provides guidance on how archaeology is to be dealt with in the planning framework; PPG15 provides similar advice with respect to listed buildings and conservation areas. Further guidance documentation regarding heritage includes English Heritage's statement on sustainability (English Heritage, 1997) and a joint statement by English Heritage, English Nature and the Countryside Agency (Countryside Agency *et al.*, 2001).

B. Regional / County Context

i) In the East of England there are 57,643 listed buildings, 211 registered parks and gardens, a registered battlefield at Maldon, approximately 1,600 scheduled monuments and 1,100 areas of special architectural or historic interest, designated as Conservation Areas. English Heritage has identified 2% of the region's listed buildings as being 'at risk of decay' (Our Environment, Our Future: The Regional Environment Strategy for the East of England. East of England Regional Assembly and East of England Environment Forum, July 2003). It is difficult to quantify the archaeological resource, but there are approximately 150,000 archaeological sites currently recorded on County Sites and Monuments Records.

ii) The Draft East of England Plan, prepared by the East of England Regional Assembly (EERA), was submitted to Government in December 2004. Following a period of public consultation the Plan was subject of an Examination in Public (EiP) between November 2005 and March 2006. The Report of the EiP Panel was published in June 2006. In December 2006 the Secretary of State published Proposed Changes to the Draft Plan for a period of public consultation to March 2007. The final Plan is expected to be published by Government by summer 2007. Policy ENV5: The Historic Environment of the Draft Plan seeks to identify, protect, conserve and enhance the historic environment, its archaeology, historic buildings and areas of historic landscapes, including those features and sites (and their settings) especially significant in the East of England.

ii) The historic environment has to be managed, conserved and enhanced in a holistic way. Some of what is regarded as the natural environment is actually a human creation often of considerable antiquity, so that an integrated approach to the natural and historic environment is necessary. Regional Spatial Strategies and Local Development Frameworks provide mechanisms through which this can be achieved. Accordingly, in recognition of the Government's clear intention set out in 'Force for our Future' in promotion of cross department and inter-agency working in management of the historic environment, Countryside Agency, English Heritage, English Nature and the Environment Agency have issued 'Environmental quality in Spatial Planning: incorporating the natural, built, and historic environment, and rural issues into plans and strategies' (Countryside Agency *et al.,* 2005). This seeks to promote a holistic approach to planning for the natural and historic environment, by encouraging the incorporation of appropriate policies in Regional Spatial Strategies and Local Development Frameworks.

iv) Historic Landscape Characterisation (HLC), sponsored by English Heritage, is being completed on a county-by-county basis. The HLC approach is related to two national frameworks – the Countryside Agency's 'Countryside Character Map' which itself recognises the fundamental historic character of the countryside, and English Heritage's 'Atlas of Settlement Diversity'. Most recently English Heritage in partnership with Essex County Council and Kent County Council has carried out a Historic Environment Characterization Project for Thames Gateway which is the first attempt to develop a holistic approach characterizing the historic environment. Such characterization can be of use in understanding the capacity and sensitivity of areas in accommodating new development, or in assessing particular planning proposals as they come forward.

vii) Outside the planning system a critical means for enhancing the conservation and management of the historic environment in rural areas is provided by the Environmental Stewardship scheme administered by DEFRA. Environmental Stewardship provides funding to farmers who manage their land sensitively and effectively, with a primary objective being to protect the historic environment.

vii) The Essex and Southend-on-Sea Replacement Structure Plan was adopted in April 2001. The Planning and Compulsory Purchase Act 2004 introduced a 'new' statutory plans system. The transitional arrangements for the 'new' system provide for the Adopted Structure Plan policies to be "saved" to 28th September 2007. Beyond that date policies of the Plan will cease to have effect unless they are "saved" by the Secretary of State. The Secretary of State has published a protocol on the procedures for saving Structure Plan policies. The protocol requires the Regional Planning Body to make requests for extending the life of Structure Plan policies to the Secretary of State by 1st April 2007. Such requests will be considered in the light of criteria set out in PPS11 paragraph 2.57.

Relevant policies in the Adopted Plan, April 2001 are:

- Policy HC1: Historic Settlements seeks to protect, safeguard and enhance historic settlements.
- Policy HC2: Conservation Areas seeks to preserve and enhance the character and appearance of Conservation Areas.
- Policy HC3: Protection of Listed Buildings offers protection from demolition, damage and unsympathetic change.
- Policy HC4: Conversion of Listed Buildings: allows for conversion to a new use where this would preserve the building and its qualities.
- Policy HC5: Protection of Archaeological Sites seeks to prevent damage to designated and nationally important archaeological sites.
- Policy HC6: Archaeological Assessment sets criteria for consideration of development proposals affecting archaeological sites.

C. Brentwood Context

The Brentwood Borough Council Replacement Local Plan was formally adopted on 25th August 2005. The adopted Replacement Local Plan currently comprises the revised Deposit Draft Plan (September 2003) together with the proposed modifications (May 2005). Relevant policies within the Local Plan are:

- PolicyCP1: General Development Criteria lists a set of criteria that any development will need to satisfy, including:
  i) The proposal would not have an unacceptable detrimental impact on visual amenity, or the character and appearance of the surrounding area.
  ii) The proposal should be of a high standard of design and layout and should be compatible with the street scene and surrounding development (and, in the case of alterations and extensions, with the existing building), in terms of size, siting, scale, style, design and materials.
  iii) The proposal will be expected to take full account of the need to conserve or enhance the character, appearance, biodiversity and historical and archaeological heritage of the site and the surrounding area. Where it is considered that the harm to or loss of the environmental asset is outweighed by the need for the development, the council will require appropriate compensatory measures, either on-site or off-site.
- PolicyC18: Development Affecting Conservation Areas states that when considering applications for development within and in the vicinity of conservation areas, special attention will be given to the need to preserve or enhance their character or appearance. Development proposals will be permitted only where the council is satisfied that:
  i) The proposals preserve or enhance the townscape character of the area.
  ii) The materials to be used are sympathetic to the surrounding buildings and appropriate to the area.
  iii) The mass of the building is in scale and harmony with the adjoining buildings and the area as a whole.
  iv) The design of the building is such that the proportions of the parts relate satisfactorily to each other and to adjoining buildings.
  v) The proposal does not affect any buildings, open spaces, trees, views or other aspects which contribute to the special character of the area.
  vi) Where demolition is proposed, the structure to be demolished makes no material contribution to the character or appearance of the area, and there are

satisfactory proposals for the re-use of the site including any replacement building or other structure.

vii) Where a change of use is proposed, the new use will not require any changes in the appearance or setting of the building other than those which will preserve or enhance its contribution towards the character or appearance of this area.

viii) Where an alteration is proposed, it is appropriate and sympathetic in design, scale, materials and colour to the rest of the building.

Outline planning permission will not be given for new buildings in a conservation area.

- PolicyC19: Listed Buildings Demolition, Alterations or Extensions states that the demolition or partial demolition of a listed building will only be allowed in the most exceptional circumstances. Alterations or extensions will only be permitted subject to the following criteria:
  i) The proposal does not detract from the character or setting of the listed building
  ii) The proposal is appropriate and sympathetic in terms of design, scale and materials.
  iii) The plans submitted take into account the requirements of the fire officer, building control, environmental health and other legislation, in order that the full impact of the proposal may be considered.
- PolicyC20: Development within the Vicinity of a Listed Building states that proposals for development in the vicinity of a listed building will not be permitted where the proposals would be likely to detract from its character or setting.
- PolicyC21: Changes of Use of a Listed Building only permits changes of use of a part, or the whole of a listed building, if it results in the character and features of special architectural or historical interest being preserved or enhanced. Proposals should incorporate details of all the intended alterations to the building and its curtilage including detailed plans taking into account the requirements of the fire officer, building control, environmental health and other relevant legislation.
- PolicyGB18: Conversion or Change of Use of Listed Buildings states that if the Council is satisfied that the present use of a listed building located within the Green Belt is no longer viable, as a means of ensuring its adequate maintenance, permission may only be granted for conversion or change of use where all the following criteria are met:
  i) The historic or architectural character of the building will be retained after such conversion
  ii) Extensions or inappropriate alterations are not necessary to facilitate the new use
  iii) The proposal will not have a detrimental impact on other persons' enjoyment of the countryside
  iv) Proposals must take into account of the provisions of GB2, C19, C20 and C21

  Where appropriate, a condition will be imposed removing permitted development rights to extend the building, to erect walls/fences and to erect outbuildings.
- Policy C22: Ancient Monuments and Archaeological Sites seeks to protect the aforementioned from unsuitable proposed development. Where important archaeological sites and monuments, whether scheduled or not, and their settings are affected by a proposed development, there will be a presumption in favour of their preservation in situ. In situations where there are grounds for believing that the proposed development would affect important archaeological sites and monuments, developers will be required to arrange for an archaeological field assessment to be carried out before the application can be determined thus enabling an informed and reasonable planning decision to be made. In circumstances where preservation is

not possible or feasible, then development will not be permitted until satisfactory provision has been made for a programme of archaeological investigation and recording prior to the commencement of the development.

16.3 Current Baseline Information

A. Listed Buildings

Listed buildings of special architectural or historic interest are important in contributing to the character of the Borough. A listed building is regarded as a structure that is of national or architectural interest therefore listed buildings are not purely older buildings.

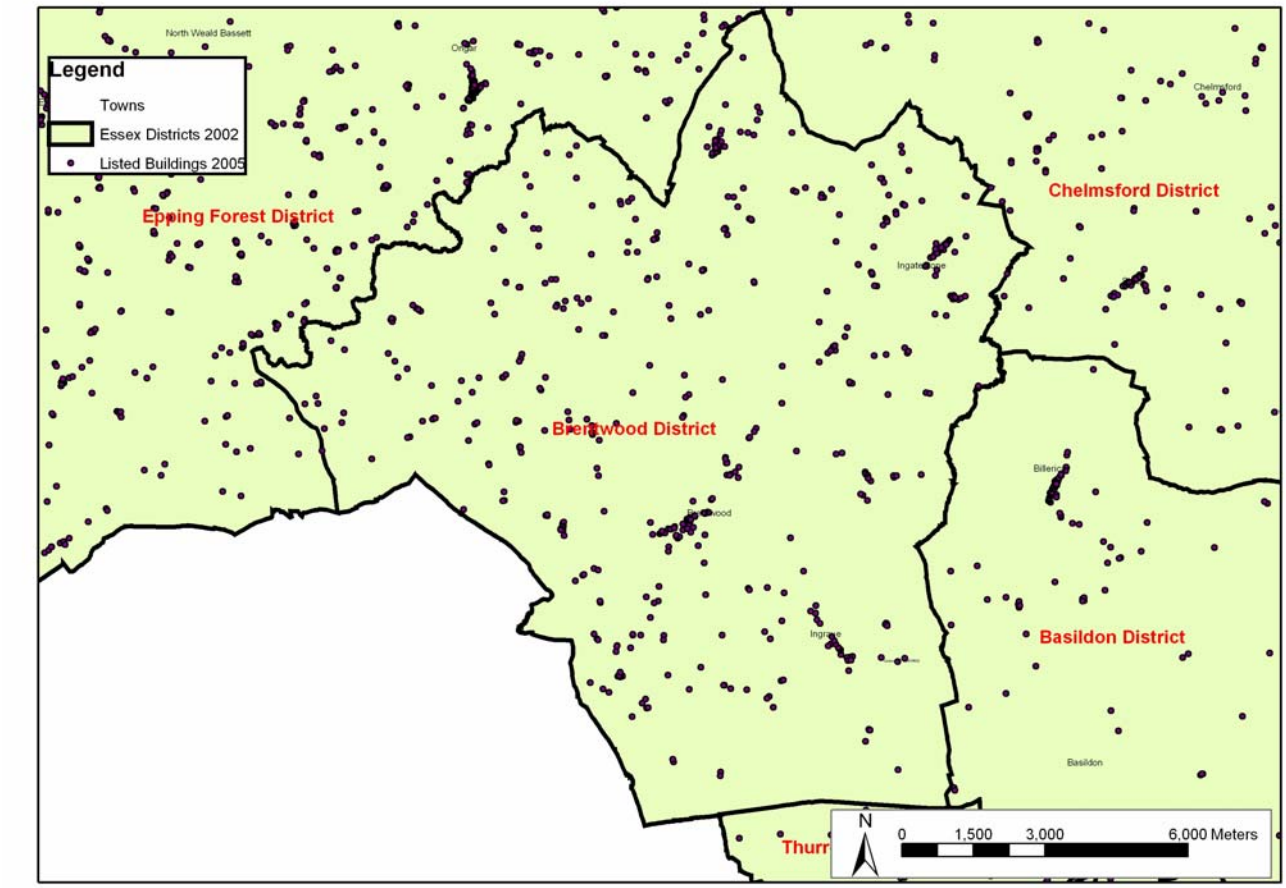
The total number of listed buildings or groups of buildings that are listed Grade 1 and 2* in England was 30,491 (English Heritage, 2005) an increase of 2% since 1999 (English Heritage, 2005). Within the Essex County Council administrative area there are currently 14,239 listed buildings. Brentwood Borough contains 514 of the Essex listed buildings (Essex County Council, Heritage, Environment and Commerce, December 2006). The Borough of Brentwood total of listed buildings comprises 3.6% of the total number of listed buildings within Essex. Table 80 outlines the listed building composition for Brentwood Borough, and Figure 77 shows the distribution of listed buildings through the borough.

Table 80: Listed Building Types Within Brentwood Borough

Type of Listed Building	Total Number
Grade I	12
Grade II*	27
Grade II	475
Total	514

(Essex County Council, Heritage, Environment and Commerce, December 2006)

Figure 77: Spatial Distribution Of Listed Buildings In Brentwood Borough



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B. The Historic Buildings at Risk Register

The Historic Buildings at Risk Register contains details of buildings known to be 'at risk' through neglect and decay, or vulnerable to becoming so. The objective of the Register is to outline the state of repair of these buildings with the intention of instigating action towards securing their long term conservation. Table 81 illustrates the number of buildings at risk in 2004, 2005 and 2006, while table 82 shows the number of listed buildings removed from the risk register.

Table 81: Number of Buildings at Risk in 2004, 2005, and 2006

Area	At Risk			Newly at Risk		
	2006	2005	2004	2006	2005	2004
Basildon	2	3	2	0	0	1
Braintree	31	32	27	3	4	9
BRENTWOOD	11	10	9	2	2	1
Castle Point	0	1	1	0	0	0
Chelmsford	5	6	8	11	0	0
Colchester	22	26	21	4	0	5
Epping Forest	14	15	12	1	1	3
Harlow	2	3	3	2	0	0
Maldon	11	11	6	0	2	5
Rochford	7	7	8	1	0	0
Southend UA	*	*	*	*	*	*
Tendring	20	27	26	7	0	4
Thurrock UA	17*	15	17*	0	2	0
Uttlesford	14	17	17*	2	0	3
TOTAL	156	173	157	33	11	31

* = No figures received from district
(Source, Essex County Council, 2005)

The register addresses a 'moving target' and as some buildings are repaired and taken off, others become 'at risk' and are added. The success of the Register may be measured by the number of buildings added, furthermore both the success and failure of the conservation measures employed is reflected in the numbers removed.

The Borough of Brentwood demonstrates that the number of buildings deemed 'at risk' from 2004-2006 has marginally increased from 9 in 2004 to 11 in 2006. The number of 'at risk' buildings in 2006 is marginally lower than the average for the Essex local authorities (including Thurrock). However the proportion of buildings 'newly at risk' is declining throughout the period and similarly to the buildings deemed 'at risk' the number of 'newly at risk' buildings is less than the average for Essex (including Thurrock). The degree of success is measured by the proportion of buildings removed from the Buildings at Risk Register. In 2004 and 2005 the Borough of Brentwood failed to remove buildings from register. However in 2006 Brentwood Borough a single building was removed. The average number of buildings removed from the register was 2; therefore Brentwood is marginally lower than the average for the Essex districts.

Table 82: Total Number of Listed Buildings Removed from the Risk Register

Administrative Area	No Longer At Risk 2006	2005	2004
Basildon	1	0	1
Braintree	5	4	7
Brentwood	1	0	0
Castle Point	1	0	1
Chelmsford	1	2	0
Colchester	4	0	8
Epping Forest	1	0	4
Harlow	1	0	0
Maldon	2	0	2
Rochford	0	1	2
Tendring	7	2	1
Thurrock UA	0*	2	0
Uttlesford	3	3	0
TOTAL	**27**	15	26

*** = No figures received from district**

Source; Essex County Council, 2005

Each year monitoring is undertaken to determine the degree of severity of buildings at risk in each district throughout Essex (including Thurrock). Within Brentwood Borough in 2006 there is a total of 13 buildings deemed to be 'at risk' to varying degrees. Priority A is the greatest, and this demonstrates that the building is at immediate risk of chronic deterioration or loss of fabric. Table 83 outlines buildings' at risk', date registered and a summary of the state of the building.

Table 83: Buildings at Risk throughout the Borough of Brentwood

Designation	Priority	Condition	Date Registered	Ownership	For Sale	Summary
Thoby Priory Ruins, Thoby Lane Mountnessing						
Grade II	A	Very Bad	1999	Private	No	Ruin remains of 14th and 15th Century Augustinian Priory, recent collapse of unconsolidated fabric.
Stables adj. to All Saints, Brentwood Road, East Horndon						
Grade II	A	Poor	2005	Private	Unknown	16th Century out building used for stabling by the church. No longer water tight, roof tiles stolen and suffering from vandalism. Repairs should commence 2006.
Coachmans Cottage, Church Street, Blackmore						
Grade II	C	Very Bad	2003	Private	Unknown	18th Century stable range and Coachman's Cottage sited 45m N of Jericho Priory. Planning permission renewed and discussions in progress.
Brewhouse, SW of Hook End Poultry Farmhouse, Blackmore						
Grade II	C	Poor	1992	Private	No	18th Brewhouse. No longer watertight, missing roof tiles.
Dytchleys, Coxtie Green Road, Pilgrims Hatch						
Grade II	D	Fair	2002	Private	No	Large early 18th Century house. Current owner undertaking restoration work, but progress very slow. Outbuildings in a very poor or semi-collapse state.
Service Station, 21 Hutton Road, Shenfield						
Grade II	C	Poor	1992	Company	No	14th Century timber framed house, now garage. Urgent works undertaken, but further repairs required. Discussions ongoing regarding its conversion back to residential use as part of a wider residential development.
Summerhouse adjacent to Hutton Lodge, Hutton						
Grade II	A	Poor	2004	Private	No	Ornamental 19th Century timber framed garden building, currently partially roofless.
Warley Hospital, Warley Hill, Brentwood						
Grade II	F	Poor	2003	Company	Unknown	Mid 19th Century hospital corridor plan, with associated laundry building, 'pepperpot' boundary turrets and brewery building. Roofs and rainwater goods in poor condition. Residential conversion has been granted and works are well underway.

Chantry Chapel, Thorndon Park Brentwood						
Grade II	C	Poor	1998	Private	No	Mid 19th Roman Catholic Chapel and Mausoleum of the Petre Family by W.W Wardell. Redundant and suffering from a leaking roof. Access problems hinder reuse.
Barn adj. to the Tower Arms Public House, South Weald						
Grade II	D	Very bad	2003	Private	Unknown	Barn within the cartilage of the Tower Arms Public House. 16th century with 19th Century additions. Planning permission and LBC for conversion granted. Scaffold support recently erected and works due to commence.
Cranwell House, 102 High Street, Ingatestone						
Grade II	E	Poor	2005	Private	Unknown	Late 18th Century or early 19th Century house, now used for offices. Planning permission for extension and office use granted and building works underway.
Granary at Bakers farm, Roman Road, Mountnessing						
Grade II	C	Poor	2005	Private	Unknown	Early 19th Century with clay pantile roof. Largely unused and in a poor state of repair. Schedule of repair had been carried out but planning permission for business yet to be implemented.
Mount Thrift Farm, Herongate						
Grade II	A	Very bad	2006	Private	Unknown	Curtilage listed timber barn. No longer weathertight, missing roof tiles, weatherboard and generally lacking maintenance. Preliminary discussions re; residential/office conversion in progress.

(Source; adapted from Essex County Council Heritage Section of Website, 2006)

C. Conservation Areas

Essex currently has 230 designated Conservation Areas. The Conservation Areas are designated because they are historical centres of towns and buildings of special architectural or historic interest which are protected under the Listed Buildings and Conservations Areas Act (1990). The objective of the Conservation Area is to preserve the character of the specific area. Throughout the Borough of Brentwood there are currently 13 Conservation Areas which contain a significant proportion of the local authority's historic buildings. Table 84 illustrates the name of the conservation area, date of last amendment, size and type for Conservation Areas within Brentwood Borough.

Table 84: Conservation Areas in Brentwood Borough

Name	Date (amended)	Area (ha)	Type
Ingatestone High Street	27/11/69 (17/09/91)	8.5	Village Centre
South Weald	2/11/73 (22/7/93)	4.0	Village Centre
Blackmore	12/12/75	18.0	Village Centre
Great Warley	12/12/75 (22/7/93)	4.0	Village Centre
Herongate	12/12/75	5.5	Village Centre
Station Lane, Ingatestone	22/09/81 (17/09/91)	10.0	Residential Area
Hutton Village	23/04/86	30.0	Residential Area
Fryerning	8/3/91	25.0	Village
Weald Park	22/07/93	212.0	Park and Garden
Warley Place	22/07/93	243.0	Park and Garden
Brentwood Town Centre	1/3/00	14.5	Historic Town Centre
Highwood Hospital	12/07/01	5.1	Hospital

(Brentwood Borough Council Website – Conservation Areas, 2006)

D. Scheduled Ancient Monuments

Scheduled Ancient Monuments (SAMs) are protected by the Ancient Monuments and Archaeological Areas Act 1979. Any development SAMs are sites of national importance. The purpose of designating SAMs is to preserve the monument for the future and protect it from damage, destruction or any unnecessary interference. Throughout Essex there are 300, ranging from prehistoric burial mounds to unusual examples of World War II defensive structures. Figure 78 illustrates the location of the 12 SAMS by their National ID to aid clarity. All SAMS are named and located by parish in Table 85.

Figure 78: Spatial Distribution of Scheduled Ancient Monuments Within The Borough of Brentwood By National ID

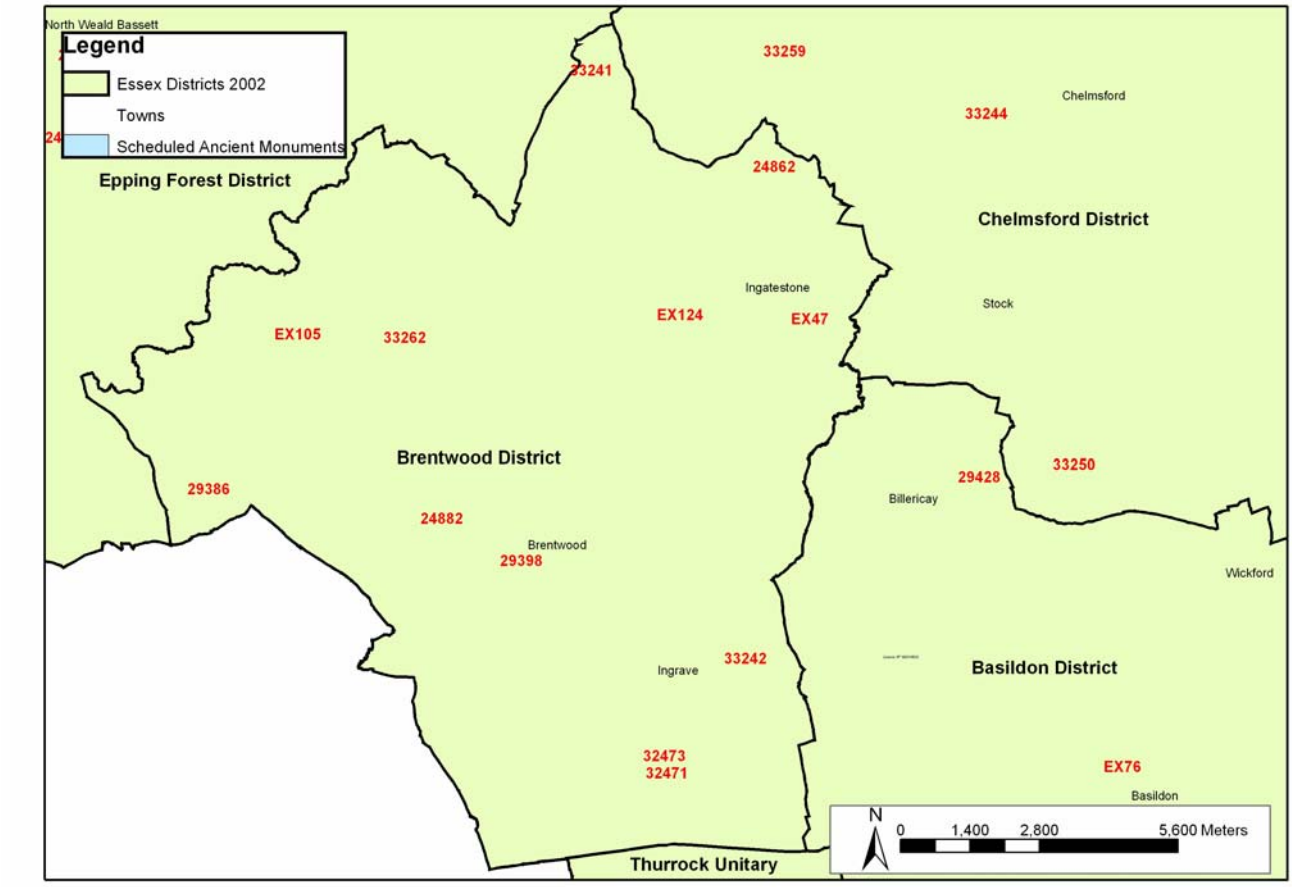

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Table 85: List of Scheduled Ancient Monuments in Brentwood Borough

Name	Status Date	Administration Area	National Reference
Roman villa 100m north west of Handley Barns	20/08/1994	INGATESTONE AND FRYERNING, BRENTWOOD, ESSEX	24862
Slight univallate hillfort 300m west of Calcott Hall Farm	08/12/1995	BRENTWOOD, BRENTWOOD, ESSEX	24882
Moated site at Watton Farm	08/12/1997	NAVESTOCK, BRENTWOOD, ESSEX	29386
The Chapel of St Thomas a Becket	08/12/1997	BRENTWOOD, BRENTWOOD, ESSEX	29398
Former parish church and churchyard of St Nicholas	24/02/2004	BRENTWOOD, BRENTWOOD, ESSEX	32471
Old Thorndon Hall and Gardens	24/02/2004	BRENTWOOD, BRENTWOOD, ESSEX	32473
Moated site at Fingrith Hall Farm	12/07/1999	BLACKMORE, BRENTWOOD, ESSEX	33241
Moated site immediately east of Heron Hall	07/07/1999	BRENTWOOD, BRENTWOOD, ESSEX	33242
Moated site 210m south east of Brizes	27/09/1999	KELVEDON HATCH, BRENTWOOD, ESSEX	33262
Moated site in Fortification Wood		NAVESTOCK, BRENTWOOD, ESSEX	EX105
Thoby Priory	01/02/1961	MOUNTNESSING, BRENTWOOD, ESSEX	EX124
Barn at Ingatestone Hall		INGATESTONE AND FRYERNING, BRENTWOOD, ESSEX	EX47

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16.4 Summary

- There are 514 listed buildings in Brentwood Borough, of which 12 are Grade I and 27 are Grade II*.
- There are 11 listed buildings at 'risk' in Brentwood Borough, with 2 buildings becoming 'newly at risk' and 1 building removed from the Risk Register during 2006.
- There are 13 Conservation Areas in Brentwood Borough, containing a significant proportion of the Borough's listed buildings.
- There are 12 Scheduled Ancient Monuments in Brentwood Borough.

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