Historic Environment Issues in the Proposed London–Stansted–Cambridge Growth Area

(With an indicative study of the Harlow–Stansted area)

Summary

The historic environment is not just restricted to designated sites – it surrounds us. It includes assets such as designated historic buildings and archaeological sites, but alone these provide only the narrowest view of the richness of the historic environment and the contribution it makes to modern life. An understanding of the historic structure and origins of our contemporary landscape offers so much more. The landscape provides not only the context for individual buildings and monuments (and the planning decisions that affect them) but it also underpins our appreciation of the places where we live and work and contains those themes of continuity and a 'sense of place' which enhance our quality of life.

English Heritage (EH) and colleagues in the region's Association of Local Government Archaeological Officers (ALGAO) are concerned that this broad, holistic vision of the historic environment is currently poorly represented in the strategic planning process. We are anxious to ensure that new methods, based on Historic Landscape Characterisation (HLC), are properly employed in planning for a sustainable future. This document details these concerns and provides an example, developed from HLC, based on a study area within one of the Government's proposed 'Growth Areas' to demonstrate the value of this approach and provide a foundation from which a holistic approach could be developed. Appropriate recognition of the wider historic environment permits new development to be intelligently planned and designed, drawing and maintaining benefit from the special historic qualities of the landscape, whilst avoiding unnecessary loss of valuable local character.

Contents

1. Introduction

1.1 Proposed growth

The Government's recent document *Sustainable Communities: Building for the future* (ODPM 2003) identifies four areas that hold the key to sustaining economic growth and meeting social requirements in the south of England over the next 20-30 years. These four areas - Ashford in Kent, the Thames Gateway, Milton Keynes and the South Midlands, and the London–Stansted–Cambridge corridor - are each considered to have the potential for particularly high levels of urban growth and employment. Such development, together with related improvements to the transport, economic and social infrastructure, will pose many challenges in terms of its potential impact on the historic environment.

This document addresses the particular question of proposed growth in the London–Stansted–Cambridge corridor. Its conclusions at a broader level have relevance for the other Growth Areas and for all large-scale development in terms of managing changes to the historic environment. Indeed, we hope that the indicative study contained herein will provide the basis for a modern set of assessment and evaluation methods capable of responding to development and planning proposals affecting the historic environment within the context of evolving notions of, among other things, sustainability, characterisation, social inclusion and participation.

Proper consideration of the historic environment must be applied at all stages in the development process. The indicative study within this report sets out to demonstrate the benefits of effective analysis in relation to the highest level of strategic planning, although the principles demonstrated in this report are readily adaptable to subsequent more detailed development scenarios. The indicative study deals with the historic landscape, but sets out an approach, which in the near future could be developed in partnership with County Archaeological staff and Local Delivery organisations to encompass the historic environment in its entirety.

1.2 Development frameworks

The *Sustainable Communities* paper advocates the construction of 250,000–500,000 dwellings within the London-Stansted-Cambridge (LSC) corridor in the period to 2031, including sizeable numbers already under consideration (but not necessarily allocated) by local authorities.

1.2.1 Sub-regional studies

A sub-regional study for the LSC corridor completed in July 2002 (Ecotec & Partners 2002) forms the basis for statements in the *Sustainable Communities* plan relating to this Growth Area. This study identified initial areas for growth in the Lower Lea Valley and around Harlow and Cambridge. A new settlement in north Essex or south of Cambridge was also identified as a longer term option.

Harlow is already recognised as a priority area for economic regeneration (PAER) in Regional Planning Guidance (RPG) 9 for the South East. The 'Harlow Options Study', completed in June 2003, concluded that two growth options outlined in *Sustainable Communities* (a sub-regional urban focus, and a transport and regeneration-led corridor) could meet the town's objectives, although both options would require a substantial release of land from the adjacent Green Belt. Proposals

for growth at either end of the corridor are currently being addressed through reviews of the Cambridgeshire structure plan and the draft London Plan.

The Government's consultation on *The Future of Air Travel in the United Kingdom* proposed a number of scenarios to meet increased national demand for air travel, including options to expand Stansted Airport. These options have direct relevance to the LSC corridor since, whether the choice is to build new runways or increase use of the existing one, these changes will bring growth to the immediate area and impact on the direction of growth in the corridor as a whole.

In March 2003 Essex County Council, acting on behalf of partners in the region, began a study of the urbanisation consequences of Stansted's expansion. This study is due to be completed in September 2003, and will inform the emerging Regional Planning Guidance for the East of England. Current progress is detailed in the *Stansted/M11 Developments Option Study Key Issues Report* issued in July 2003 (Buchanan & Partners 2003b). This report concluded that a study area covering much of Essex as well as South Cambridgeshire and East and North Hertfordshire has indeed the capacity to absorb various levels of urban expansion or intensification. A number of specific areas have been ruled out due to overriding sensitivity issues identified at this stage. The rest is set to undergo more detailed studies, including Quality of Life Capital assessment, in the next few months.

The current position, therefore, is that the levels of growth in the area between London and the Cambridge sub-region have yet to be established in any detail. In this context we have selected the zone surrounding Harlow and Stansted (see ***Figure 1***) in order to provide an improved model for assessing the historic environment in this key area (see Section 4) should provide valuable assistance in further stages in the Growth Area assessment process.

Figure 1. The London Stansted Cambridge Study Area: Context Map of study area within East of England

2. Planning and the Historic Environment: English Heritage's concerns.

2.1 What is the historic environment?

'In its broadest sense the historic environment embraces all those aspects of the country that reflect the shaping hand of past human activity' (PPG 15 6.1)

This statement reflects the fact that the English Landscape is an historic document in itself – reflecting & recording human action and interaction through time. Therefore the historic environment is not just restricted to designated sites or to special buildings. It encompasses historic buildings, gardens, parklands and archaeological sites which nest within, and relate to the whole landscape of field systems, settlements, communication routes and a wealth of other features that combine to tell the full story.

Every place or area, has historic character and origins. The current challenge is not only to identify what is historic, or to evaluate what is most valued historically or archaeologically, but also to decide what to do about such judgements in terms of management for the future. Aspects including character, sensitivity and vulnerability, in conjunction with the capacity of a place to absorb change without losing its historic depth and links to the past, can be more important measures than value and significance on their own. An holistic approach is required, hence this document and the indicative study which it contains, which represents the first stage in developing a genuinely inclusive approach to assessing the historic environment.

2.2 Why is the historic environment important?

The historic environment makes an important contribution to our quality of life through its role in determining the character of the places where we live and work. It shapes and defines who we are, what we have been and what we could be. It is a source and resource for, among other things, employment, education, understanding and enjoyment. The historic landscape forms the setting for our everyday life. Its natural and man-made variations help define regional and local identity, and provide key historic sites with context and meaning.

The East of England region has a rich and diverse historic environment, But, as everywhere in the country, this legacy from the past is vulnerable to over-exploitation leading to irretrievable losses for future generations. The regional environment strategy for the East of England '*Our environment, Our future'* recognises the pressures which have been placed on this finite and irreplaceable resource. It cites the Council for British Archaeology survey, which identified more towns in the East of England than in any other region whose historic importance requires special care in their planning. The unique character of these towns has been eroded in some cases and remains under threat from roads, town centre redevelopment, out-of-town stores (shopping centers), warehousing, and peripheral housing expansion.

In terms of the more obvious historic assets (i.e. buildings & monuments) it is estimated that 1,000 (or 2%) of the region's listed buildings are 'at risk of decay' (English Heritage 2002). Across the region many ancient monuments have been degraded by a combination of modern farming practices, mineral extraction and development, indeed some 15% of these were totally destroyed between 1945 and 1995 (ibid 2002). Field boundaries have also been lost in great numbers since the 1950s, leaving a less varied landscape with fewer coherent historic features.

It is widely acknowledged that planning of large scale new housing areas in the region has not generally produced results which respected local distinctiveness and character. There is a risk that, once again, the value of historic landscape could be overlooked in the new Growth Area; although, through proper understanding and with due care, new development proposals offer opportunities to achieve a better quality of life rooted in strong local identity and historic character.

2.3 Why should the historic environment be addressed at the strategic planning level?

If development is to be sustainable: building on the strength of local character, it is essential that proper recognition be given to historic environment issues. As with other environmental matters, it is important that the historic environment is addressed as a relevant factor at the outset of any development plan and not just treated as a final site-specific issue (nor as an obstacle!).

If the evolution and character of the area's urban and rural landscapes are understood and analysed early enough, then new development may be more sympathetically planned and designed, drawing benefit from the special qualities of the area whilst protecting and enhancing them. English Heritage and the heritage professional in local government wish to take part in the debate and positively influence the direction of the development –as outlined in the Government's *Sustainable Communities* agenda.

Our aim is to help planners, developers and all levels of government to take the historic environment into account in a new manner, to improve and revitalise the new rural landscapes and townscapes that are being proposed. Full consideration of the whole historic environment, at an early stage, will help to avoid or minimise conflicts that might otherwise emerge unforeseen at later stages of development plan preparation or in Environmental Impact Assessments. This process will make it more likely that new development will reinforce historic character, to enhance quality of life and thus provide successful and attractive places to live.

Appropriate consideration of the historic environment must be applied at all stages in the development process i.e.

- *Where* - In developing overviews to support Strategic Plans, Regional Planning Guidance and Structure Plans (or Regional Spatial Strategies) or sub-regional planning documents; addressing the question '*If-where?*' (*If* a certain level of development is required, then *where* would it be most advantageous?)

- *What* - To inform more detailed assessments to support local plans, or local development documents (LDDs), addressing the question '*What?*' (*What* is the best way to integrate and deliver new capacity within the existing historic and social environment?)

- *How* - To provide understanding to support detailed design/renewal schemes within a chosen development area, and address the question '*How?*' (*How* should the development proceed so as to ensure sustainability within the historic environment?)

2.3.1 Managing change

The landscape is a dynamic and living entity; change has been the norm, at times radical at others subtle, but ever present at varying degrees through time. This will continue to be the case. The historic environment therefore requires a much wider and more flexible response than just trying to select the 'best sites' or 'best areas'. We believe that the most relevant concept is 'managing change'. This concept must run in parallel with selective heritage protection, but it is more flexible and wider ranging. It allows different growth options and patterns of development to be measured against the capacity of the historic environment to accept such changes in a sustainable manner.

The aim is not to stop change, but to influence its nature and to ensure that the best type of change happens, in the right way, to maintain, enhance and create culturally rich urban and rural landscapes to pass on to the future. This requires that we understand the historic environment to make informed decisions affecting it. Whilst this might imply that extensive development should be avoided in some areas in order to maintain important historic character; other areas less sensitive to change may be more suitable for development. Development may be particularly appropriate if it provides the means to enhance or regenerate historic aspects, or to create new elements which will make a positive contribution to local identity and a sense of place.

Nationally designated sites must be protected from loss in new development, but the planning of major townscape and landscape development and regeneration also calls for us to consider buildings, monuments and landscape character without such clearly defined importance. Undesignated archaeological sites and deposits, together with historic features such as the patterns of the built environment or of woodlands, fields and farms are fundamental to our understanding of historic development. They add to local distinctiveness and make an important contribution to local quality of life. All areas, no matter how seemingly altered or new, offer something to the complexity and diversity of the historic environment. The past concept of 'white, blank areas' in between the special historic sites is unhelpful and misleading. As the study in Section 4 demonstrates, all landscapes have some form of historical significance and meaning.

2.4 How can English Heritage contribute?

This document sets out English Heritage's philosophy in relation to the proposed development areas. EH's concern, as mentioned above, is to ensure that change of any scale takes account of the range of ways in which the historic environment contributes to the character of place, and offers opportunities to improve the quality and sustainability of new development.

Proper understanding of the historic environment is necessary to be able to keep the best from the past and create the best of the new, just as good new building, high quality design and thoughtful planning are necessary to maintain and enhance the existing environment. Conventional approaches based on avoiding special sites and buildings are, on their own, inadequate to achieve this, effective though they have proved at protecting individual features. The whole of the historic environment needs to be given an appropriate place in strategic decision-making.

To demonstrate the basis from which such an approach may be developed a sample study area between Stansted and Harlow has been selected in the context of current

planning deliberations. The background to the method is described in Section 3. This sample study area (Section 4) indicates what can be achieved using a new tool – Historic Landscape Characterisation - as a basis for valuing our historic assets and as the framework for the decision making process. Whilst at present the method deals primarily with the historic landscape, we intend to develop the methodology to encompass the whole of the historic environment, and hope that, with the expert assitance of Local Authority archaeological staff, the relevant delivery agencies will adopt the approach across the whole Growth Area as plans develop.

3. Examining the historic environment of the Growth Area

3.1 Previous Methods

A range of existing and modified historic and archaeological records may be used to investigate the historic environment, and to define patterns of historic development, coherence, significance and social benefit as a guide to the growth area assessment process. Previous methods of assessing the impact of development over large areas used to rely on 'dots on maps' – patterns of site specific 'heritage assets' such as scheduled monuments and listed buildings. These patterns are easily generated but may be misleading. They are important data for some purposes (e.g. to guide development away from particular constraints), but at a strategic level it is an all too limited approach – leading to decision-making based on inadequate and incomplete data, magnifying weaknesses of present knowledge and the flaws of past practice, preventing holistic approaches and encouraging negative rather than positive responses to change.

3.1.1 The limitations of the 'heritage asset' approach to spatial planning.

Patterns of two well-established heritage assets (scheduled monuments and listed buildings) are shown in ***Figures 2 & 3*** within the study area, which is examined, in greater detail in Section 4.

The schedule of monuments

Individual Schedule entries provide clear guidance about the sensitivity of particular locations, but the pattern revealed by plotting them all is neither an accurate nor a particularly informative indicator of the historic environment. The value of the pattern is limited by various factors.

Firstly the Schedule is invariably composed of comparatively small entities – definable 'sites' - which rarely have a significant impact at a landscape scale. With a few notable exceptions (e.g. Waytemore Castle, Bishop's Stortford) most of the scheduled monuments are far from readily visible and consequently, whilst in their own terms significant, have a limited influence on the historic environment, as most people perceive it, for most of the time.

Secondly the pattern is only a partial reflection of the nationally important resource. The early designation process (which dates back to 1882) concentrated on comparatively obvious monuments of particular period and types, such as hillforts and barrows. Over the years the scope has broadened to become more representative, but it is still a 'work in progress'. Some categories, such as moated and monastic sites and 20th century military installations are quite well represented; others, most notably Roman occupation sites, are not (see ***Figure 2***).

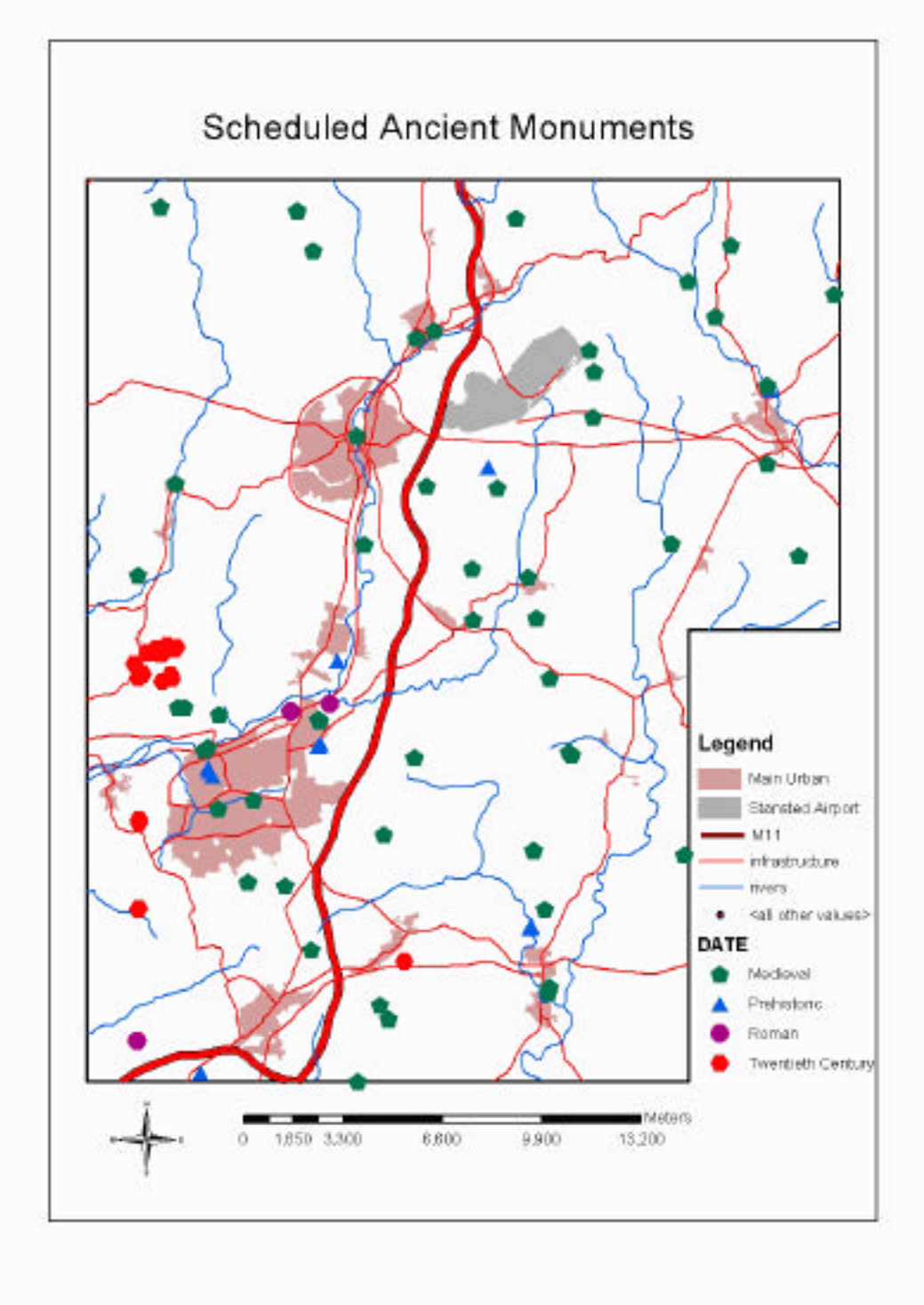

Figure 2. Scheduled monuments within the Study Area:

The schedule does not identify known national important sites prior to formal designation, nor those which have already been assessed and judged to be more appropriately managed by other means. Even at its best the schedule is limited by current archaeological knowledge, and may alter as new sites are discovered. These missing elements undermine any attempt to derive meaningful patterns from scheduled monument distribution.

Listed Buildings

A distribution of Listed Buildings (***Figure 3***) provides some indication of the historic settlement pattern within the study area. It shows an unusually high background pattern of scattered historic farm buildings and dwellings which reflect the dispersed nature of historic settlement in the area, particularly in Uttlesford District which alone contains one third of all the listed buildings in Essex. The clustering of List entries is a useful indication of smaller historic settlements and the historic cores of the larger villages and towns.

However, as with scheduled monuments, this pattern must be treated with caution. The process of Listing is far from comprehensive, and gaps on maps do not necessarily equate with voids in the historic resource. Equally the apparent clustering of entries can be enhanced by multiple components relating to a single holding (i.e. residence, outbuildings and boundary structures) and require careful analysis to avoid undue influence in the distribution.

Listing is a selective process and the pattern of designations will reflect this. The List includes nearly all buildings constructed before 1700 and many dating between 1700 and 1840. Later buildings, those dating up to and beyond 1914 must exhibit a range of particular or outstanding attributes in order to qualify. More ordinary, commonplace or 'vernacular' examples, particularly from later periods, tend to be under-represented.

Finally, although buildings (vernacular forms in particular) make an appreciable contribution to the character of the historic environment, the pattern of individual structures provides no real indication of the condition or character of their surroundings - whether they are part of a recognisable historic landscape, or merely survive as the last historic features within a much altered setting.

3.1.2 Broader frameworks for historical analysis

In summary, the Schedule and the List have an important role in protecting key heritage assets and will doubtless prove influential in later, more targeted stages of the planning process. However, the overall pattern and profile of monuments and buildings, and indeed of other features such as historic parks and gardens is a poor guide to the sensitivity of the wider historic environment – incomplete, sometimes limited in appreciable public value, somewhat unrepresentative and subject to change.

It is possible to moderate the more questionable aspects of these patterns by placing them within broader analytical frameworks. The Key Issues report for the M11/Stansted corridor does exactly this – using Landscape Character Assessment (LCA) areas defined by the local authorities or by the consultants themselves to provide the context for the site-specific information (Buchanan & Partners 2003b). This is a welcome development, which goes a considerable way towards an holistic assessment of the landscape, but it still cannot address clearly the fundamental structure of the historic environment.

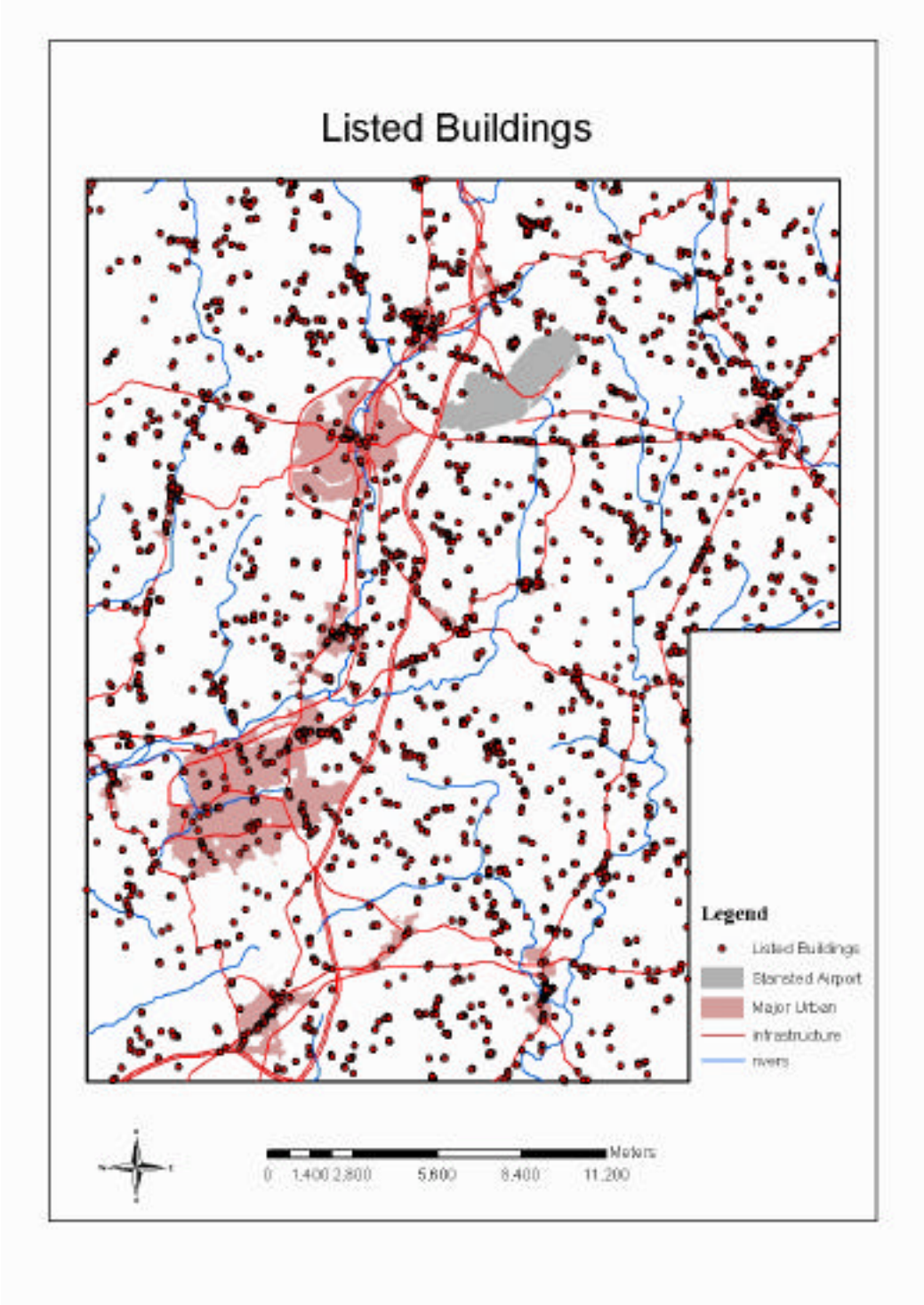

Figure 3. Listed Buildings within the Study Area

Even within the framework of LCA the study truly recognises only those historic elements, which are already designated – a far cry from the full range of features, which characterise the historic environment. A few examples taken from the maps of possible partial and absolute constraints in the Key Issues Report illustrate this point. For example, areas identified as 'Common Land' provide a partial reflection of the pattern of historic commons, many of which are not longer legally designated but

remain as recognisable elements of the landscape. The identification of parklands, similarly, is based on easily recognised examples (the Register of Parks and Gardens and other sources) and fails to realise the potential impact of former parkland, fragmented and degraded, perhaps, but still a powerful influence in the modern landscape. Surviving Ancient Woodland (dating from before 1600) has been comprehensively mapped by English Nature and appears in the constraint analysis. But its relevance to the historic landscape is more than just a simple matter of survival. It is the presence of ancient woodland, and woods of other periods, within the context of field patterns and other historic features that matters and provides real insights into the development of the landscape and the value of its present historic character.

The underlying unit of assessment (LCA) is a useful tool, not least as historic elements are included within the characterisation matrix. But it is not sufficiently grounded in the historic dimension of landscape to provide a detailed supporting framework for the further analysis of historical or archaeological data. Historic Landscape Characterisation, based on the comprehensive analysis of the landscape's origins, development and surviving historical characteristics, does provide the appropriate level of understanding, and a proper foundation from which a genuinely holistic approach to the historic environment can be developed.

3.2 What is Historic Landscape Characterisation?

The process of broad-brush landscape characterisation developed by the Countryside Commission (now the Countryside Agency) is now widely used by local authorities and other national agencies to gain an appreciation of landscape issues. Historic Landscape Characterisation (HLC) was developed by English Heritage to enhance knowledge and the effective management of the historic aspect of landscape – providing 'a practical and robust method' to overcome acknowledged limitations in the general practice (Countryside Agency and Scottish Natural Heritage 2002).

The HLC approach offers comprehensive, seamless coverage of the landscape, emphasising the human processes that have led to, and remain evident in its current appearance. The primary aim of HLC is a consistent model of the historic landscape that is as transparent as possible, inclusive, repeatable, and above all comprehensive (i.e. no un-mapped 'white, or blank, spaces'). It involves bringing together existing, usually hitherto unconnected information, normally at a high level of generalisation, to provide an understanding of the essential characteristics of the chosen study area. The initial product of HLC, like that of more general Landscape Characterisation, is descriptive and value-free. However, unlike other forms of characterisation, the HLC product is founded on the historical and archaeological dimensions of the current landscape and is therefore far better placed to serve as the analytical framework for further study and management of this resource.

The national programme of HLC projects, which began in the mid 1990s now covers nearly half the counties of England. In both Hertfordshire and Essex the process of data collection and mapping is complete and this information is used for the sample area study explored in Section 4. A similar process is underway in Cambridgeshire and the results will be available to inform study of the northern LSC corridor early in 2004.

3.2.1 The HLC method

The landscape is assessed by looking at all its component features (for example fields, woodland, parklands, mineral extraction, industrial and urban areas) and by determining their origin and development through morphological analysis supported by documentary evidence, old and modern maps and other sources such as aerial photography. This information is compiled within a Geographic Information System (GIS) resulting in an intelligent electronic map, which enables sophisticated analysis and interpretation.

By examining the differences between early and modern cartographic sources we can map and assess changes within the landscape through time. It is important to emphasise that the HLC methodology mainly records those historic patterns that are still visible and mapped within the landscape, whether as dominant forms or less obvious indications of past land use. However, by examining these patterns (using a system of GIS analysis to identify areas of similar characteristics) we can define the 'time-depth' of the landscape, specifically:

- The age of different landscape features
- Areas which have remained relatively static (little changed through time)
- Areas have undergone many alterations
- Radical change - areas in which later changes have removed significant evidence of earlier stages in landscape development.
- Subtle change - areas where later changes are nested within earlier landscapes resulting in composite landscapes or 'palimpsests'.

3.3 The value of the HLC approach

The HLC is a first attempt at assessing the rural landscape in historic terms. This enables the broader characterisation of the landscape, and the identification of rare or regional or local variants. In themselves the results of HLC are neutral: providing a descriptive model of the broad grain of the historic landscape, as it is perceived today, without placing emphasis on any particular aspect. However, HLC can easily form the foundation for the development of value-led models reflecting the sensitivity of the overall historic environment through incorporation of more traditional historic environment data sets such as Sites and Monuments Records, Listed Buildings, Scheduled Monuments or Conservation Areas (Fairclough 2002).

Such a methodology (as explored in Section 4) is particularly applicable to decision-making in response to proposals for change. Firstly, the approach takes a step back from issues of significance and importance to produce a new, geographically comprehensive and generalised overview of historic character. In the second stage the HLC model is refined to provide a baseline sensitivity assessment. This assessment can then be used as a template, which is particularly relevant to the analysis of other site-specific heritage data - for example to highlight particular archaeological and historic sensitivities, or to guide the assessment of local issues within a Quality of Life Capital approach.

4. The Stansted-Harlow Area Case Study.

4.1 Overview of the Study Area

In order to investigate methodologies and provide rapid advice on one of the main development foci along the London-Stansted-Cambridge corridor, the area around Harlow, Bishop's Stortford and Stansted, including adjacent towns and villages, has been chosen as a sample study area

The HLC method is developed in detail within the limits of the sample area. In other respects, however, this is an indicative study rather than a fully developed method or model. Time constraints have not allowed the assimilation of further historical and archaeological sources, the full range of which must be employed for further versions of this model and refined in relation to particular development zones. Although this case study is largely based upon the rural environment, the methodology is equally applicable, at a more detailed scale, to urban areas and historic town cores.

The study area incorporates centres of recent development and urban expansion (Harlow, Bishops Stortford, Stansted), medium sized settlements (e.g. Great Dunmow and Sawbridgeworth) and a broad swathe of villages and more dispersed settlements within the rural hinterland. It extends from Epping in the south to Elsenham and Henham in the north, westwards towards Roydon and the Hadhams and eastwards to Chipping Ongar, the Rodings and Great Dunmow, forming an asymmetrical box 30km north to south and between 20 and 25km east to west (***Figure 4***).

The study area covers some 675 square kilometres, which, for comparison, is roughly equivalent to one sixth of the total area of Essex. Some 75% of the areas, the eastern and southern sectors, lie within Essex - more specifically within the districts of Uttlesford to the north and Epping and Harlow to the south. The northwestern quadrant, west of the River Stort, includes part of East Hertfordshire District.

The superficial geology is principally chalk to the north west, and clayland to the south east, divided by a narrow band of sand and gravel beds on a diagonal line passing Sawbridgeworth and Bishop's Stortford, and bordered to the south by the Bagshot Sands around Epping. The principal topographic features within this landscape are:

- The low chalk hills to the north and west of Bishop's Stortford, broken by the valley of the River Ash through Widford and the Hadhams, and falling to the watershed of the River Cam (or Granta) near Henham to the north.
- The East Anglian clayland plateau east of Bishop's Stortford and Harlow, broken by the shallow valleys of the Cobbins and Pinsey Brooks, the River Roding and the River Chelmer.
- The valley of the River Stort to the east of the M11.
- The wooded hills and ridges to the south near Epping.

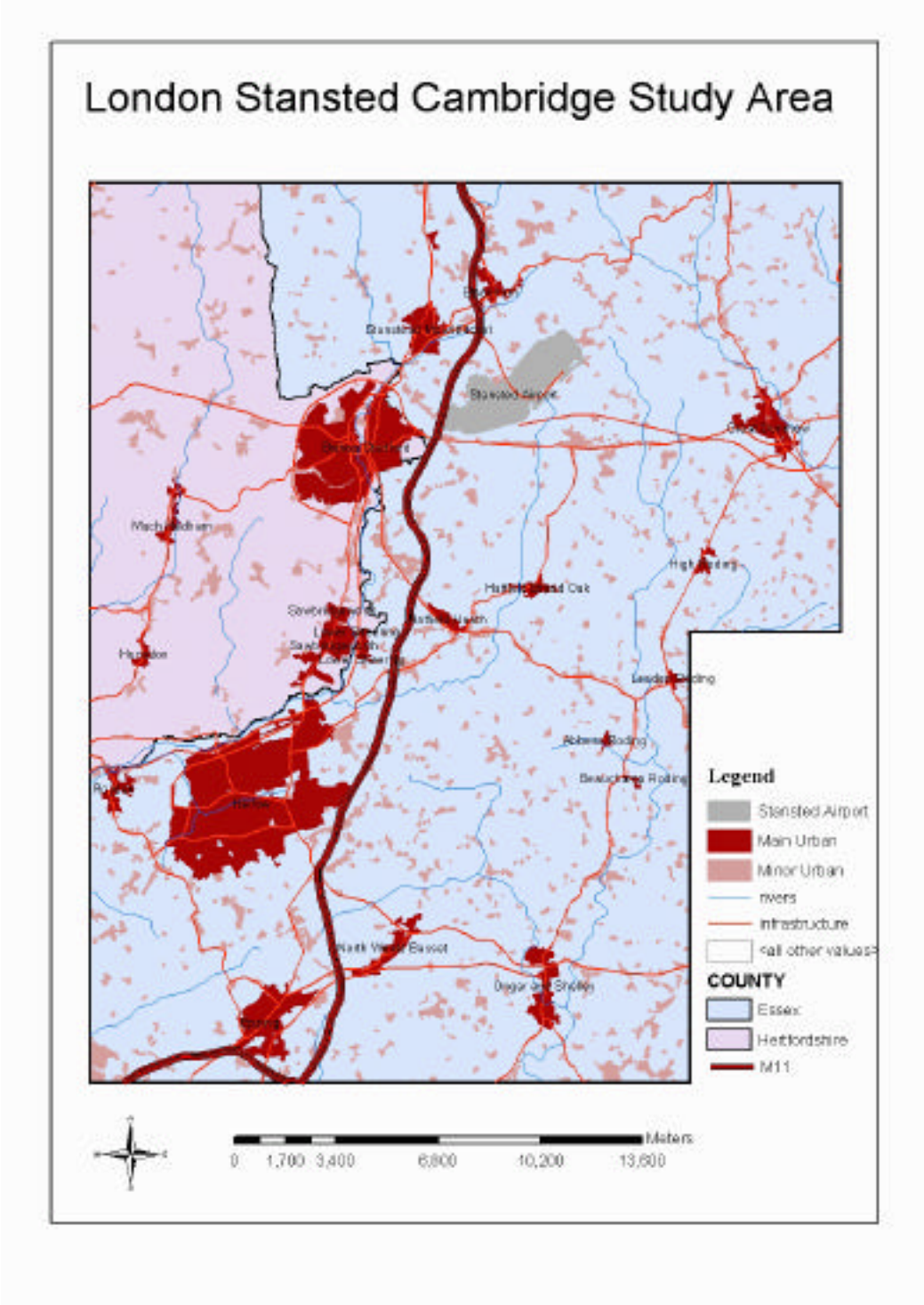

Figure 4. The Study Area

4.1.1 The archaeological and historical context

The study area straddles a complicated intersection of historic settlement and land use patterns long recognised by scholars (e.g. Hoskins 1955, Rackham 1986) and recently examined through a comprehensive national study (Roberts and Wrathmell 2000).

The chalk uplands to the west of the River Stort retain elements of medieval open (boundary-less and communally farmed) fields more commonly found across the central and eastern Midlands. Their occurrence this far south and east is unusual; so too are the related patterns of small, nucleated settlements found in this part of the study area. The chalk uplands here, and in adjacent areas of East and North Hertfordshire, contain extensive buried archaeological evidence for prehistoric and Romano-British occupation. However, despite prolonged occupation, dense woodland was reported over wide areas in the late 11th century (at the time of Domesday). These were opened to further colonisation and settlement in the 12th and 13th centuries resulting in patterns of isolated settlements, small hamlets and small 'green' and 'end' villages which are still a dominant feature of the landscape.

The plateau of glacial till that covers the central and eastern part of the study area and continues eastwards into Essex and Suffolk was also heavily wooded in the early medieval period. The process of colonisation (assartment) resulted in a highly dispersed settlement pattern of small hamlets and steadings (many of which were moated) linked to roadside commons and surrounded by irregular patchworks of fields, pockets of retained woodland and, prior to modern clearances, dense woody hedgerows. Larger villages and market towns developed further to the east and northeast as a result of the late medieval and early post-medieval wool trade. In the study area only the historic 'bay and say' cloth town of Great Dunmow and (to a lesser extent) the medieval town at Hatfield Broad Oak, followed this trend (Medlycott 1998 d&e). Other notable elements of the plateau include the Roman roads leading west and southwest from Great Dunmow, surviving ancient woodland at Hatfield Forest, and several military airfields dating from World War II. Archaeological investigations prior to the expansion of Stansted Airport and the A120 improvement identified a significant density of prehistoric, Roman and medieval settlements and associated field systems. The whole plateau is very likely to contain extensive evidence of this nature.

The river valleys that cut through the main plateau and the chalk uplands may have provided the most accessible and favourable areas for occupation before the major clearance of the adjacent wooded claylands. They certainly contain some of the area's most important prehistoric archaeological resources (the Sawbridgeworth causewayed enclosure, for example), as well as towns and villages with very early origins and long histories. Harlow, Bishop's Stortford and Sawbridgeworth within the Stort Valley are built over the remains of small Roman towns or wayside settlements, and together with Gt. Dunmow on the River Chelmer emerged as Saxon vills, marketplaces and significant manorial centres in the 9th or 10th centuries. (Hoskins 1988, 81, Hunn 2000).

The southern edge of the study area touches the wooded hills and ridges, sometimes referred to as the 'Bagshot Hills', which form the northern rim of the London basin. Once again this area was heavily wooded in the early medieval period and subsequently cleared to form a pattern of extensive commons and a patchwork of small enclosures. The dispersed and isolated settlements in this area profited from the medieval planned settlement at Epping and latterly London's increasing demand for agricultural produce. The known archaeological resource in this is very mixed, including Iron Age hillforts (e.g. Ambresbury Banks within the study area), Roman roads, moated sites and 20th century military remains, although limited opportunities for archaeological excavation and high levels of tree cover (preventing aerial survey) are reasons to suppose that the current pattern underplays the true picture.

More modern changes in the landscape largely reflect the proximity of the area to London and the impact of urban expansion of the later 20th century. The present

study does not examine urban areas in any detail as these are more effectively considered through detailed studies such as the programme of Extensive Urban Surveys (Medlycott 1998a-e, 1999; Hunn 2000, Seddon & Bryant 1999). It is worth noting, however, that all the towns in the area contain rich and varied historical and archaeological resources that reflect their origins and add significantly to local character and a local sense of identity. The later medieval cores of towns such as Great Dunmow, Harlow, Bishop's Stortford and Chipping Ongar developed as staging posts along routes from the capital, and saw flourishing local industries (cloth manufacture, glove making, pottery and brewing) from the medieval period through to the 19th and early 20th centuries. Buildings from these periods of growth and wealth provide much of the historic quality of the region's townscapes. But not everything that is valued is particularly ancient. For example, the planned expansion of Harlow from 1947 onwards includes important elements of post-war urban design, which are now in themselves of considerable historic interest.

Since the 1950s the rural landscape has been subjected to increasing demands. Incentives to increase productivity through greater mechanisation and intensive farming have resulted in considerable boundary loss and the widespread erosion of historic fieldscapes across large parts of Essex and the adjoining counties. Fragmentation of older landscapes has also resulted from urban intrusion (e.g. bypasses and motorways) forcing the reorganisation of historic patterns. The particular concern of this study is to identify where these forces have changed the historic character of the landscape (and in what measure), and where the earlier landscapes survive in a readable and appreciable form.

4.2 The HLC Approach

4.2.1 Applying Historic Landscape Characterisation

The HLC approach, as outlined in Section 3, provides a comprehensive survey of the time depth visible in the present landscape, at a scale suitable for broad spatial analysis.

The study area uses maps and other digital data compiled from the existing HLC projects in Essex and Hertfordshire. These data, in turn, are derived from the analysis of the sources listed in ***Table 1***:

Core Data
• OS 1st edition 6" maps
• OS 1st edition 2" surveyors maps
• OS 1950s 6" maps
• OS 'Pathfinder' 1:25,000 maps
• OS 1:10,000 Raster Map
• OS Land Line Data
• Vertical Aerial Photographs
Ancillary Data
• Bryant County maps 1825
• Ancient and Semi-Natural Woodland Data
• EH Register of Parks and Gardens
• Geological Survey Maps
• Countryside Character Areas

• Selected enclosure and tithe maps
• Selected sale documents and estate plans

Table 1: Sources used in the construction of the Essex and Hertfordshire HLCs.

The overall HLC map (***Figure 5***) does not ascribe any values to the various components of the landscape; rather it portrays the landscape in terms of dominant attributes and characteristics based on modern and historical map information, field morphology and archaeological interpretation. Each mapped unit, or polygon, is ascribed to one of thirty-two current HLC landscape types applicable to the area (***Table 2***). Relict elements are also incorporated within the database. Together these constitute a range of ancient and more recent landscape forms that provide complete coverage of the study area.

Landscape Groups	Landscape Types (shown as coloured polygons in *Figure 5*)
Enclosures	PRE-18TH CENTURY 'CO-AXIAL'ENCLOSURE
	PRE-18TH CENTURY 'ORGANIC' ENCLOSURE
	PRE-18TH CENTURY 'IRREGULAR SINUOUS'ENCLOSURE
	PRE-18TH CENTURY 'RECTILINEAR' ENCLOSURE
	ENCLOSED MEADOW PASTURE
	FORMAL PARLIAMENTARY -18TH CENTURY AND LATER ENCLOSURE
	POST 1950'S ENCLOSURE
	PRAIRIE FIELDS (POST 1950'S BOUNDARY LOSS)
	20TH CENTURY STUD FARM
Woodland	ANCIENT WOODLAND
	19TH-20TH CENTURY PLANTATION
Open Land	COMMONS WITH AN OPEN MARGIN
	COMMONS WITH A BUILT MARGIN
	MARKET GARDEN
Land Use	UNIMPROVED ROUGH PASTURE
	RESTORED LAND
	WATER MEADOWS
	NURSERY WITH GLASS HOUSE
Settlement	BUILT-UP AREAS
Communications	AIRPORTS
	MOTORWAYS RAILWAYS
Industrial	DISUSED INDUSTRIAL
	INDUSTRIAL
	MINERAL EXTRACTION
Parks/recreation	20TH CENTURY LEISURE
	INFORMAL MEDIEVAL PARKLAND
	FORMAL POST-MEDIEVAL PARKLAND
	MEDIEVAL DEER PARK
Civic	HOSPITALS, SCHOOLS, UNIVERSITIES
Military	POST-MEDIEVAL MILITARY
	WW II MILITARY – DISUSED
Religious	RELIGIOUS INSTITUTIONS
Water	WATER RESERVOIRS & PONDS

Table 2: List of landscape groups and types used in constructing the HLC map

The coloured areas (polygons) in ***Figure 5*** indicate areas of shared attributes, for example groupings of fields with similar origins, which retain the same level of historic features. In all but one case the internal divisions within these polygons (e.g. individual field boundaries) are not shown. Post 1950 enclosures (dominant yellow) are the exception. Internal boundaries within these areas are mapped to provide comparison with earlier maps and an assessment of the former patterns from which these larger fields were created.

4.2.2 HLC patterns

The pattern of historic landscape types shown here provides considerable insight into the historic environment within the study area. It is dominated by elements which Rackham (1988, 4-5) defines as 'ancient countryside' - long established patterns of irregular fields related to scattered settlement, with little evidence of the 'planned countryside' of medieval open-field cultivation, or the 'drawing board' landscape laid out under the Enclosure Acts in the eighteenth and nineteenth centuries.

The greater part of the southeastern area (east of the M11 and south of the A120) is dominated by modern so-called 'prairie fields' resulting from increased mechanisation since the 1950s and the removal of field boundaries to enable more efficient arable farming (dominant yellow). Boundary loss in this area is severe; however, the historic origin of this landscape has not completely vanished. It survives in the irregular outer boundaries, some flanking the lanes between scattered settlements and, as the HLC clearly shows, in limited patterns of surviving pre-18th century fields - patterns of informal and irregular enclosure existing prior to the 18th century, but with origins in the early post medieval or medieval periods (mid blue).

These earlier patterns are most notable surrounding Hatfield Forest, following the Cripsey Brook north west of Chipping Ongar, on the line of the Roman road south of Gt. Dunmow, and further south across the Rodings. Ancient woodland survives in numerous small pockets throughout this area - its distribution seemingly related to the dispersed pattern of historic settlement and the valleys formed by streams and small rivers. Wood pasture also occurs, mainly in the expanse concentrated within Hatfield (former royal) Forest and the adjacent woods south of Great Hallingbury. Medieval parks and their post medieval successors can be seen at Hallingbury Park, to the south east at Barrington Hall (Hatfield Broad Oak) and further south at Down Hall (Matching) and Blake Hall (Bobbingworth).

Pre 18th century enclosed fields are more pronounced in the northern part of the study area - on the chalk uplands in East Hertfordshire, north and west of Bishop's Stortford where the landscape was previously thought to have a greater dominance of open field relicts (Roberts and Wrathmell 2002), and extending across the clay plateau surrounding Stansted airport towards the former WWII airfield at Little Easton. Here the 'prairie' fields are in a minority, and include a higher proportion of examples whose surviving boundary features denote their origins as smaller disaggregated units.

The clearest division, however, follows very closely the Essex/Hertfordshire boundary. The Hertfordshire landscape, on the southern chalk uplands, across the watershed between the Rivers Ash and Stort and within these valleys has the highest proportion of late 18th and 19th century enclosure within the study area. This pattern seems to have largely derived from private agreements, which resulted in somewhat less rigorous field patterns than those created under local Enclosure Acts in neighbouring Cambridgeshire and elsewhere to the north and east. It speaks of a pre-existing pattern of small-nucleated settlements and sizeable manor-farms (both

of which known from other evidence), whose irregular fields were susceptible to this level of rationalisation.

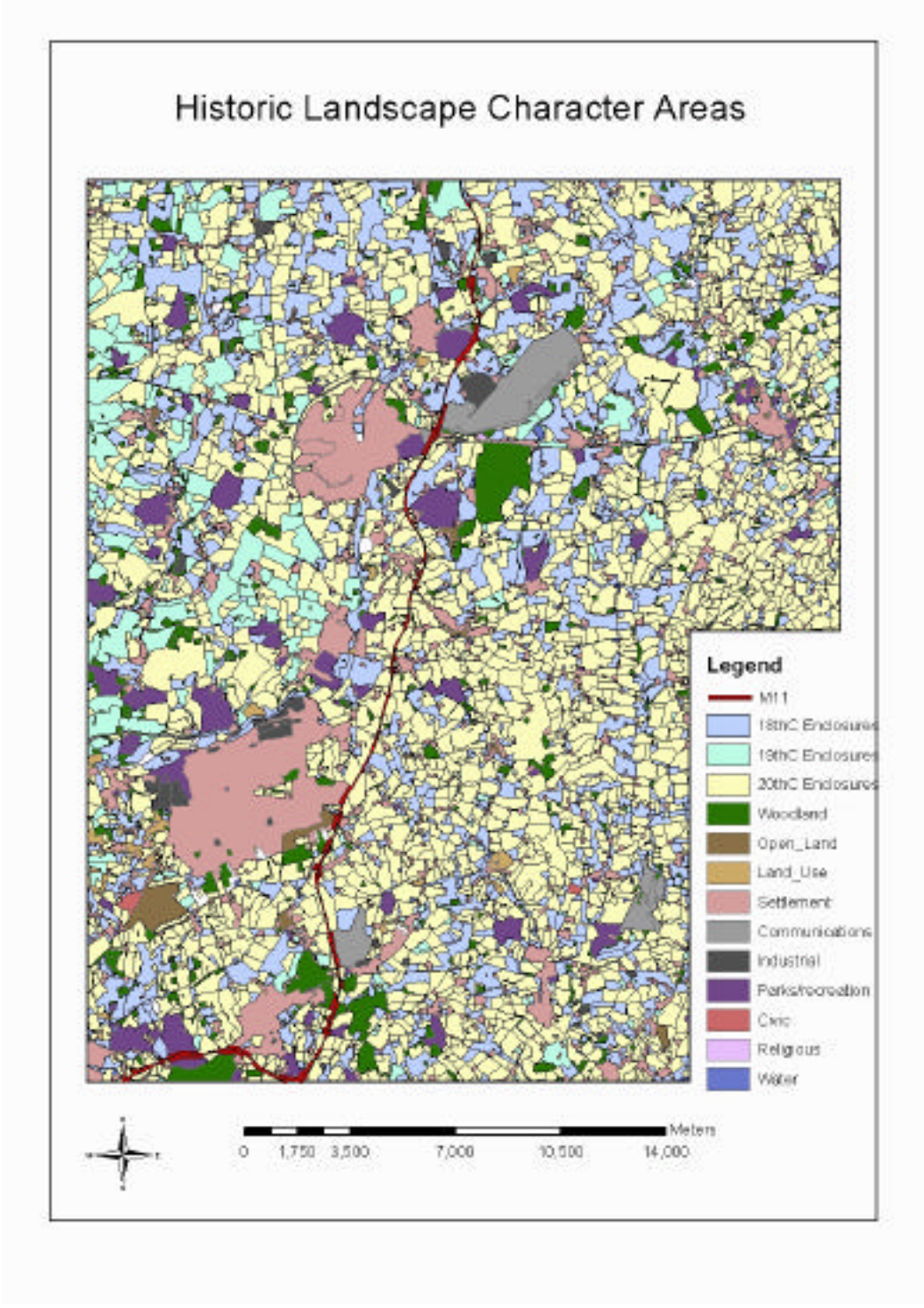

Figure 5. Historic Landscape Characterisation mapping – principal HLC types (see Table 2 for more detailed explanation of legend).

The Stort Valley itself is dominated by modern built-up areas shown in pale red – Harlow, Sawbridgeworth, Bishop's Stortford and Stansted Mounfitchet - flanked to the east by the M11 and a string of modern fieldscapes which were reorganised following its construction. The urban centers lack internal discrimination at this scale, although this study does highlight characteristics of the 'edgelands' (or peri-urban), of these urban areas and of the adjacent river valley.

A principal component of the riverside landscape is enclosed meadow pasture (mid blue) punctuated and framed by fragments of ancient woodland (green). This forms a distinctive band along the northern edge of the Harlow conurbation, through Sawbridgeworth and Stortford (broken only by the southern, more recent development of the town) and northwards to the west of Stansted Mountfitchet. Former medieval parklands (purple) also contribute to this landscape at Pishiobury (Sawbridgeworth), Gilston to the south and Manuden to the north.

To the west of Harlow a fragmented pattern predominates, consisting of small villages and hamlets, horticultural holdings and nurseries interspersed with areas of irregular pre-18th century fields. The southern margin of Harlow is flanked by open commons (Nazingwood Common and Harlow Common), greens and woodland pockets indicative of medieval assartment from the now much reduced Epping Forest further to the south . Wooded parklands also feature in this southern area, as well as areas of pre-18th century fields and post-1950 field systems, which reflect phases of earlier farming and later farm engrossment and arable development.

The study area extends on to the higher ground to the south around Epping, where the HLC captures the northern end of Epping Forest and more isolated fragments of its former extent to the east of the M11. The impact of the M11 and the M25 is again visible in the patterns of modern reorganised fields to either side of the junction.

4.2.3 Time depth

The 'current' and 'previous' landscape attributes recorded in the HLC database allow these spatial patterns to be drawn apart and examined in greater chronological detail.

Figure 6 depicts the patterns of fields, woods and parkland (pale blue), which survive today largely unchanged since the 18th century (many or most of which have origins that stretch back to the medieval period), as well as areas which have seen subsequent alteration but still retain recognisable characteristic elements (pale grey).

Figure 7 takes the picture forward to the 19th century, showing the alterations wrought in this period – piecemeal amalgamation of earlier enclosures, new woodland plantations and parklands and alterations to pre-existing features of this type (lavender). Once again areas are shown which have undergone later change but still retain significant recogniseable elements of the landscape of this period (pale green).

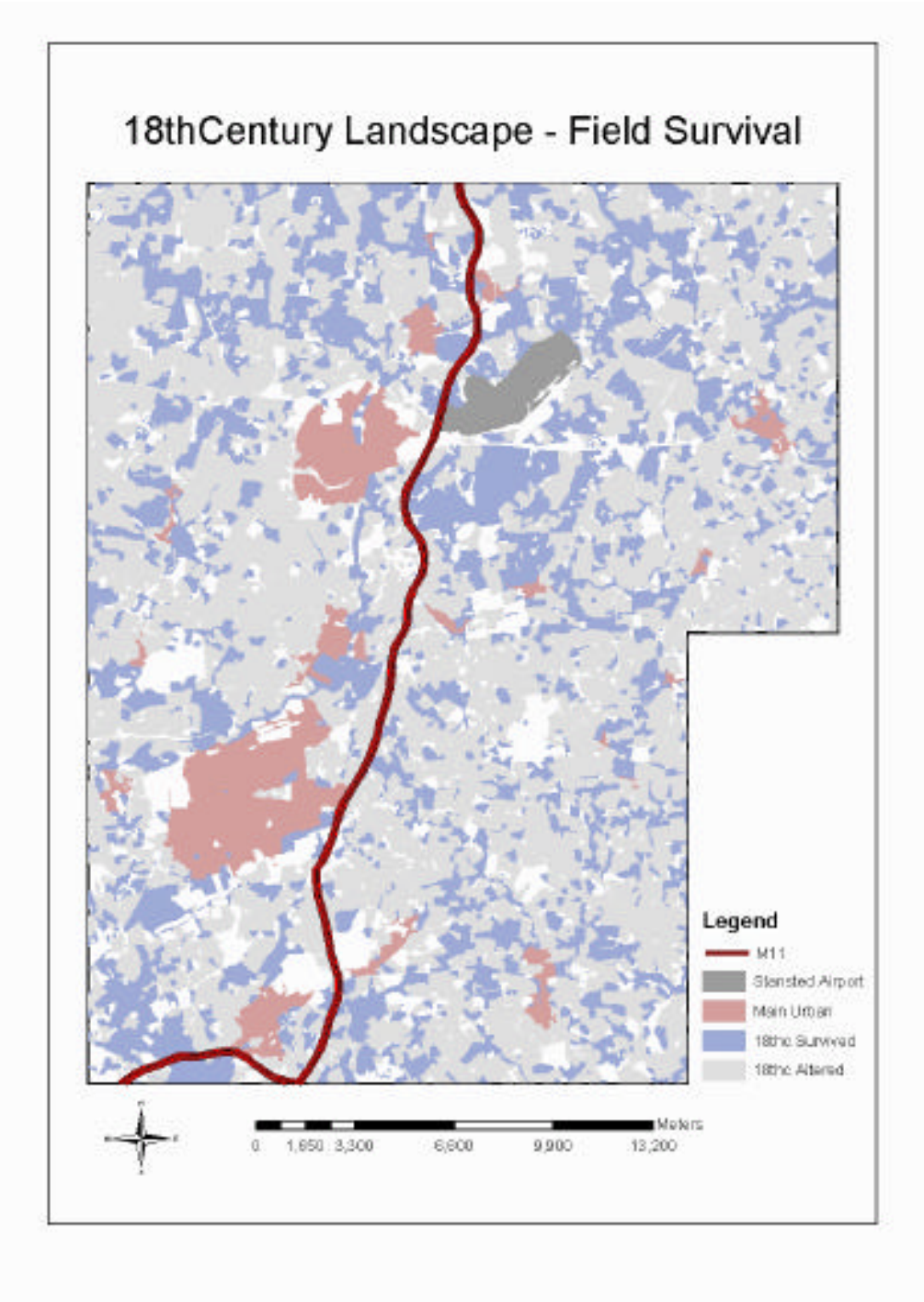

Figure 6. 18th century landscape

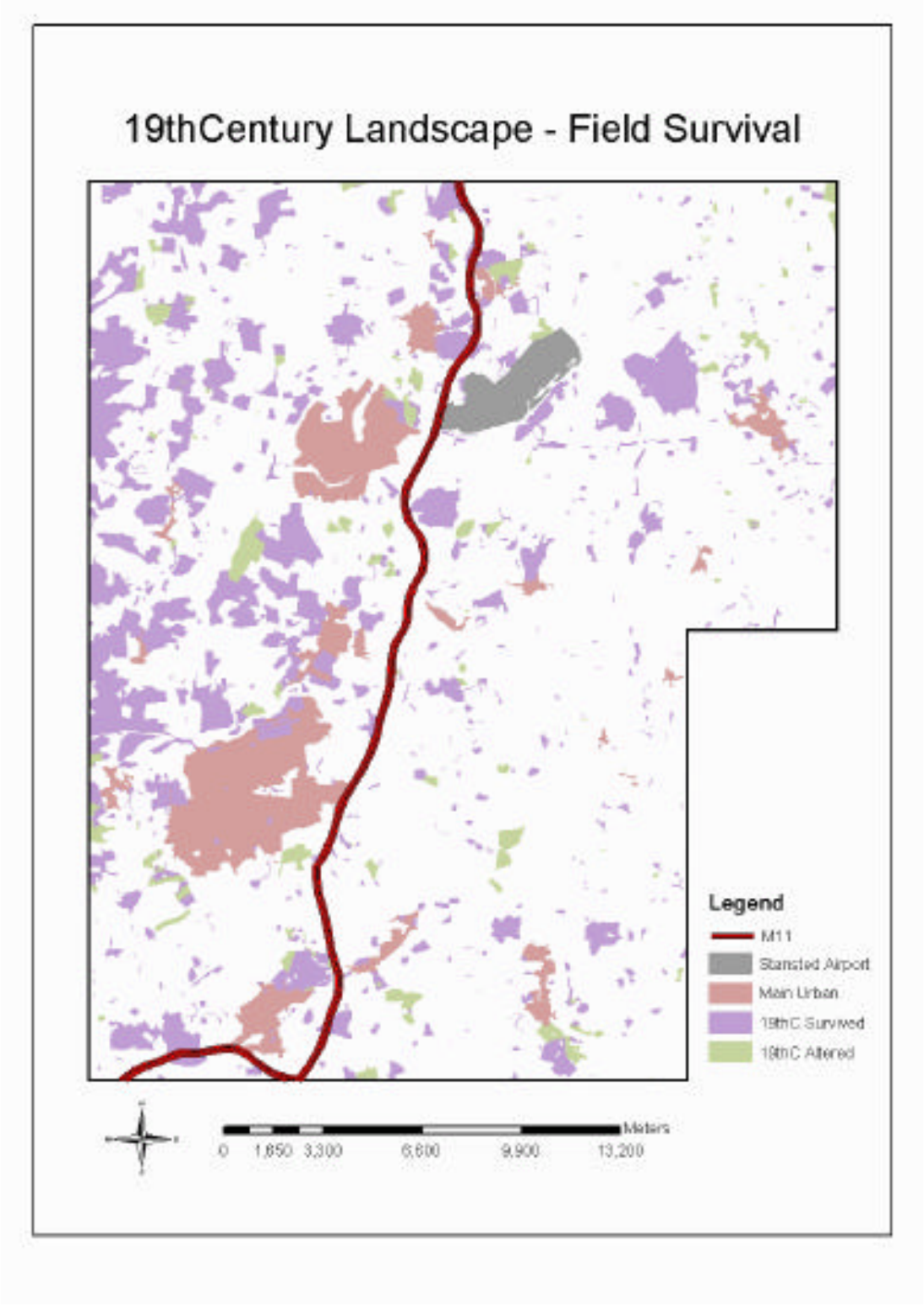

Figure 7. 19th century landscape

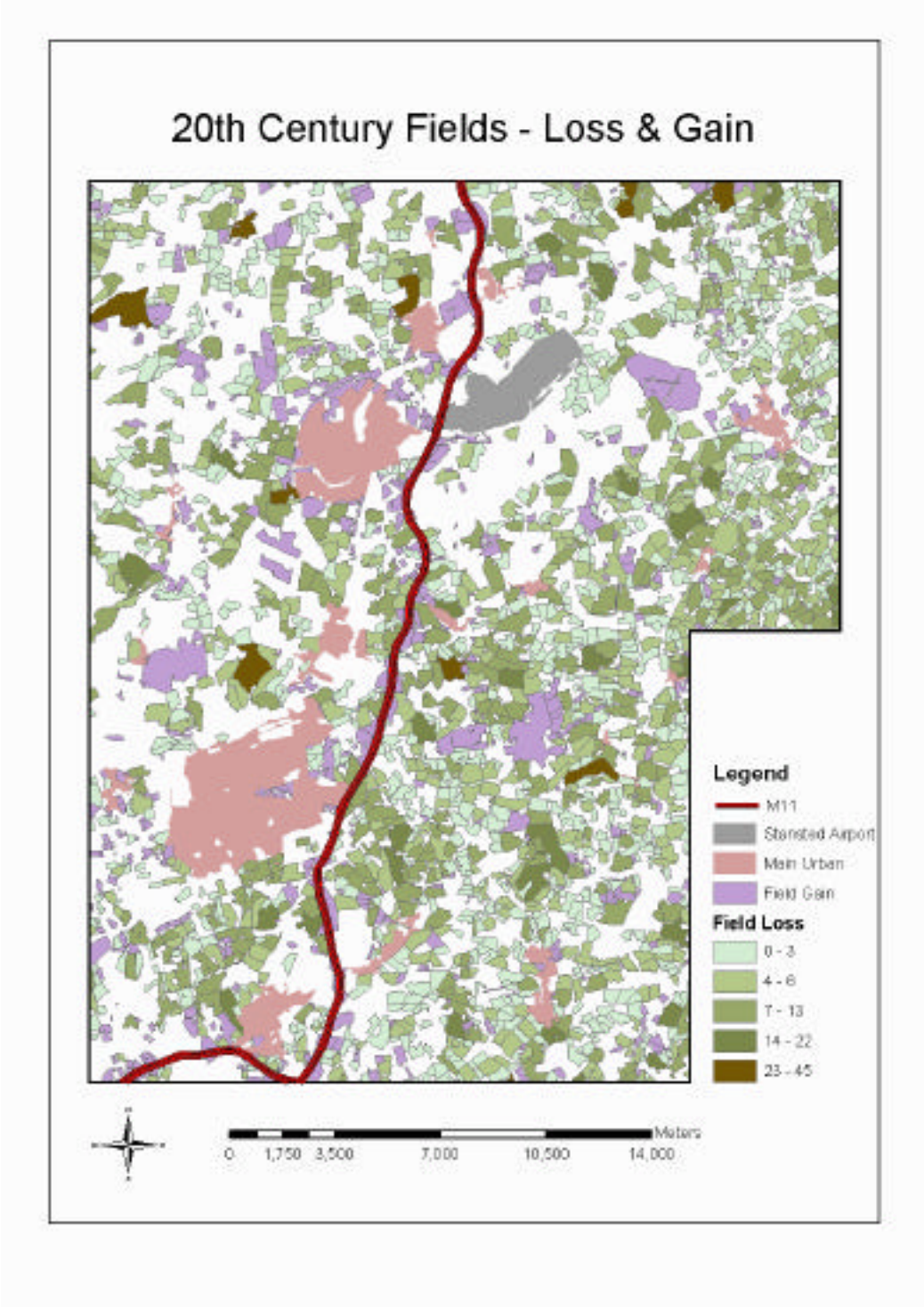

Figure 8. Loss and gain of field boundaries in the 20th century

Figure 8 portrays the most recent chronological events affecting the pattern of historic land use. Alterations to the area's field patterns - the broadest historic grain of the landscape – are noted according to the degree of boundary change during the second half of the 20th century. In the majority of cases boundaries were removed to allow increased mechanisation and agricultural productivity; in others, the former field

patterns were disrupted as a result of new or improved road schemes and/or urban expansion. The areas largely unaffected by these changes correspond to the earlier and more static landscapes shown in ***Figures 6 & 7***.

4.2.4 HLC model summary

The HLC model of the historic landscape within the study area can, in summary, be subdivided into six distinctive areas of historic landscape character:

- The south eastern half (east of the M11 and south of the A120) characterised by modern expanded arable fields, but retaining clusters and linear arrangements of earlier fields related to the historic settlement pattern

- The northern band in which the earlier, pre-18th century (but probably medieval in origin) field pattern is still the dominant factor

- The East Hertfordshire landscape characterised by late (18th and 19th century) enclosures, within an earlier pre-existing pre 18th century pattern.

- The linear pattern of enclosed meadows, woodland and parkland within the Stort Valley, abutted and overlain by modern urban development

- The fragmented horticultural landscape to the west of Harlow.

- The commons, greens and woodlands south of Harlow rising to the Epping ridge.

The model shown in ***Figure 5*** is a more accurate and meaningful depiction of the historic landscape than those produced through general landscape character assessments. It also provides a more appropriate basis for the next step: the incorporation of additional data sets and application of values in order to assess the sensitivity of the historic environment - its capacity to absorb or benefit from change.

4.3 Mapping Sensitivity

HLC alone cannot provide all the answers to the question of landscape sensitivity, but it does provide an instructive model portraying the more visible and appreciable dimension of the historic landscape. The visible historic fabric of the landscape is often the central element in a 'sense of place', supporting the feeling of continuity which can play a vital part in sustainable communities.

4.3.1 HLC sensitivity mapping

The approach to ascribing sensitivity values to HLC patterns has already been explored for a small area in the recent Essex and Southend-on-Sea Structure Plan Review (Blandford Associates 2002), which incorporated HLC data with SMR derived data in an attempt to develop a holistic approach to sensitivity mapping of the historic environment. A variation of this method is employed in this report. In the first instance a sensitivity model is developed from the basic HLC data.

The sensitivity of the historic landscape, as depicted in ***Figure 9,*** *is* derived from a ranking system applied through a professional assessment of the HLC types

described above, both as historic artifacts and as significant components of the modern landscape.

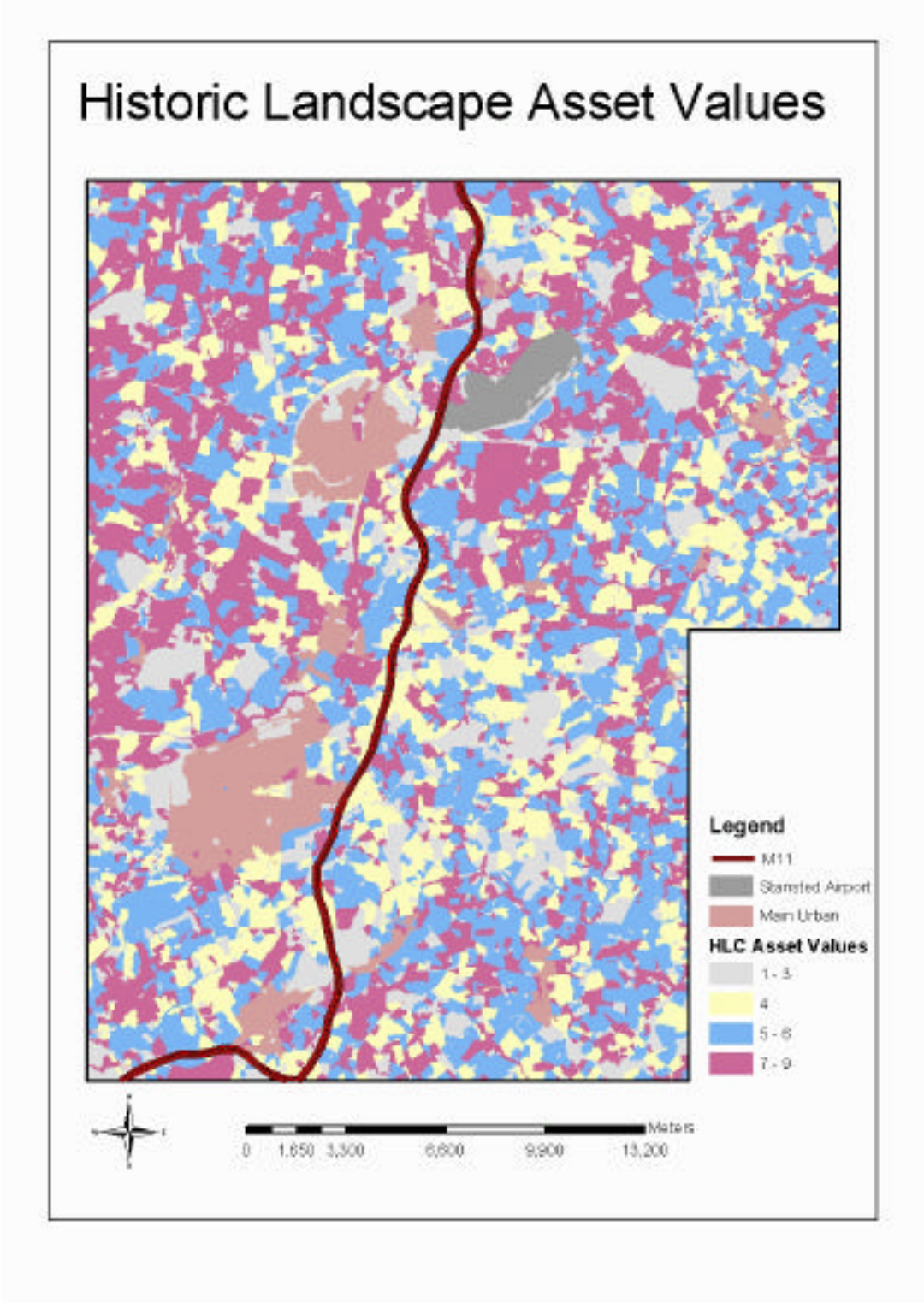

Figure 9. Historic Landscape Characterisation mapping with sensitivity values

The ranking is tabulated in ***Appendix 1***. The main score refers to historic landscape types, which remain largely or completely intact in the current landscape, although traces (relicts) of older landscapes may reside within other present forms adding to the overall score. The maximum score of 7 is given to significant single elements (e.g. pre-18th century fieldscapes or historic/archaeological earthworks), which are considered most vulnerable to change. Palimpsest landscapes (those which exhibit both present and former historic landscape character) may develop higher scores, to a maximum of 10. This specific range of values was developed to allow the incorporation of further sensitivity scores relating to other historic assets – a stage beyond the current study.

These scores are aggregated into bands (1-3, 4, 5-6, 7-9) which, when mapped, indicate for each area:

- age, rarity or 'special interest'.
- the history of change (static or dynamic).
- the completeness or articulation of the historic landscape (its legibility).
- the dominance of factors which contribute to the strength of local character.

The bands used to create the sensitivity model are detailed in ***Table 3***.

Sensitivity	**Criteria**	**Capacity for change**
Low (1-3)	Almost wholly modern landscapes created through the removal of historic indicators (extreme boundary loss in prairie fields) or by the creation of new features such as plantations, golf courses, airfields and urban expansion. Historic landscapes of low/residual significance	• High potential capacity to absorb essential change based on former trends and the general removal of the historic dimension • Considerable scope for environmental enhancement, especially where it is possible to draw on the qualities of adjacent landscape character. • Development-specific assessment desirable to determine potential for unrecorded assets.
	NB: Although scoring poorly in this exercise, special consideration must be given to the wartime airfield landscapes (e.g. N Weald, Hunsdon) which are of regional or national historic importance and may contain buildings or features which will be sensitive to change.	
Low – Moderate (4)	Landscapes altered after the mid 20th century, primarily through the engrossment of field systems or the reorganisation of holding adjacent to new landscape features such as motorways and peri-urban developments. Historic landscapes of limited local significance	• Dynamic landscapes in which an existing mixture of modern and historic elements pre-supposes a capacity, in principle, to absorb most types/scales of essential, well managed change. • Desirable that development enhances the residual character and fabric of the historic environment. • Assessment required to determine potential for unrecorded assets.
	NB: Extensive modern fields resulting from 20th century CAP scheme economics may become a significant indication of past practice as this process of agricultural subsidy is revised. After barely 50 years, it may be that these open landscapes with limited boundaries have become a significant characteristic in the eyes of the local population – a matter which should be addressed in further Quality of Life Capital Assessments.	

Moderate (5-6)	Legible pre-20th century fieldscapes and enclosure patterns, some of which retain visible elements of earlier patterns.; also commons and wooded plantations which have remained essentially unaltered since the 19th century. Historic landscapes likely to be of local significance	• Less static areas of landscape which are capable, in principle, of absorbing a moderate degree of change. • Sensitive to the cumulative impact of small scale changes. • Presumption against development that significantly alters the character and fabric of the historic environment • Further area assessment essential
	Diffuse and sporadic patterns of surviving pre-20th century fields are dominant in the study area. Although of lower sensitivity than surviving patterns from earlier dates, these areas provide the 'glue' that binds the older landscapes to the present – buffering core areas of high sensitivity and allowing more recent landscapes to be appreciated within an historical context.	
High (7-9)	Well preserved historic landscapes demonstrating considerable coherence and time-depth: including irregular medieval & pre 18th century fieldscapes and 19th century informal enclosure; both interspersed with areas of ancient woods and emparkment. Historic landscapes likely to be of national, regional as well as local significance	• Relatively complete and predominantly 'static' historic landscapes which are only capable, in principal, of absorbing very limited change without loss of character. • Particularly sensitive to the cumulative impact of small scale changes. • Presumption against development that would not contribute significantly to the maintenance and active conservation of the character and fabric of the historic environment. • Detailed area assessment essential

Table 3. HLC sensitivity model ranking

The result (***Figure 9***) is a geographically comprehensive assessment of the key levels of sensitivity for the historic landscape within the study area - an assessment of each area's capacity to withstand change without the significant alteration of character.

The pattern is complex, reflecting diverse themes of continuity, adaptation and change present in the modern landscape. At this scale (and at more detailed levels which can be easily generated from the database) the model is well suited to the analysis of specific development questions related to particular areas. It provides the appropriate historical context for the examination of the sensitivity of the settings of individual heritage assets such as monuments, parks, settlements and isolated buildings, cropmarks and other archaeological discoveries (see Section 5).

However, at this level of resolution the model is perhaps too detailed to allow straightforward comparison with the spatial analysis currently being applied to the LSC corridor. To engage at this level the model is further aggregated to form a more generalised pattern of sensitivity zones.

4.3.2 HLC Sensitivity Zones

A new filter is applied to the data in order to construct a more generalised pattern reflecting areas dominated by varying levels of sensitivity within the study area. The zones are created using a matrix of values and spatial patterns – defining areas according to their composition of high, moderate, moderate/low and low HLC sensitivity scores. It is not enough simply to identify intact areas of high sensitivity at one end of the spectrum and areas of minimal sensitivity at the other. The range

between these extremes requires careful consideration. For example, the areas of 'moderate' sensitivity, that which are widely scattered across the study area in ***Figure 9*** (blue) have an additional importance. They act as the 'binding agent' holding the historic landscape together. In some places they supply a buffer of altered but still appreciable historic landscape around more static and sensitive areas; in others they provide the last elements of continuity amidst patterns of more extensive change.

The resulting patterns are shown in ***Figure 10.*** This map does not provide guidance within the key urban areas (e.g. Harlow, Bishop's Stortford, Great Dunmow, Epping) as these areas require a more detailed level of analysis beyond the current study. The pattern does, however, indicate constraints and opportunities within the hinterland of these settlements – areas which may be considered for urban expansion. The capacities of the sensitivity bands to absorb change are the same as those shown in ***Table 3***.

It must be stressed that this map represents a first stage experimental approach and that it is solely derived from HLC information. Future version will require greater collaboration with local authority heritage professionals in order to include information from Sites and Monuments Records and other datasets to ensure an appropriate level of detail for more specific local studies.

Principal Sensitivity Zones

High Sensitivity Zones

The highest sensitivity areas are those which contain the greatest proportion of coherent non-Parliamentary enclosure dating from the 18th and early 19th centuries set against recognisable patterns of earlier (medieval and pre-18th century) field systems. Although long-lived, these patterns are fragile: all too easily degraded through fragmentation or the introduction of incompatible or intrusive elements.

Zone 1. Within and to the west of the Stort Valley (near Sawbridgeworth).

Zone 2. Along the course of the River Ash near the Hadhams.

Zone 3. Further to the south along the Ash Valley, near Widford and Hunsdon.

Zone 4. The north western corner of the study area (the chalk uplands around Furneux Pelham) where these earlier field patterns are particularly dominant.

Zone 5. In the vicinity of Stansted Airport, around Broxted-Tilty to the north east and Takely to the south east.

Zone 6. To the south of Stansted in the area of Hatfield Forest, Hatfield Broad Oak and Hallingbury, where earlier field systems abut large blocks of ancient woodland and wood pasture surviving from the medieval Royal Forest.

Moderate Sensitivity Zones

These are predominantly small areas of high sensitivity (based on static and intricate landscapes) surrounded and buffered by areas of moderate sensitivity. In each of these zones close examination reveals that the surviving patterns of small early enclosed fields, ancient woodland and meadow pasture play a significant role in defining local character.

Zones 7 & 8. To the south of North Weald Bassett and in the area of Epping, where ancient woodland, small early enclosures and open commons still predominate.

Zone 9. Within the bow of the Cripsey Brook north west of Chipping Ongar (around Greensted Green and Bobbingworth),

Zone 10. Following the River Roding north of Chipping Ongar through Fyfield towards Leaden Roding.

Zone 11. To the south east of Chipping Ongar, around High Ongar.

Zone 12. In the vicinity of Carter's Green/Housham Tye, east of Harlow and the M11.

Moderate/Low Sensitivity Zones

The HLC sensitivity zone model indicates several areas in which more dynamic landscape change has resulted in less appreciable time-depth or recognisable historic attributes - where local character still resides partly in the chronological depth of the landscape, but is rooted less firmly in the past.

Zone 13. To the west of Harlow,

Zone 14. To either side of the Roman Road south of Gt. Dunmow,

Zone 15. On the south eastern edge of Bishop's Stortford

Zone 16. In the vicinity of Henham near the northern boundary of the study area.

Zone 17. To the north and west of Bishop's Stortford and west of Stansted Mountfitchet.

Low Sensitivity Zones

The lowest scoring areas are those which display a highly dynamic history of change, culminating in the wholesale removal of earlier features in the late 20th century, largely as a result of the expansion and reorganisation of the farming landscape in the modern era.

Zone 18. To the east and south east of Harlow.

Zone 19. Within a narrow corridor running along the M11 from Harlow to Bishop's Stortford.

Zone 20 & 21. To the west of the Roding, where some extremely low scores are recorded in the area of Matching Green and Little Laver.

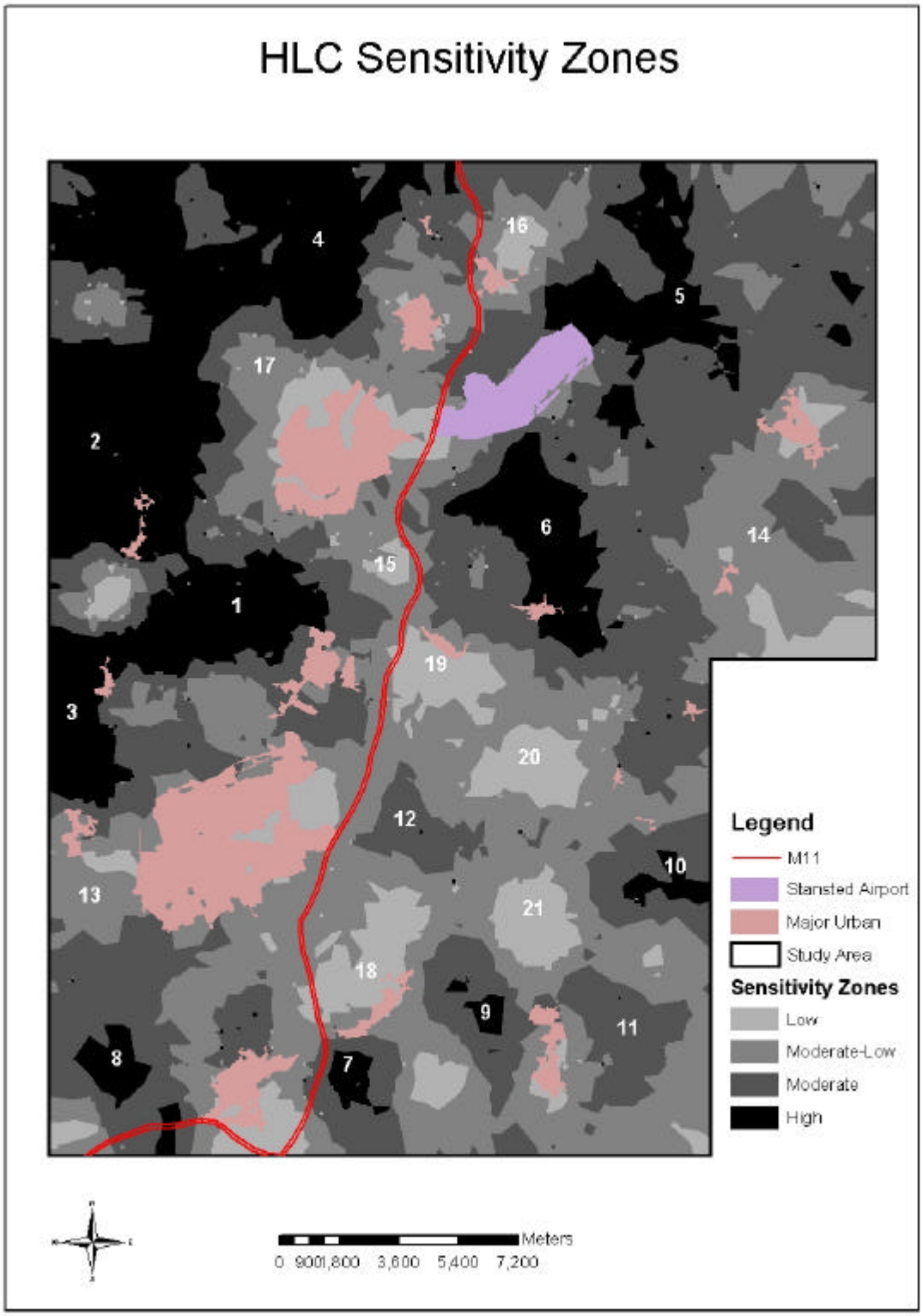

Figure 10. HLC sensitivity zones

4.4 Relationship of HLC sensitivity zones to current proposals

The recent Stansted/M11 Development Options Study (Buchanan & Partners 2003a) and the subsequent Key Issues Report (ibid. 2003b) provide a useful summary of current development policies and options, some adopted, other not, within the study area.

In Essex the presumption is for further development within the main urban centres, and within the study area Harlow District is seen having the greatest capacity, both in terms of urban regeneration and through potential expansion of the new town in 'greenfield' areas to the east (New Hall) and west (Eastend).

Uttlesford is considered to be a primarily rural district, with an exceptionally high quality of life based on tranquility and the rich natural and historic environment, most notably its wealth of colour-washed and timber framed houses, historic farm buildings and barns. It is considered essential to retain this rural character; hence new development is aimed primarily at the existing urban locations (Gt. Dunmow) with lesser intensification and extensions at Elsenham, Hatfield Heath, Stansted Mountfitchet and Stebbing. Major urban extensions are also anticipated to accompany the A120 improvement programme. These areas have very little previously developed land (PDL). Protection is afforded to higher-grade agricultural land (most of Uttlesford is Grade 2) but development is not completely prevented.

Epping Forest District is classified as 90% rural: a characteristic that provides significant benefits to the adjacent urban populations of North London and Harlow (see Levett-Therivel et. al. 2003). Development is highly constrained by Green Belt and other designations and will only be allowed if it respects and enhances the countryside. Significant urban intensification lies outside the study area, mainly in the area of the former Royal Ordnance establishment at Waltham Abbey.

Hertfordshire, similarly, intends to protect its existing settlement pattern by locating new development within main urban centres and placing 60% of new housing on PDL. East Herts has determined that development should be through regeneration and peripheral expansion will only be allowed in highly limited circumstances. Some urban intensification is proposed for Sawbridgeworth and Bishop's Stortford. Small-scale development has been identified as a possibility within Category 1 villages (Much Hadham, Hunsdon and Widford) and limited infill in Category 2 villages (Furneux Pelham).

In view of these policies and other considerations affecting the historic environment the *Stansted/M11 Developments Option Study Key Issues Report* concluded that a broad area covering much of Essex as well as south Cambridgeshire and East and North Hertfordshire has, with few exceptions, capacity to absorb some levels of urban expansion. Only two areas within the HLC study area have been identified as having overriding sensitivity issues at this stage (the 'North West Essex Farmland' and the 'Perry Green Uplands' (Herts) Landscape Character Areas). These have been excluded from the next stage of detailed capacity studies, including Quality of Life Capital assessment, due to take place over the next few months. The report concludes that the settlements at Harlow, Sawbridgeworth and Bishop's Stortford each have high potential for growth, whilst Epping and Stansted Mountfitchet have moderate potential, Chipping Ongar has low/moderate potential and Great Dunmow has low potential.

4.5 Provisional Conclusions

Given the concerns for the rural and historic environment already voiced in local plans, it comes as no great surprise that the HLC sensitivity zone model – a model based on visible historic character - frequently endorses existing policies. However, it allows some existing conclusions to be refined in respect of the historic landscape environment, and also identifies constraints and potential opportunities beyond those which are already evident.

The low sensitivity zones suggest considerable potential scope for development. In terms of wider growth, as may be required by the *Sustainable Communities* agenda, the model implies a capacity for significant development in several areas with more dynamic histories of landscape change. These zones can be seen to the south of Harlow around Rye Hill and southeast towards Tylers Green and North Weald Bassett (**Z18**), along the M11 north of Harlow near Hatfield Heath (**Z19**) and further to the east of the M11 (**Z20/21**). Whilst these areas are doubtless constrained by other issues (agricultural land grade, tranquility and Green Belt for instance) the sensitivity of the historic landscape is a lesser factor here than elsewhere in these districts. Well-managed change should consider the inherent social value of even the most extensively altered landscapes and provide means for the more sensitive historic elements in these areas to be conserved or enhanced. In particular this will mean consulting locally about the value of modern open arable horizons, and designing new developments which fit within the remaining pattern of boundaries and wooded belts without caused the significant loss of these features.

Low/moderate sensitivity zones also provide scope for development, including some scenarios that support conclusions in the Key Options study. Zones where landscape change has resulted in fragmentation and less appreciable time-depth - the areas to the west of Harlow (**Z13**), south of Gt. Dunmow (**Z14**), in the vicinity of Bishop's Stortford and Stansted Mountfichet (**Z15 & 17**) and near Henham near the northern boundary of the study area (**Z16**) – offer opportunities for carefully managed development that fits within the remaining historic grain of these landscapes and alongside the public's perception of their values and benefits. Later boundaries of low historic significance (e.g. post 1950 enclosure) could be removed or realigned, but the overall character of these areas should be retained through the protection of key historic elements such as sinuous field boundaries, ponds, woods and shelter belts and the established pattern of roads and footpaths. The potential also exists to enhance the local environment by drawing inspiration from historic patterns. For example historic farmland enclosures (even those lost to subsequent field enlargement) could be reinstated to define areas of open space within new developments; the locations of new trees, for screening and other purposes, should preferably be sited in areas with historic precedents (i.e. in areas of former woodlands and wooded boundaries) using appropriate native species.

Moderate sensitivity zones place greater constraints on the scale and location of future development, but without precluding the possibility of carefully designed and beneficial change. These landscapes - south of North Weald Bassett and in the area of Epping (**Z7 & 8**), within the bow of the Cripsey Brook north west of Chipping Ongar (**Z9**), following the River Roding north of Chipping Ongar (**Z10**), around High Ongar (**Z11**) and around Carter's Green (**Z12**) - are more intricate and fragile than their lower scoring neighbours, and they provide a greater degree of historical context for the related settlements and isolated dwellings in these areas.

These zones are sensitive to the cumulative impact of small scale changes, and further fragmentation of their historic character should be resisted. Historic landscape

elements - ancient woodland, small early enclosures and open commons – are intrinsic to the character of these zones, almost certainly (although this is as yet untested) provide tangible social benefits (such as a sense of continuity), and cannot be replaced by modern substitutes. Working within these constraints will require both caution and imagination. As ever, there are opportunities to embrace the local setting though intelligent use of historic themes in new designs. The ratio of settlement and countryside is a key factor, hence new development locations and areas for redevelopment should be carefully selected against localised patterns of previous landscape change and designed to limit their intrusion on the character of the historic landscape. Compatible building materials and sympathetic (but not slavish) references to local building styles should be standard requirements.

The highest sensitivity zones, those with the most coherant, static and intricate patterns of land use, are the most vulnerable to change. Some of these zones - south of Stansted in the area of Hatfield Forest, Hatfield Broad Oak and Hallingbury (**Z6**), along the course of the River Ash near the Hadhams and Hunsdon (**Z2 & 3**) and within the chalk uplands around Furneux Pelham (**Z4**) – are unlikely to receive much further consideration for growth based on the findings of other methods of sensitivity assessment. Others zones - within and to the west of the Stort Valley near Sawbridgeworth (**Z1**) and around Broxted-Tilty to the north east and Takely to the south east of Stansted Airport (**Z5**) – are expected to undergo further, more detailed stages of assessment.

The options for development in these areas are highly constrained by the potential for disruption and loss of historic character. For example the East Hertfordshire villages (Categories 1 & 2) are hedged about by ancient and static landscapes that could easily be damaged by extensive development, and nothing beyond the extremely limited infill recommended in local plans would be appropriate here. The sensitivity of other zones, such as those along the A120 corridor and surrounding Sawbridgeworth, place a particular duty on planners to minimise the impact of any proposed developments. Future urban intensification is possible if care is taken to identify the least sensitive areas within these zones (areas which have seen a degree of fragmentation in the past), and if the full suite of conservation-minded approaches are employed. Wherever possible the emphasis should be towards the reintegration of the landscape – minimising the intrusion of new development through the use of appropriate scales and design, and enhancing existing historic character for the benefit of those who live, work or find recreation in these places.

5. Recommendations

5.1 Applying the HLC-based approach

The principles of sustainable development require that we live within the capacity of natural systems to cope, and that we hand on our environmental heritage, whether natural or man made, to future generations in at least as healthy state as we found it.

These principles are translated into strategic aims in '*Our Environment, Our Future*': the regional strategy developed jointly by the East of England Environmental Forum (including English Heritage) and the East of England Regional Assembly. The following aims are particularly relevant to the historic environment within the LSC Growth Area:

- Development and economic activity should be within the capacity of the environment to accommodate it, and should make a positive contribution to strengthen the character and robustness of the environment.

- New developments should contribute to the character of the area within which they are located, and in historic contexts, draw intelligent inspiration from their surroundings.

- Settlement character should be looked at in an holistic way, which means ensuring that new development fits the grain and characteristics of historic towns and landscapes.

- Local people should be involved in understanding and valuing what it is that is important about their environment, so that this can be reflected in development decisions.

- A strategic approach should be applied to planning and managing change in the countryside, underpinned by landscape character assessment and historic landscape characterisation, backed up by area based strategies that set long term goals and target resources effectively, and identify indicators to monitor changes and inform future actions.

The approach described in this document, and explored in the indicative study, provides the basis for proper assessment of the historic landscape. The approach can form the basis from which an integrated assessment of the historic environment may be developed, in line with the aims (those outlined above and others) identified in the Forum's regional strategy. It should be applied in increasing detail and sharper focus at each successive stage in the process, incorporating more information and local expertise in relation to the finer scales of application. In particular, further work should have regard to the published regional research and management frameworks (ALGAO 2000, Glazbrook, J (ed.) 1997, Glazbrook, J & Brown, N. (eds.) 2000).

One particular application of the HLC-based sensitivity model will be to help formulate professional options and questions as a starting point for gauging the public views of 'what matters and why' through the Quality of Life Capital Assessment process. The present sensitivity model needs further refinement before it can be used effectively in this way, but the example below (***Table 4***) indicates the potential of this approach

Benefits	**Who to / scale / importance**	**Enough?**	**Substitute/ Options**	**Management Aim**
Professional opinions/*Questions for public consultation*				
HLC Zone 1 (High) A sense of time and place based on the intricate pattern of 19th century and earlier field systems with developed hedgerows and wooded pockets interspersed with small villages and hamlets. Reasonably accessible via lanes and footpaths	Regional/national importance for the study of historic settlement and land use patterns, especially so given the loss of major areas of pre-19th century fields further to the north and east *Recognised by / important to local communities?* *Important to residents of adjacent urban areas as a counterbalance to the developed environment?*	No. Surviving patterns are approaching minimum limits of coherence	Finite resource. Not substitutable	Maintain surviving historic character and ensure careful planning and design to minimise intrusion of inappropriate elements

HLC Zone 14 (Low) A sense of space provided by vistas of modern open areas of arable cultivation (Although largely inaccessible, except from the margins of fields).	Minimal importance within the historic landscape, although surviving boundaries are likely to have early origins. *Locally characteristic and significant for the contrast which it provides to more developed areas?*	Yes. Largely indistinguishable from similar tracts of land across the wider region.	More accessible areas of open space could provide a more beneficial option. Substitution is not preferred as this would require the alteration of other, more sensitive, areas of the landscape	Maintain areas of agricultural production. Ensure that new development leaves a significant area of open arable land, and respects surviving ancient boundaries and other features wherever possible. Pursue options for greater public access.

Table 4. An example of 'Quality of Life Capital Assessment' (as applied to the historic landscape, based on the HLC sensitivity model).

5.1 Further studies

The HLC sensitivity model demonstrated in this document, although informative at the broad scale (and applicable to more focussed areas of potential development) does not take full account of the range of available heritage information. HLC cannot be a free-standing tool, still less a replacement for these other more specific datasets; but it fills a large gap in the available range of conservation mechanisms, and can be used alongside these other systems to provide an effective framework for a more holistic and comprehensive sensitivity model.

The range of heritage data (as shown in ***Appendix 2***) is extensive and the current study, which is time constrained and simply intended to be indicative of the approach, has not extended to encompass it. Methods of integrating the sensitivity values of site-specific data within HLC models have been explored during the recent review of the Essex and Southend-on-Sea Replacement Structure Plan (Blandford Associates 2002), and are currently undergoing further development by English Heritage and local government archaeological staff in relation to the London-Stansted-Cambridge corridor and other growth areas.

The key to successful sensitivity mapping is to ensure that heritage assets such as Sites and Monuments Records (SMRs), Conservation Areas or Scheduled Monuments are not simply ranked in terms of the numbers, which occur within any given area. Each asset group requires careful and intelligent analysis to determine the vulnerability of its components in terms of their capacity to absorb or benefit from change. Hence, for example, Scheduled Monuments and Listed Buildings, which are legally protected and therefore comparatively secure from change, may be less vulnerable than many undesignated sites and structures, which can be assessed from county archaeological or historic databases. The sensitivity of designated sites may reside more fully in the nature of their settings – the historic context which should be conserved or enhanced to allow these individual assets to be properly appreciated and understood. HLC analysis will help to define these settings. Also, applied in conjunction with SMR data it will allow existing patterns of archaeological discoveries to be assessed alongside patterns of historic land use, which may conceal further evidence – a predictive tool which offers much to the environmental impact assessment process.

We believe that the HLC-based sensitivity framework approach, incorporating the full spectrum of heritage data, is necessary to properly inform decisions concerning the historic environment within the London-Stansted-Cambridge corridor. HLC is already available for Essex and Hertfordshire, and will soon become available for the relevant part of Cambridgeshire. We will gladly offer our assistance in the use of this information and in the development of more holistic sensitivity patterns incorporating other heritage data. This does not simply apply to the rural environment. The same principals, applied at a suitable scale and using the expert knowledge and data compiled through English Heritage-funded historic town surveys, can illuminate both professional and public discussions about the most effective and appropriate ways to enhance and conserve urban areas.

The holistic method will allow proper analysis of the sensitivity of the historic environment, and its capacity to absorb change. Its use can influence the extent of development and the choice of new development locations, allowing vulnerable areas to be protected (or enhanced) and ensuring that important elements are allowed to live on. In this way the character and quality of the environment as a whole may be maintained. At the broad scale this requires the examination of development options in relation to the overall grain and character of the landscape and sensitivity of the historic environment. In subsequent stages the method can be applied to the identification of more specific constraints and opportunities. Society's requirements may thus be met in a sustainable manner, incorporating the benefits of a varied and locally distinctive heritage, including effective regeneration of the historic building stock and intelligent and appropriate new designs. In this way our landscapes and townscapes will retain the past to enrich the present, and deliver a worthwhile legacy to the future.

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Meta-data

Information sources for the HLC analysis are listed in ***Table 1***.
Scale of data capture: 1: 25,000.
Scale of digitizing (accuracy): 1:10,000.
Data Creator: Lynn Dyson-Bruce.
Data owners: Essex County Council, Hertfordshire County Council.
Data Created 2003

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APPENDICES:

Appendix 1: Sensitivity values for HLC types

HLC TYPE	ASSET VALUE Current	ASSET VALUE Relict	Comments
Pre18th C field systems if/sf/cf/ca	7	2	
Formal Parliamentary Enclosure	5	2	
Commons	6	2	
Ancient Woodland	7		
19th C Plantation	3	1	
20th C Plantation	2	1	
Nursery 20thC	2		
Nursery 19th C	3		
Orchard 20th C	2		
Orchard 19th C	3		
19th C Allotments	3	1	
20thC Allotments	2	1	
Plotlands	6	2	
Unimproved Rough Pasture 19th C	4	1	
Unimproved Rough Pasture 20th C	3		
Meadow pasture	7	2	
20thC Field Boundary Loss	2		
Parklands	6	2	Registered Parklands score 8 & 7
20thC leisure	2		
Hospitals, schools and universities	3		
Religious Institutions	3		
Disused Post Medieval Military	5		
Post Medieval Military	4		
Watercress Beds	5		
Extraction 20thC	1		
Extraction 19th C	2		
Industrial	3		
Urban	3		
Urban EUS	8		
20th C Enclosure	2		
Communications	1		
Airports	3		
20thC Stud Farm	2		
Restored Land 20th C	1		
Restored Land 19thC	2		
Medieval Deer Park	7	2	
Rabbit Warren	6		
Disused Industrial	3		
Unknown	4		
Mixed Origin		2	
20th C Field Bound loss – with relict elements	3		
20thC Water Reservoir	1		
Later Enclosure	6	2	
Duck Decoy Pond	5	1	
Water Meadow	7	2	
Fields with wooded margins	7	2	
Brick-shaped Fields	7	2	
Historic Earthwork	8		
Heath/Downs	6		
Pre18th C drainage	7	2	
19thC drainage	5	1	

Appendix 2: Historic environment data sources.

Asset Source	Origin	Form	Geographic coverage Herts/Essex/ Cambs
Historic Landscape Characterisation	Local Authorities/English Heritage	Digital	All except Cambs (which is in development)
Atlas of Rural Settlement	English Heritage	Paper	All
Listed Buildings	English Heritage	Digital	All
Scheduled Monuments	English Heritage	Digital	All
Scheduling Evaluation Lists	English Heritage/ Local Authorities	Paper	All
Register of Designed Landscapes (Parks and Gardens)	English Heritage	Digital	All
Registered Battlefields	English Heritage	Digital	All
Sites and Monuments Records	Local Authorities	Digital	All
National Landscape Character Assessment	Countryside Agency	Digital	All
Local Landscape Character Assessment	Local Authorities	Digital	All except East Herts
National Mapping Project (aerial mapping of archaeological features)	English Heritage	Digital	Extensive, but not comprehensive
Conservation Areas	Local Authorities	Digital	All
Specified Ancient Landscape Areas	Essex County Council	Digital	Essex
Extensive Urban Survey reports and maps	Local Authorities/ English Heritage	Digital/ paper	Partial for all counties.