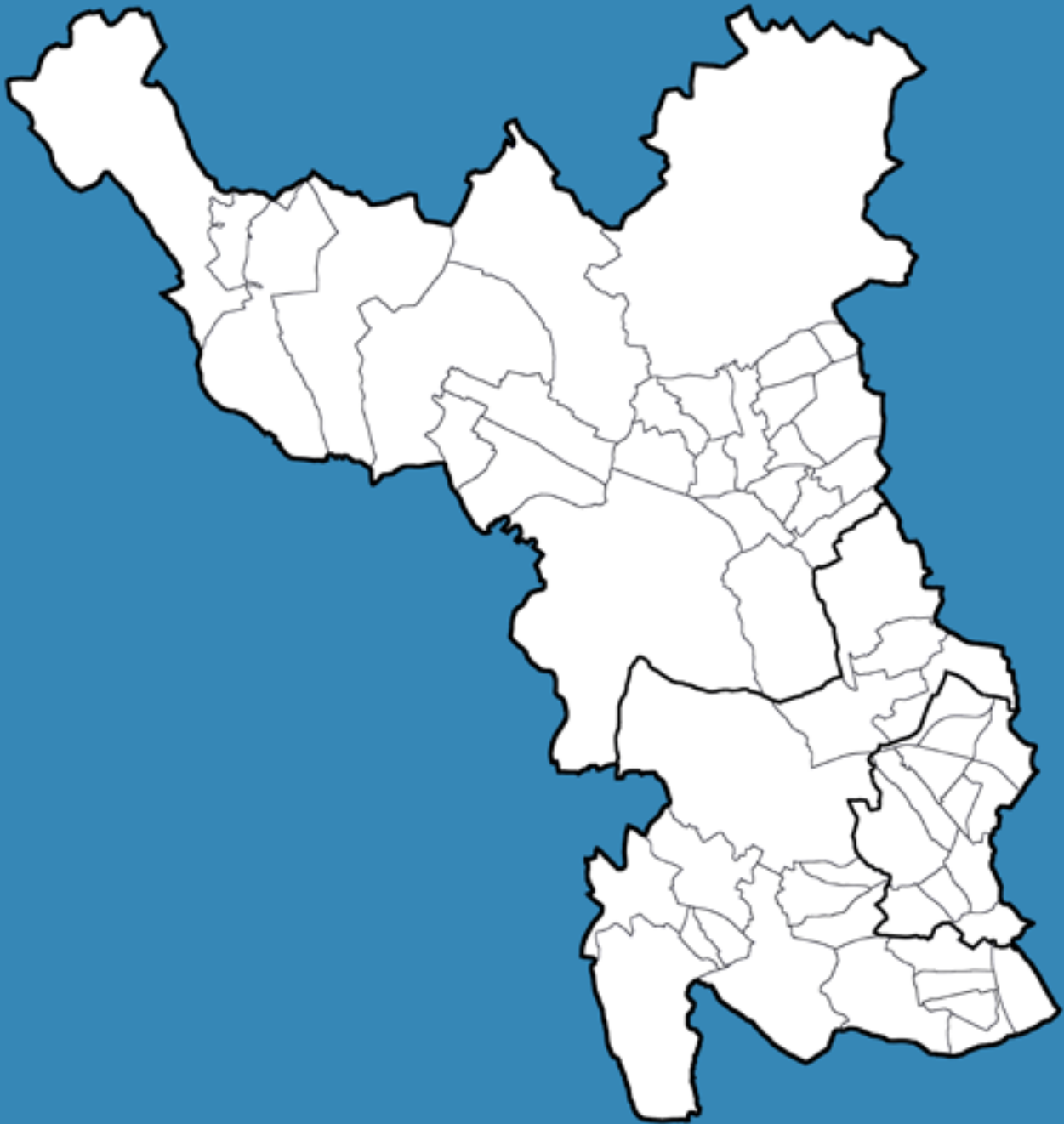


T R I B A L



South West Hertfordshire

Dacorum Borough Council
Three Rivers District Council
Watford Borough Council

Strategic Housing Land Availability Assessment

Final Report: Volume 1

October 2008

Tribal Urban Studio Team in association with Atisreal

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Disclaimer

It should be noted that this study is not a statement of Council policy; rather it is a technical document for consideration, assisting in the production of new development plan documents as required under new planning procedures: the study merely identifies land and buildings where the potential may exist for new housing development to come forward in the timeframe of 20 years from LDF adoption.

The capacity of the authority area to accommodate residential development has been estimated in isolation from the equally pressing need to identify land for development for other purposes, including schools, health facilities, open space, shops, leisure, community facilities, etc. Furthermore, the estimates do not take account of the physical capacity of local infrastructure, such as roads, sewers and the supply of water, gas or electricity, to cope with the stated level of development. Any of these, or other factors, could affect the estimated capacity of a particular site and/or the total capacity for a settlement or authority area.

1 Introduction

1.1 Purpose of the study

- 1.1.1 This is the final report of a Strategic Housing Land Availability Assessment (SHLAA), commissioned jointly by Dacorum Borough Council, Three Rivers District Council and Watford Borough Council, to estimate the available housing potential across the three Council areas (henceforth referred to as South West Hertfordshire). Tribal Urban Studio (formerly Llewelyn Davies) undertook the study in association with AtisReal between October 2007 and July 2008.
- 1.1.2 This SHLAA is a technical document forming part of the evidence base for the three Councils' Local Development Frameworks. Specifically, it was commissioned to inform the preparation of the Core Strategy Development Plan Documents (DPDs), Area Action Plan DPDs and the Site Allocations DPDs, as required under new planning regulations as set out in the Planning and Compulsory Purchase Act 2004.
- 1.1.3 The SHLAA looks forward over a twenty-year timeframe from adoption of the three Councils' LDFs (currently projected as 2010). This time period will cover the second half of the period 2001-2021 set out in the adopted Regional Spatial Strategy (RSS) for the East of England and looks towards 2031 (the timeframe which any necessary Green Belt releases must be planned).
- 1.1.4 The East of England RSS was amended following its Examination in Public (EiP) such that the housing target for South West Hertfordshire was raised from 14,500 to 21,200 over the Plan Period. Of this revised total of 21,200 to 2021, 12,000 is the new target for Dacorum¹, 4,000 for Three Rivers and 5,200 for Watford.
- 1.1.5 The requirement for the Councils to prepare SHLAAs, either individually or jointly, was set out in PPS3 (Housing) published in November 2006, and taken forward in the SHLAA practice guidance (July 2007). This is a clear development from PPG3 and the previous guidance 'Tapping the Potential', in that it encourages a more responsive approach to land supply at the local level.

1.2 Context and study area

- 1.2.1 The South West Hertfordshire area lies in the east of England. The three Council areas that make up the study area are together large, and border a number of neighbouring local authorities: St Albans and Hertsmere (both also in Hertfordshire) to the east, the London Boroughs of Harrow and Hillingdon to the south, South Buckinghamshire, Chiltern, and Aylesbury Vale (all in Buckinghamshire) to the west and South Bedfordshire to the north.
- 1.2.2 South West Hertfordshire's main settlements are Hemel Hempstead, Berkhamsted and Tring (in Dacorum), Rickmansworth and South Oxhey (in Three Rivers) and Watford and Oxhey (in Watford). The remainder of South West Hertfordshire comprises large and small villages, with populations ranging from fewer than 1,000 to over 4,000 people. South West Hertfordshire has numerous road and rail links; the West Coast Mainline connects Tring, Berkhamsted, Hemel Hempstead, Oxhey and Watford to London, the West Midlands and the North. In addition, the London Underground Metropolitan Line extends into Three Rivers and Watford districts. The M25 runs through the study area and

¹ For Dacorum, the housing figure will be approximately 17,000 looking forward to 2031, taking the Green Belt Review period into account.

there are a number of 'A' roads across the area, of which the most important is the A41 that bypasses Watford, Hemel Hempstead and Tring.

- 1.2.3 The entire area of all three local authorities was set as the study area. This meant that no geographical area was excluded from survey, and likewise no 'areas for search' needed to be employed. Rather, both brownfield and greenfield sites were assessed on criteria of suitability and sustainability, in accordance with the SHLAA practice guidance. By necessity, the criteria for greenfield sustainability was more complex than that for brownfield, and was formulated by the client team in consultation with the consultant team. It took account of Government guidance on sustainable development and employed a sequential, common-sense based approach to assessing the greenfield sites that it was anticipated would be submitted by landowners, developers and/or agents. Full details of the greenfield site selection criteria appear below in Section 3.
- 1.2.4 Some of the urban land in the study area had also been covered by the Urban Capacity Study completed by Llewelyn Davies for the local Councils in 2005. Where this was the case, the pool of still available Urban Capacity Study sites was reviewed; those rejected were assessed for their suitability under the new approach of a SHLAA and those accepted were revisited to assess whether they were still suitable for residential development.
- 1.2.5 To the initial pool of sites that resulted from this approach was added those submitted by developers and/or landowners between January and 7 March 2008. Letters were sent out to stakeholders inviting site submissions, and stakeholders were invited to a consultation workshop was held in Watford. In some cases, sites submitted overlapped with locations that had already featured in early stages of consultation on Site Allocations DPDs in the study area. For a full list of individuals and organisations consulted, please refer to Annex B.
- 1.2.6 Although some sites submitted did not fall within the study's initial areas for search, they were assessed for suitability, availability and achievability in exactly the same way as the pre-existing pool of sites, with no prejudice to either type of site.

Figure 1: The Study Area

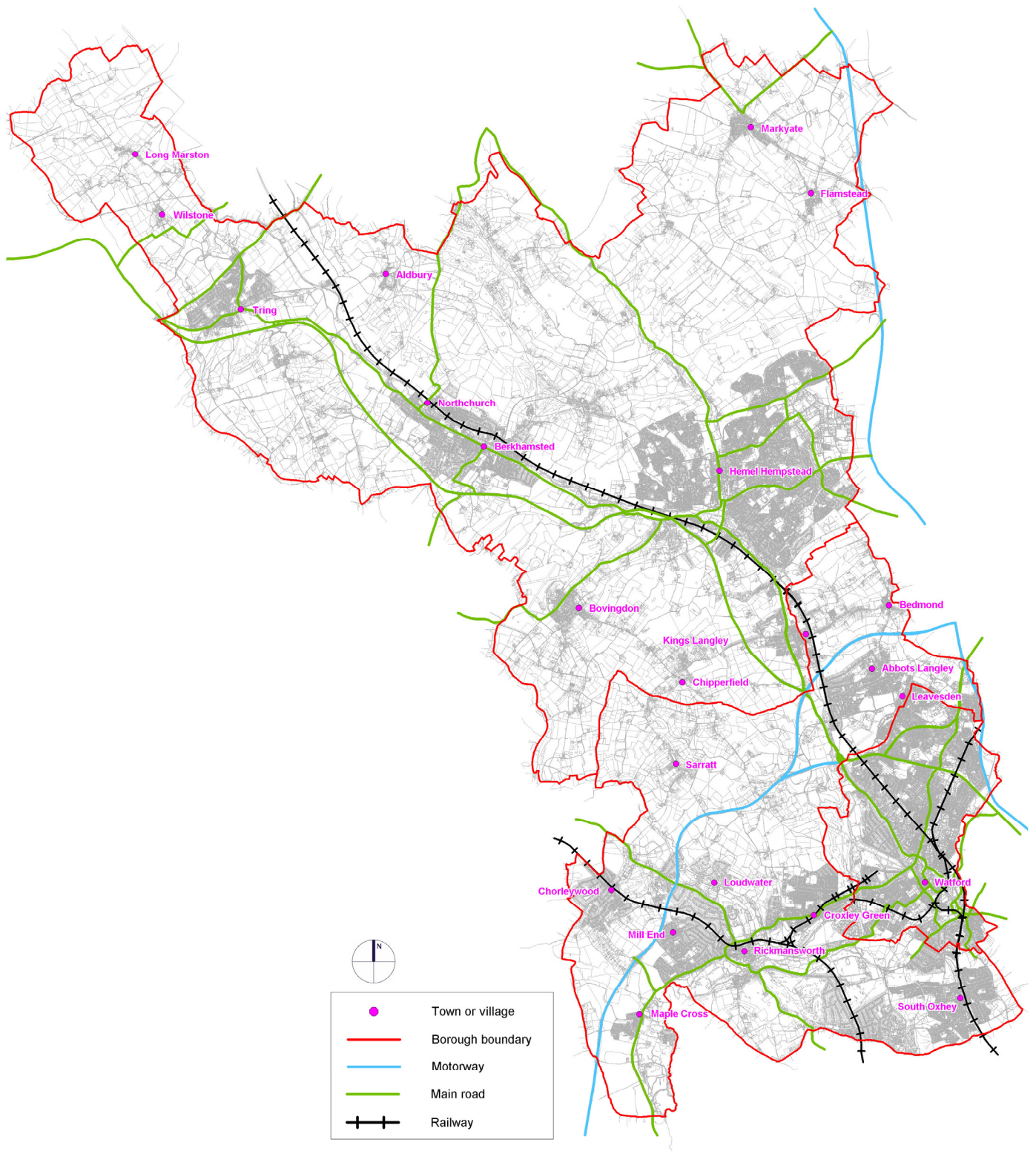
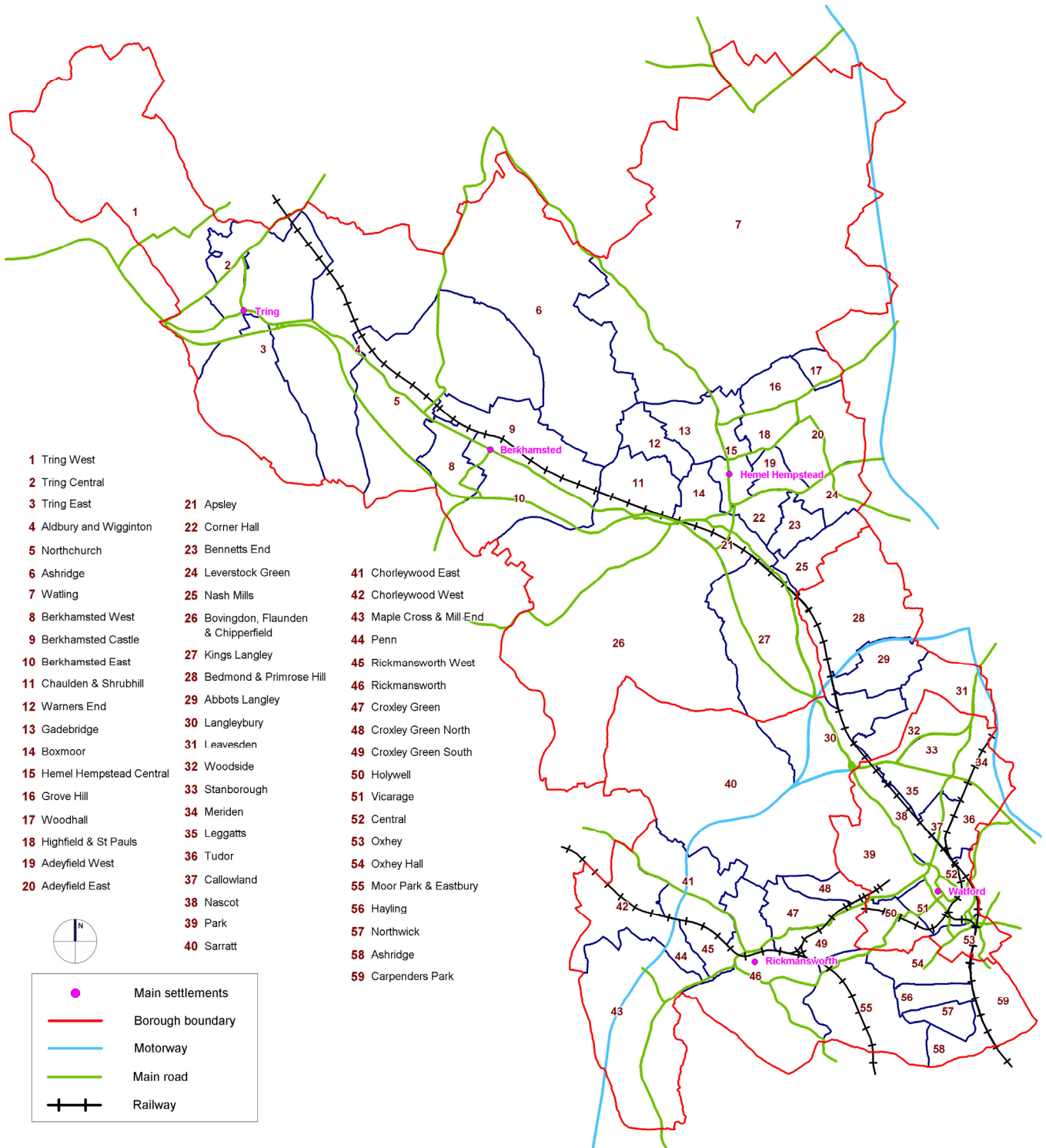


Figure 2: The Study Area and Ward Boundaries



1.3 Overview of study approach

- 1.3.1 Until 2006, national housing policy was contained in Planning Policy Guidance 3 (PPG3). PPG3 required local authorities to undertake studies of housing land supply known as Urban Capacity Studies (UCS). These studies required an examination of housing potential in urban areas only. However, the Barker Review of 2004 concluded that such studies relied on identifying land supply in a limited area with sometimes unrealistic assumptions on the likelihood of sites coming forward. It was also thought to be too restrictive to consider peripheral land release only if there was not enough urban brownfield land.
- 1.3.2 In essence, the old system of urban capacity studies was not doing enough to overcome the restrictions on the delivery of housing. The report recommended a step-change in housing delivery through an increase in the rate of house building in order to meet demand at local level. It stressed the importance of an evidence-based policy approach, and recommended that Local Development Documents and Regional Spatial Strategies policies should be informed by a robust, shared evidence base.
- 1.3.3 In 2006, PPG3 was replaced with Planning Policy Statement 3 (PPS3). PPS3 required local authorities to be more flexible and:
- Identify specific, deliverable sites for the first 5 years of a plan that are ready for development (and keep this replenished over time in response to market information);
 - Identify specific, developable sites for years 6-10, and ideally years 11-15, to enable the 5 year supply of deliverable sites to be topped up;
 - Where it is not possible to identify specific sites for years 11-15 of the plan, indicate broad locations for future growth; and
 - Not include an allowance for windfalls in the first 10 years of the plan unless there are justifiable local circumstances that prevent specific sites being identified.
- 1.3.4 Overall, a top priority for the Government was to ensure that land availability is not a constraint on the delivery of new homes. To enable this, the Government introduced the Strategic Housing Land Availability Assessments (SHLAAs) to replace UCSs. The Government now requires that 'Local Development Documents and Regional Spatial Strategies policies should be informed by a robust, shared evidence base, in particular, of housing need and demand, through a Strategic Housing Market Assessment and land availability, through a Strategic Housing Land Availability Assessment' (para. 11, PPS3).
- 1.3.5 The Department of Communities and Local Government (CLG) has recently published guidance to promote better practice in the preparation of SHLAAs. This document, '*Strategic Housing Land Availability Assessments Practice Guidance*', was prepared by POS Enterprises and Llewelyn Davies (now Tribal Urban Studio) and published in July 2007.
- 1.3.6 The practice guidance stresses that as a minimum, the assessment should identify sufficient specific sites for the first ten years of a plan, using its anticipated adoption date as the starting point. However, where possible SHLAAs should establish sites up to and beyond the whole fifteen year plan period. It also emphasises that the assessment is not a one-off study, and that the initial comprehensive assessment be supplemented by updates performed as part of Annual Monitoring Reports.
- 1.3.7 Although the assessment is a fundamental part of the evidence-base for developing housing policy, it does not in itself determine whether a site should be allocated for housing development. Rather, the SHLAA illustrates recent housing development

patterns, identifies the choices available in meeting housing demands, and distinguishes if action would need be taken in order for sites to become deliverable. It therefore follows that SHLAA findings are of particular relevance at the 'Issues and Options' stage of development plan preparation.

1.3.8 As well as the concept of an evidence-based policy approach, PPS3 also focuses on collaborative working – which is regarded by the statement as the 'key to the success of this new approach' (para. 11). *Strategic Housing Land Availability Assessment Practice Guidance* (CLG) complies with PPS3's collaborative principle, and advocates that regional and local planning bodies, with key stakeholders, work together in order to ensure a comprehensive and robust assessment. The guidance also recognises that it is crucial that a range of stakeholders be involved from the outset, hence enabling local knowledge input to help shape the methodological approach, as well as the content, of the assessment.

1.3.9 PPS3 (paragraphs 54-56) state:

*'Drawing on information from the Strategic Housing Land Availability Assessment and/or other relevant evidence, Local Planning Authorities should identify sufficient specific **deliverable** sites to deliver housing in the first five years. To be considered deliverable, sites should, at the point of adoption of the relevant Local Development Document:*

*– Be **Available** – the site is available now.*

*– Be **Suitable** – the site offers a suitable location for development now and would contribute to the creation of sustainable, mixed communities.*

*– Be **Achievable** – there is a reasonable prospect that housing will be delivered on the site within five years.*

Local Planning Authorities should also:

*– Identify a further supply of specific, developable sites for years 6-10 and, where possible, for years 11-15.....To be considered **developable**, sites should be in a suitable location for housing development and there should be a reasonable prospect that the site is available for, and could be developed at the point envisaged'.*

1.3.10 Sites to include in the SHLAA therefore, must pass a three stage 'sieving process' of suitability, availability and achievability. As PPS3 implies, suitability, availability and achievability is far easier to determine for sites in the 0-5 year phasing period (the earliest phasing period). It is more difficult to apply the three tests to sites in the phasing periods from 6 years onwards. In the current work, it was found that after 6 years, availability was impossible to assess on some otherwise suitable and achievable sites; survey work and site visits can determine suitability and achievability to a far greater extent than they can availability, which can only be assessed if the landowner's intentions are known.

1.3.11 However, experience from elsewhere suggests that when sites feature in capacity studies, their very identification for development can trigger landowner or developer action, thus creating a 'self-fulfilling prophecy'. This not only justifies their inclusion in the SHLAA but also helps fulfil the PPS3 requirement of there being a 'reasonable prospect' that the site could be 'developed at the point envisaged'. Such sites, that have not passed the test of absolute availability but that show a reasonable prospect of developability, are best not assigned to a particular phasing period (e.g. 0-5 years, 6-10 years) but should not be overlooked in the SHLAA process, particularly when PPS3 is taken into account.

1.3.12 Therefore, these sites are included in this report but have not been assigned a phasing period. However, they are judged to be developable, and as this document seeks capacity

beyond the 15-year mark, they are included in all capacity figures quoted throughout (although they account for only 16% of the total capacity figure). Ongoing monitoring can lead to sites of this type eventually being assigned a realistic phasing period.

- 1.3.13 Unlike Urban Capacity Studies, SHLAAs only permit windfall sites to be included under special circumstances. A windfall allowance may be granted where sufficient sites for housing cannot be identified, and only when there are genuine local circumstances justifying the allowance. (PPS3 para 59).
- 1.3.14 The SHLAA practice guidance identifies a 10 step methodology:
- 1 Planning the assessment;
 - 2 Determining which sources of sites will be included in the assessment;
 - 3 Desk-top review of existing information;
 - 4 Determining which sites and areas will be surveyed;
 - 5 Carrying out the survey;
 - 6 Estimating the housing potential of each site;
 - 7 Assessing when and whether sites are likely to be developed;
 - 8 Review of the assessment;
 - 9 Identifying and assessing the housing potential of broad locations (where necessary);
and
 - 10 Determining the housing potential of windfalls (where justified)

1.4 Summary of Findings

- 1.4.1 A summary of findings from the South West Hertfordshire SHLAA is contained below. It first looks at the quantum of housing by the type of site identified, before examining the likely phasing of this housing.
- 1.4.2 It is important to note, at this point, what the significance of these figures is, and how they should be interpreted.
- 1.4.3 The East of England Plan sets out the following requirement for South West Hertfordshire: Overall housing growth of 21,200 units. A programme will be adopted for maximising opportunities for brownfield development and redevelopment within the towns but some greenfield development will also be required.
- 1.4.4 This SHLAA identifies a large number of sites which are considered to be suitable, available and achievable for housing development within a 20 year timeframe. These sites form a pool of housing capacity which should be used as the basis for a selection of sites to take forward in the core strategy and site allocations DPD to satisfy the Borough's housing requirement.
- 1.4.5 The sites identified as part of the SHLAA should therefore be treated as a set of options, and the decision-making process for taking the sites forward should be informed by the commentary on each site set out in Volumes 3a, 3b and 3c of this study.

Site typology

- 1.4.6 Housing capacity can come from a number of sources. Physically identifiable sources include specific sites which can be observed and which have boundaries that can be marked on a map. Other sources of sites include windfall, and broad locations of growth. Neither of these are tangible sources; they include sources which have a history of providing accommodation (e.g. empty homes, change of use from industrial etc) or broad areas that may be considered for housing in the longer term.

Physically identifiable sources

- 1.4.7 In total, the survey work identified 2,281 sites for consideration, of which 1149 are located in Dacorum², 532 in Three Rivers and 600 in Watford. Of these, 414 (192 in Dacorum, 109 in Three Rivers and 113 in Watford) were considered suitable for further assessment, in terms of policy restrictions, physical or environmental limitations.
- 1.4.8 The study estimates that there is the potential to deliver **33,036** new homes in South West Hertfordshire (of which 23,115 are in Dacorum, 3,661 in Three Rivers and 6,260 in Watford) over the twenty-year period from LDF adoption (the three LDFs are currently anticipated for adoption from 2010 onwards, and therefore the SHLAA period will cover 2010-2030). Of this potential for 33,036 units, **11,719**³ can be delivered within urban areas and **21,317**⁴ on greenfield land.
- 1.4.9 The study did not assess the potential from non-physically identifiable sources. This is in line with PPS3 (Housing) which states that 'allowances for windfalls should not be included in the first 10 years of land supply unless Local Planning Authorities can provide robust evidence of genuine local circumstances that prevent specific sites being identified'. (PPS3, para 59). In the case of the current study, no such circumstances were identified.
- 1.4.10 The assessment comprised a comprehensive and intensive survey, which sought to identify all physically identifiable sites. This approach, and the fact that there are no 'genuine local circumstances' that mean that a windfall allowance should be included, has led to this category of capacity being excluded from the assessment.

Broad locations for growth

- 1.4.11 Where relevant, broad locations for future growth were noted. In some parts of the study area, locations have been identified that are suitable for residential development within the SHLAA period that do not at present have easily definable boundaries. It will therefore be for Dacorum Borough Council, Three Rivers District Council and Watford Borough Council to monitor these locations, which have been included in this study (for example, masterplan areas) through the LDF process, as more precise boundaries for residential uses start to emerge within them at a later date.

² Here and henceforth throughout this document, whenever a total capacity figure is given for Dacorum, the figure also includes residential capacity on St Albans District Council land to the east of the Dacorum boundary and to the west of the M1 motorway. This is because the regional housing target for Dacorum has made specific allowance for some of Dacorum's capacity to be provided on St Albans land. See paragraphs 2.3.8 and 3.3.20 for a more detailed explanation.

³ Of which 4,330 are in Dacorum, 1,236 in Three Rivers and 6,153 in Watford.

⁴ Of which 18,785 are in Dacorum, 2,425 in Three Rivers and 107 in Watford.

The total potential

1.4.12 New housing completions within South West Hertfordshire from 2001-2007 numbered 5,151 units, of which 2,158 units were completed in Dacorum, 1,341 units in Three Rivers and 1,652 units in Watford⁵. This study has found land for another 33,036 units (of which 23,115 are in Dacorum, 3,661 in Three Rivers and 6,260 in Watford). We further estimate housing completions in South West Hertfordshire from 2007-2010 to be 2576 units (of which 1079 in Dacorum, 671 in Three Rivers and 826 in Watford). Adding these together, therefore, there is potential for a total of 40,763⁶ units to be delivered between 2001 and 2030.

1.4.13 The RSS plan period is 2001-2021, with a target of 21,200 new dwellings for South West Hertfordshire. If we take the period to 2021 as covering approximately the first ten years of the twenty-year SHLAA potential, then we can demonstrate that the Councils will be able to meet and exceed their RSS targets thus:

Dacorum

RSS Target 2001-2021: 12,000 units

Of which: Completed 2001-2007	2,158 units
Capacity 2010-2021 (0-5 and 6-10 years phases)	9,437 units ⁷
Estimate of completions March 2007- March 2010:	1,079 units ⁸
TOTAL:	12,674 units

Three Rivers

RSS Target 2001-2021: 4,000 units

Of which: Completed 2001-2007	1,341 units
Capacity 2010-2021 (0-5 and 6-10 years phases)	2,925 units ⁹

⁵ All figures are from the relevant local council's Annual Monitoring Reports, 2006-2007.

⁶ Of which 26,352 are in Dacorum, 5,673 in Three Rivers and 8,738 in Watford.

⁷ With a base date 2 years from publication of the SHLAA, it is inevitable that some of the first ten years capacity will be completed before 2010. However, even taking account of this, the capacity beyond the first ten years across Dacorum remains 13,678 units, and it is therefore very unlikely that the RSS target cannot be met.

⁸ This figure is based on an estimate of 359 units per year in Dacorum, which was the annual average between 2001 and 2007. This figure includes capacity on all sites currently under construction across Dacorum at the time of SHLAA preparation (2007-8), which were therefore discounted entirely from consideration (see Volumes 3a) to avoid double counting. This takes account of the fact that the SHLAA has a capacity base date approximately 2 years after its publication.

⁹ With a base date 2 years from publication of the SHLAA, it is inevitable that some of the first ten years capacity will be completed before 2010. However, even taking account of this, the capacity beyond the first ten years across Three Rivers remains 736 units, and it is therefore very unlikely that the RSS target cannot be met.

Estimate of completions March 2007- March 2010:	671 units ¹⁰
TOTAL:	4,937 units

Watford

RSS Target 2001-2021: 5,200 units

Of which: Completed 2001-2007	1,652 units
Capacity 2010-2021	3,404 units ¹¹

Estimate of completions March 2007- March 2010:	826 units ¹²
TOTAL:	5,882 units

SOUTH WEST HERTFORDSHIRE (Total)

RSS Target 2001-2021: 21,200 units

Of which: Completed 2001-2007	5,151 units
Capacity 2010-2021	15,766 units

Estimate of completions March 2007- March 2010:	2,576 units
TOTAL:	23,493 units

Site phasing

1.4.14 The phasing of the sites across South West Hertfordshire has been assessed as falling into the following timescales:

¹⁰This figure is based on an estimate of 223 units per year in Three Rivers, which was the annual average between 2001 and 2007. This figure includes capacity on all sites currently under construction across Three Rivers at the time of SHLAA preparation (2007-8), which were therefore discounted entirely from consideration (see Volume 3b) to avoid double counting. This takes account of the fact that the SHLAA has a capacity base date approximately 2 years after its publication.

¹¹ With a base date 2 years from publication of the SHLAA, it is inevitable that some of the first ten years capacity will be completed before 2010. However, even taking this into account, the capacity beyond the first ten years across Watford remains 2,749 units, and it is therefore very unlikely that the RSS target cannot be met.

¹²This figure is based on an estimate of 275 units per year in Watford, which was the annual average between 2001 and 2007. This figure includes capacity on all sites currently under construction across Watford at the time of SHLAA preparation (2007-8), which were therefore discounted entirely from consideration (see Volume 3c) to avoid double counting. This takes account of the fact that the SHLAA has a capacity base date approximately 2 years after its publication.

Years 0-5:	4,929 dwellings (3,326 Dacorum, 544 Three Rivers, 1,059 Watford)
Years 6-10:	10,943 dwellings (6,111 Dacorum, 2,381 Three Rivers, 2,451 Watford)
Years 11-15:	3,944 dwellings (2,948 Dacorum, 236 Three Rivers, 760 Watford)
Years 15-20:	9,376 dwellings (8,852 Dacorum, 3 Three Rivers, 521 Watford)
Sites not phased (see 1.3.12 above):	3,843 dwellings (1,878 Dacorum, 497 Three Rivers, 1,468 Watford)

Expected completions 2007-2010

- 1.4.15 The above assumptions rely on a rate of housing completions between 2007 and 2010 that is comparable to that achieved between 2001 and 2007. However, recent market conditions have indicated that it is likely that completion rates for new dwellings in South West Hertfordshire will be affected by the recent downturn in the economy and the property market.
- 1.4.16 Sites likely to stimulate interest for development in a tougher economic climate are likely to be predominantly those where development constraints are limited i.e. sites where there is little demolition, land clearance and remediation necessary in order to begin construction. This will allow house builders to minimise up front spending and improve the financial viability of the scheme.
- 1.4.17 We might also expect to see development coming forward on those sites where there has been some flexibility in planning gain and affordable housing discussions between the Local Authority and the developer, with a view to easing the financial contribution of developers on proposed schemes.
- 1.4.18 The issues described above, coupled with difficulties in the mortgage market for prospective new home buyers, are likely to bring down the numbers of new dwelling completions during 2007-2010 from the levels seen in South Hertfordshire over the period 2001-2007. Any improvement in the national economic outlook may take some time to then encourage a recovery in the development market, as developers will have to seek sizable loans in a nervous market (due to a shortage in ready funds) in order to be able to finance scheme construction, and the trades will need a period of time to refocus on house building.
- 1.4.19 Therefore, it may be fair to assume that levels of housing completions may be down on previous (pre 2008) levels for the years 2008-2010. However, as the precise effects of the downturn are extremely difficult to predict, we have for the moment employed a figure projected forward from the existing completions data, but would recommend that the South West Hertfordshire authorities review the latest housing completion data as soon as it becomes available, in order that accurate updates can be provided to inform policy documentation and decisions.

1.5 Overview of this Report

- 1.5.1 The study is presented in four volumes. These are:

Volume 1: Final Written Report;

Volume 2: Design Case Study Exercises;

Volumes 3a (Dacorum), 3b (Three Rivers) and 3c (Watford): Site Schedules; and

Volumes 4a (Dacorum), 4b (Three Rivers) and 3c (Watford): Mapping.

- 1.5.2 This report comprises Volume 1: Final Written Report. It is presented in six further sections:
- 1.5.3 **Section 2** provides an overview of other studies that have been undertaken and which have informed the assessment. It discusses the RSS for the East of England and the implications of this for the study area. It also presents a set of population and household projections;
- 1.5.4 **Section 3** presents the study methodology;
- 1.5.5 **Section 4** provides an overview of the design case study work undertaken to generate the estimates of capacity and the principles behind the design work;
- 1.5.6 **Section 5** sets out our approach to suitability, availability and achievability and the phasing of sites into the different periods of deliverability;
- 1.5.7 **Section 6** presents the capacity estimates for South West Hertfordshire; and
- 1.5.8 **Section 7** establishes a framework for monitoring the supply.
- 1.5.9 In addition, the Annex presents (a) the consultation letter circulated, (b) a full list of SHLAA consultees and (c) a note on our density calculations.

2 Context

2.1 Introduction

2.1.1 This chapter sets out the planning context within which the South West Hertfordshire SHLAA has been undertaken. It is presented in three parts:

- an overview of the other studies undertaken which have informed the assessment of housing capacity;
- the implications of the emerging regional planning guidance for the East of England region; and
- a set of population and household projections for South West Hertfordshire.

2.2 Urban Capacity Study

2.2.1 This section provides an overview of the previous Urban Capacity Study for South West Hertfordshire, which formed the basis for assessment of the present study.

2.2.2 The study was published in 2005 by Llewelyn Davies. Its main findings were that total potential for 16,664 dwellings existed on 683 sites across the urban areas of the three Councils. Of this total, potential for 5,994 dwellings existed within Dacorum, 3,328 dwellings within Three Rivers and 7,342 dwellings in Watford.

2.2.3 The report's approach to assessing potential was based on the same design case studies used in this study (see below). These case studies are still considered to be robust.

2.2.4 The areas of search included the main urban areas of Hemel Hempstead, Watford and Rickmansworth. The other settlements included in the study were selected on the basis of a combination of their size, location and service functions (see Table 1 below). This approach naturally contrasts with the current study, where we are examining all locations for housing supply rather than just urban sites in specific settlements.

Table 1: Settlements covered by the 2005 Urban Capacity Study

Authority Area	Settlement
Dacorum	Hemel Hempstead
	Berkhamsted
	Tring
	Bovingdon
	Markyate
	Kings Langley
	Wilstone
	Aldbury
	Long Marston
	Rickmansworth
Three Rivers	Chorleywood
	Croxley Green
	Abbots Langley
	Carpenders Park
	South Oxhey
	Oxhey
	Maple Cross
Watford	Watford

2.3 Planning policy

National Policy

2.3.1 Planning Policy Statement 3 – *Housing* (PPS3) sets out the national planning policy framework for delivering the Government’s housing objectives. The principal aim of PPS3 is to underpin the Government’s response to the *Barker Review of Housing Supply* (2004), and in particular the necessary step-change in housing delivery, through a ‘new, more responsive approach to land supply at the local level’.

2.3.2 PPS3 reflects the Government’s commitment to improving the affordability and supply of housing in all types of communities, as well as contributing to sustainable development (as set out in PPS1). The specific outcomes that the planning system should deliver are as follows;

- Well-designed, high quality housing
- Mix of tenure and price for both market and affordable housing
- A sufficient quantity of housing to improve choice
- Housing in suitable locations with respect to community facilities, key services, jobs and infrastructure
- A flexible supply of land that is managed to maximise the efficient and effective use of it – including the re-use of previously developed land.

2.3.3 These outcomes are achieved through a new approach underpinned by principles and core concepts, comprising of;

- Sustainable development
- A visionary and strategic approach
- Market Responsiveness
- Collaborative working
- An evidence-based policy approach
- A focus on outcome and delivery (applying the principles of 'Plan, Monitor, Manage').

2.3.4 Annex C of PPS3 puts forward the SHLAA as the evidence base, asserting that the assessment is an important part of the policy process. PPS3 states the SHLAA should;

- Assess the likely level of housing that could be provided if unimplemented planning permissions were brought into development.
- Assess land availability by identifying buildings or areas of land (including previously developed land and greenfield) that have development potential for housing, including within mixed use developments.
- Assess the potential level of housing that can be provided on identified land.
- Where appropriate, evaluate past trends in windfall land coming forward for development and estimate the likely future implementation rate.
- Identify constraints that might make a particular site unavailable and/or unviable for development.
- Identify sustainability issues and physical constraints that might make a site unsuitable for development.
- Identify what action could be taken to overcome constraints on particular sites.

2.3.5 PPS3 also states that Regional Spatial Strategies should set out the level of overall housing provision for the region, broadly illustrated in a housing delivery trajectory, for a sufficient period to enable Local Planning Authorities to plan for housing over a period of at least 15 years. This should be distributed amongst constituent housing market and Local Planning Authority areas.

2.3.6 *Planning Policy Statement 12 (PPS12)*¹³ sets out the Government's policy on the preparation of local development documents, outlining the principles behind the evidence base for the Local Development Framework. Principles on baseline evidence and soundness are upheld, and the SHLAA should therefore conform to this. Paragraph 4.37 of PPS12, entitled 'Evidence Base', reads;

¹³ CLG, London. As amended in June 2008.

2.3.7 “Core strategies have major effects. Social and economic impacts may include altering property values by a considerable amount; or helping access to housing, jobs, accessible local services and open space for many people, especially people with limited resources. There may be impacts on environmental or cultural assets: the core strategy may affect how much the area contributes to mitigating and reducing climate change. It is therefore essential that core strategies are based on thorough evidence.”

Regional spatial strategy

2.3.8 The Regional Spatial Strategy (RSS) for the East of England (the East of England Plan) provides the planning and development strategy for the region to the year 2021. It provides the statutory framework for local authorities to produce local development plans and local transport plans. The RSS was formally adopted and published in May 2008. The most relevant points of the RSS in this context are as follows;

- Provision of an additional 478,000 dwellings across the region between 2001 and 2021 (amended to 508,000 at the Examination in Public). A significant amount of this is focused on the Government’s growth areas: Thames Gateway, London-Stansted-Cambridge-Peterborough, and Milton Keynes.
- Policy H1 sets out the dwelling provision expected of South West Hertfordshire, with a total figure of 14,500 in the draft Plan¹⁴ (amended to 21,200¹⁵ in the final plan following the Examination in Public) to 2021, or an average of 72516 per year pre-amendment and 1,06017 per year post-amendment. In line with national guidance, Policy SS4 states that ‘at least 60% of all new development in the region will take place on or using previously developed land or buildings’. This also needs to be read in conjunction with Policy H3 which encourages joint working, stating the importance of a sub-regionally consistent approach in preventing urban renaissance to be undermined by the early release of greenfield land in neighbouring areas.
- Policy SS7 sets out strategic reviews of green belt boundaries in ‘Hemel Hempstead, including land in Dacorum and probably St Albans District’. The Plan states that the review will have to satisfy national criteria for green belt releases, accord with the spatial strategy, and ensure that sufficient land is identified to avoid the need for further review to meet development needs before 2031. Where reviews cover more than one local authority, they should be undertaken through a joint or co-ordinated approach.
- Policies LA2 and LA4 designate Hemel Hempstead and Watford respectively as Key Centres for Development and Change. For Hemel Hempstead, this involves (among other points) concentration of the 12,000 housing target for Dacorum at the town, and substantial employment growth. Watford’s provisions include (also among other points) continued employment growth and high quality redevelopment including mixed-use schemes.

¹⁴ Of which 6,300 for Dacorum, 3,600 for Three Rivers and 4,600 for Watford.

¹⁵ Of which 12,000 for Dacorum, 4,000 for Three Rivers and 5,200 for Watford.

¹⁶ Of which 315 in Dacorum, 180 in Three Rivers and 230 in Watford.

¹⁷ Of which 600 in Dacorum, 200 in Three Rivers and 260 in Watford.

Hertfordshire Structure Plan Review 1991 – 2011

- 2.3.9 Structure Plans are being superseded by RSS, as part of the 2004 Planning and Compulsory Purchase Act. This plan, though now outdated, required 15,900 new dwellings for South West Hertfordshire (of which 7,200 were to be built in Dacorum, 4,000 in Three Rivers and 4,700 in Watford) between 1991 and 2011. The Structure plan housing requirements policy was not saved.

Dacorum Borough Local Plan

Housing policy

- 2.3.10 At the time of its adoption, the Dacorum Borough Local Plan (2004) identified land for 2,542 of the dwellings to be provided during the Plan period.
- 2.3.11 The Residential Land Commitments Position Statement No. 34 (2007) for the Borough states that Dacorum has residential commitments for 1,907 (net) units as at 1 April 2007.

Three Rivers Local Plan

Housing policy

- 2.3.12 At the time of its adoption, the Three Rivers Local Plan (1996) identified land for 1,845 of the dwellings to be provided during the Plan period.
- 2.3.13 The 'Demonstrating a Five Year Supply of Deliverable Sites for Housing' paper (2007) for the District states that Three Rivers had a five-year supply of land for 948 dwellings on allocated land as at 1 April 2007.

Watford Borough Council Local Plan

Housing policy

- 2.3.14 At the time of its adoption, the Watford Borough Council Local Plan (2003) identified land for 918 of the dwellings to be provided during the Plan period.
- 2.3.15 The Trajectory Data (2007) for the Borough states that Watford had a five-year supply of land for 2,351 dwellings on allocated land as at 31 March 2007.

Other relevant studies

- 2.3.16 The SHLAA also took account of the policy documents, findings and assumptions linked to regeneration areas that had relevance for assessing housing capacity in new development. These included:

Adopted Supplementary Planning Documents (SPDs)

South West Hertfordshire Employment Space Study

.....Strategic Flood Risk Assessments

2.4 Population and Household Change

- 2.4.1 At the same time as setting out housing requirements for the next twenty years it is useful to understand them in the light of population projections and household sizes.

- 2.4.2 Mid-year population estimates for the period 1981 to 2006 show that the population of South West Hertfordshire increased in this period by 16,900 people to 303,400 from a base of 286,500. As the population has been increasing, so have the number of households. Between 1981 and 2001 the number of households in South West Hertfordshire rose by 19,632 from 104,916 to 124,548. However, the average household size has fallen, from 2.73 persons per household (pph) in 1981 to 2.44 pph in 2001.
- 2.4.3 The 2001 Census established the type of households in South West Hertfordshire:
- One person: 27.85% of total households;
 - Married Couple: 19.11%
 - Married Couple with dependent children: 20.43%
 - Cohabiting Couple: 6.01%
 - Cohabiting Couple with dependent children: 3.17%
 - Lone parent: 3.17%
 - Lone parent with dependent children: 5.01%
 - All others: 4.16%)
 - All other households with dependent children: 2.26%¹⁸
- 2.4.4 The pattern from 1991 to 2001 has thus been one of growing population and household figures, but a decline in the average household size. This reflects trends that have been occurring nationwide. Social Trends 2006 undertaken by the Office of National Statistics¹⁹ shows that the average household size nationally has fallen from 2.9 persons in 1971 to 2.4 persons in 2005.
- 2.4.5 This pattern is set to continue. Estimates published by EERA²⁰ provide a population projection of 314,600 for South West Hertfordshire by 2021. The EERA forecasts also estimate that there will be 140,200 households in South West Hertfordshire in 2021 – an increase of 15,652 (12.6%) from 2001 levels. Additionally, household sizes are expected to continue to fall, reaching 2.24 persons per household in 2021.
- 2.4.6 In summary, population levels and household numbers have been increasing, both at the county level and across the study area. However, the number of households has been increasing at a higher rate than population, meaning that household sizes have been decreasing. This reflects national trends and is expected to continue. There is thus a need to provide new housing, particularly to address the growing number of smaller households being formed. However, this does not necessarily mean that all housing provision is for small units as smaller households do not automatically translate into smaller living space.
- 2.4.7 Planning Policy Statement 3: Housing introduced the need for additional housing studies, i.e. Strategic Housing Market Assessments (SHMAs) and Development Economics

¹⁸ Census 2001

¹⁹ Social Trends no. 36, Office for National Statistics, 2006.

²⁰ Demographic Projections for the East of England, EERA, 2006.

Studies (DEs) that can provide local authorities with an evidence base when dealing with these sorts of issues. Both studies have been commissioned for South West Hertfordshire and are due for completion at the end of 2008. The SHMA looks at current and future levels of need and demand and will help inform affordable housing policy within the LDF, particularly targets and tenure split. The DES supports the SHMA and the SHLAA, and assesses the impact of affordable housing provision on the viability of different types and sizes of housing schemes. The significance of this work is that it will influence the type of new housing expected to be delivered in the study area.

3 Study Method

3.1 Overview

3.1.1 As the introduction to this report has highlighted, recent years have seen important developments in the Government's policy approach to planning for new housing.

3.1.2 However, despite the change in approach, there are a number of aspects that remain of fundamental importance:

Relating the analysis of housing potential to accessibility of public transport and local facilities.

3.1.3 Locating new housing within walking distance of facilities and public transport can reduce residents' reliance on the car for all trips. It can also provide the opportunity to reduce the amount of space that needs to be given over to the car and hence contribute to higher-density forms of housing development.

Taking a long term and imaginative view of the potential for new housing.

3.1.4 Surveys to identify land with potential for housing cannot be constrained by issues of immediate land availability or planning policy. Surveys must therefore look beyond sites that are currently vacant to include those that may become suitable in the future, particularly under-used sites. It is only by undertaking such an unconstrained assessment that the full potential for housing can be identified and consideration given to the mechanisms needed to unlock it. It is important to remember that SHLAAs have a 20 year time period, so sites that are not physically available now, could become so over the next two decades.

Using a design-led approach to explore the potential of individual sites for housing.

3.1.5 We consider that a design-led approach, which seeks to achieve a high standard of design and amenity by responding to the unique characteristics of each site and its surrounding context, is the best approach to take rather than a general application of inflexible, generalised planning standards.

3.2 The method - key stages

3.2.1 The following section describes the method used in assessing the housing potential of the settlements selected across the study area. The approach follows the stages listed below and described in more detail in section 3.3.

- 1 Planning the assessment;
- 2 Determining which sources of sites will be included in the assessment;
- 3 Desk-top review of existing information;
- 4 Determining which sites and areas will be surveyed;
- 5 Carrying out the survey;
- 6 Estimating the housing potential of each site;
- 7 Assessing when and whether sites are likely to be developed;

- 8 Review of the assessment;
- 9 Identifying and assessing the housing potential of broad locations (where necessary); and
- 10 Determining the housing potential of windfalls (where justified)

3.3 The ten stages

1. Planning the assessment

- 3.3.1 The first stage in planning the assessment was to develop and refine our outline methodology in discussion with the Council, ensuring conformity with the practice guidance.
- 3.3.2 Comments were invited from interested stakeholders in the area on our approach. Consultation was carried out by sending out letters (see Annexes A and B), utilising the HBF's eastern region membership database as well as contacting other agents, developers, planning consultants and landowners put forward by the council. In addition, neighbouring Local Authorities and Parish councils were contacted. Stakeholders were invited to a consultation workshop was held in Watford.
- 3.3.3 This consultation process invited comment on our approach and also gave respondents an opportunity to suggest sites for inclusion in the study. Responses were received from a range of organisations, including comments both on the approach and on potential sites for consideration in the study.

2. Determining which sources of sites will be included in the assessment

- 3.3.4 The sources of land that were included in the assessment were:
- Vacant and derelict land and buildings
 - Surplus public sector land
 - Land in non-residential use e.g. commercial buildings, car parks
 - Additional housing opportunities in established residential areas, such as under used garage blocks and backland development.
 - Urban extension sites; and
 - Other greenfield land
- 3.3.5 Sites in the planning process were also considered, e.g. land allocated for employment, existing housing allocations, unimplemented permissions, although as noted above, those

already under construction as at 1 April 2007²¹ were discounted to take account of the study's base date (2010) occurring in the future.

3. Desk-top review of existing information

- 3.3.6 In parallel with the consultation process, digital mapping was obtained from the Council as a basis for the desk-based review and fieldwork. Relevant documentation including the Local Plan, previous urban capacity study work and NLUD information was reviewed.
- 3.3.7 Potential sites were identified through the desk-based review of the mapping, documentation and through the consultation process with interested parties as set out above in Task 1. These sites were highlighted on the map base to ensure they were surveyed during the course of the fieldwork.
- 3.3.8 Other potential housing sites within the urban areas (such as apparent gap sites, backland areas etc.) were also identified.

4. Determining which sites and areas will be surveyed

Sites within and adjoining settlements

- 3.3.9 In consultation with the Councils, it was decided that the survey study area would be the entire areas of Dacorum, Three Rivers and Watford. It was agreed that the survey would include both sites within the urban areas and 'greenfield sites', as required by PPS3.
- 3.3.10 Land excluded from the survey at this stage were environmental designation sites; those sites which require special protection due to environmentally valuable characteristics. Areas of Outstanding Natural Beauty (AONB), Sites of Special Scientific Interest (SSSIs), and Ancient Woodland Sites are all examples of such sites.

Outside settlements

- 3.3.11 This category included specific sites identified by developers/ landowners/ stakeholders who were contacted through the consultation process.
- 3.3.12 Each greenfield site identified was assessed against two sets of criteria to assess if the site was 'suitable' for development. These two assessments comprised a physical assessment of suitability (Assessment A) and a sequential assessment of suitability based on nationally and locally-formulated sustainable development criteria (Assessment B). Details of both assessment processes are given below.

²¹ Although the base date for the capacity assessments of the study is 2010 to take account of LDF adoption, the study also required an 'information base date' for information-gathering purposes. This was taken as 1 April 2007. Therefore, if a site had been granted permission before 1 April 2007 but construction started before 1 April 2007, it was discounted, and the capacity was assumed to fall before 2010 and therefore outside our remit. Only if a permission was unimplemented at 1 April 2007 was it included in the SHLAA capacity assessment phase (and then usually in the 0-5 year window). Only those unimplemented permissions with a net dwelling capacity of 5 or more units were assessed, as it was assumed that those of 4 or less units capacity would be implemented before the SHLAA base date of 2010 and therefore outside our remit.

4a. Greenfield Assessment A- Physical Suitability

- 3.3.13 Identification of any national and local planning/ environmental policy constraints was carried out, (Chilterns AONB, Special Area of Conservation, SSSI, local nature reserve, Semi-Natural Ancient Woodland, Historic Park and Garden, Scheduled Ancient Monument, floodplain). Filtering all greenfield sites against these constraints ensures that the SHLAA process is consistent with the approach agreed by the Councils' Sustainability Appraisal consultants (C4S and Halcrow).
- 3.3.14 If the site was found to fall within such a designated area, the site was not taken forward for survey. Other features with relevance for suitability included:
- Existing uses on site
 - Surrounding adjacent uses
 - Physical constraints (pylons, topography, barriers to access)
 - Accessibility
 - Visual impact
 - Size of site (potential capability to provide a critical mass to support new community facilities/ public transport).
 - Impact on coalescence/ strategic gaps.

4b. Greenfield Assessment B: Sustainable Development Locations

- 3.3.15 This assessment was developed by the client team and amended by the consultant team and is based on national guidance on sustainable development as well as a 'common-sense' sequential approach to development locations.
- 3.3.16 While it may be clear from Greenfield Assessment A that a greenfield site is unconstrained in terms of key physical and environmental restrictions this should not imply that all greenfield sites remaining in the pool after Assessment A will be suitable for new housing. For example, there may be strong planning or policy reasons to avoid bringing forward a greenfield housing site (e.g. its size or location). Therefore, there needs to be in place a second layer of greenfield assessment to allow those sites considered to be unsustainable on policy grounds to be rejected.
- 3.3.17 Current guidance from DCLG²² and the Planning Officers Society²³ does not give detailed advice on this second layer of assessment. However, there are key national (e.g. PPSs 1, 3 and 12 etc.), strategic (East of England Plan) and local over-arching considerations that already offer a sound basis against which to select greenfield sites. These will allow a pragmatic and robust means to sift out obviously unsuitable locations.

The five selection criteria agreed upon are as follows:

a) Sites must abut designated settlement boundaries.

²² Strategic Housing Land Availability Assessments – Practice Guidance (July 2007)

²³ Strategic Housing Land Availability Assessment and Development Plan document preparation (January 2008)

3.3.18 Housing should be provided in suitable locations that are accessible and well related to jobs, key facilities and infrastructure. As a consequence, only sites immediately on the edge of settlement boundaries identified in current Local Plans should be considered in detail. National and local policy would suggest that this would generally be the most sustainable location for housing development, is probably the best way to integrate new housing within the existing settlement pattern, and is likely to have the least impact on the wider countryside.

b) Maintenance of the settlement hierarchy.

3.3.19 None of the South West Hertfordshire authorities anticipates that there will be any change to the present settlement hierarchy of the towns and villages. Therefore any site should be rejected that is clearly inappropriate in scale to the size, services available, and role of a settlement. There may, however, be scope to consider smaller parcels of a larger site where they might better relate in scale to that settlement.

c) Strategic growth in Hemel Hempstead.

3.3.20 Regional policy in the East of England Plan to cover the period 2001-2021 and beyond points to major growth around Hemel Hempstead and the need for Green Belt review there (both in Dacorum and in the adjoining St Albans district). Joint working has already begun on considering strategic options for accommodating this scale of growth. Therefore, a range of small, medium and major greenfield sites (such as potential urban extensions/new neighbourhoods) around the town should be considered as part of the assessment. A number of greenfield allocations are already identified in the Dacorum Borough Local Plan 1991-2011 to accommodate future housing development to 2011, and a number are currently being progressed. These should continue to be assessed as potential sites. An upshot of the decision to focus greenfield growth around Hemel Hempstead is the relative unsuitability of major greenfield extensions to Dacorum's other settlements. Therefore, greenfield sites over 5 hectares in size, (i.e. those defined throughout this report as 'large' sites) were normally considered as less suitable if they adjoined settlements in Dacorum that do not form part of the Hemel Hempstead urban area.

d) Greenfield sites on the edge of other towns and larger villages.

3.3.21 Other than Hemel Hempstead in the case of Dacorum, the East of England Plan does not signal any Green Belt review around the towns or large villages in the South West Hertfordshire authorities. However, it is reasonable to assume that decisions will need to be made about the extent to which these settlements should meet their own natural growth, and the possibility of greenfield releases to accommodate local and affordable housing. Therefore, for the purposes of the SHLAA, such sites should be considered.

3.3.22 However, this does not signal the intention for major urban extensions in the case of the towns, rather more modest growth related to the size of the settlement and the availability and range of services. What constitutes 'modest' growth may be assessed on a case-by-case basis, as at the time of setting the greenfield assessment criteria the size and location of the greenfield sites that would be submitted were as yet unknown. More limited opportunities in the larger villages could be considered for the SHLAA, but their scale is likely to be significantly less given the limited ability of these settlements to accommodate substantial growth.

e) Rural exception sites in selected small villages.

3.3.23 The identified selected small villages in the Green Belt and Rural Area (Dacorum only) have the least capacity to accommodate change without harm to their character. However, there may be scope to consider land at the immediate edge of some of these villages (up to a maximum of 15 units on an individual site), where it could potentially

meet an identified local housing need for that settlement (and the rural area surrounding it). This is an approach supported by national policy (PPS 3 Housing (para. 30)).

- 3.3.24 For sites within the Green Belt, the five criteria a) to e) above were applied alongside the standard Green Belt criteria for development that appear in PPG2 at national level.

4c. Areas of housing potential

- 3.3.25 This involved an identification of areas of housing potential in the urban areas of South West Hertfordshire, and comprised three stages to consider the following:

- 3.3.26 Significant physical/ environmental policy constraints that prevent the site from being considered; In South West Hertfordshire, these initially comprised (as indicated on the Local Plan proposals map):

- Category 3 Flood Risk (particularly Category 3b- Functional Floodplain)
- Historic parks and gardens
- Wildlife sites
- Areas of Important Landscape Quality
- Sites of special scientific interest
- Local nature reserves
- Physical/ environmental policy constraints could make the site difficult in terms of development, but might comprise constraints that are not entirely insurmountable. In South West Hertfordshire, these initially included (as indicated on the constraints map):
- Preferred minerals sites
- Category 2 Flood Risk
- Archaeological sites
- Waste sites
- Conservation Areas

5. Carrying out the survey

- 3.3.27 The systematic identification of sites with housing potential was based on the method employed in the 2005 Urban Capacity Study. This consisted of desktop updating of the surveys carried out for the UCS on a street-by-street basis of the town centres and their ped-sheds²⁴, these being areas which often contain significant amounts of potential to accommodate additional dwellings.

²⁴ Ped-shed describes the catchment area encompassing the 800m / ten minute walking distance from the edge of the town centre in all directions.

3.3.28 In addition, the present survey also took account of new planning permissions, new sites for development, new sites submitted by landowners and developers, Council proposals for redevelopment and so on, all of which resulted in the pool of sites in this study differing substantially from the pool of sites in the 2005 Urban Capacity Study.

3.3.29 The output from these stages was a set of settlement maps recording the identified sites supported by a schedule setting out basic site information.

6. Estimating the housing potential of each site

Assessing the suitability of sites

3.3.30 Deciding which of the identified sites were appropriate for housing was a crucial stage in the Study. As the survey work adopted an inclusive approach to the identification of sites and buildings with potential for housing it inevitably resulted in the identification of some sites where housing would not be considered suitable or desirable.

3.3.31 In order to assess the suitability of each site for housing, a 'sieving' process was employed. The definition of suitability set out in the SHLAA practice guidance was used as a guideline for the decision making - that is, a site that 'offers a suitable location for development and would contribute to the creation of sustainable mixed communities' (SHLAA practice guidance p.16).

3.3.32 Decisions were based on national and regional policy restrictions and the need to conform to the principles of sustainable development. Common sense and professional judgement were also employed. More locally-based factors influencing the judgement of suitability included such considerations as policy restrictions, physical constraints (topography, access, infrastructure, etc) and environmental conditions.

3.3.33 Policy justifications for removing sites from the capacity estimates included: retention of land for employment purposes (as established with reference to the South West Hertfordshire Employment Space Study), retention of open space, particularly in areas of open space deficiency, protection of locations where further residential development would be detrimental to the existing character and form of the settlement and retention of land and buildings performing a community function. This was done on the basis of site visits, discussions with Council Officers, review of appropriate supporting studies and professional judgement.

3.3.34 At this stage, **1867** sites were rejected as unsuitable for further analysis (of which 957 were in Dacorum, 423 in Three Rivers and 487 in Watford), accounting for almost 82% of the total number of sites identified.

3.3.35 Reasons for accepting or rejecting the sites are set out in the schedules contained in Volumes 3a, 3b and 3c. The accepted sites are mapped and presented in Volumes 4a, 4b and 4c.

Capacity analysis

3.3.36 In consultation with the Council, the study team redeployed the Design Case Studies used in the 2005 Urban Capacity Study to assess site capacities. In order to ensure that this was the correct approach, the consultant team assessed the density levels of planning permissions granted in South West Hertfordshire between the completion of the Urban Capacity Study and the present. The densities of development granted permission indicated that the 19 sites selected to provide a sample range of different types of development opportunity in a range of locations as part of the Urban Capacity Study were broadly accurate and could be taken forward within the SHLAA process.

- 3.3.37 These design exercises take a “design-led” approach to generating different development options, site capacities and densities. However, on sites over 5 hectares in size, the design-led approach becomes less accurate as a generator of potential capacity and an alternative indicative approach was deployed. Further details of both approaches taken to design analysis are set out in the next section.

Estimates of site capacities

- 3.3.38 Using the densities achieved through the design case study sites and the application of realistic density estimates for larger sites, the capacity of the remaining sites identified as part of the study was estimated. For sites below 5 hectares in size, this was achieved by matching each of the sites to its most similar case study design analysis and for sites above 5 hectares in size, a density was applied based on the density of sustainable residential neighbourhoods elsewhere in England. A full explanation of some of the assumptions underlying our density calculations for sites above 5 hectares in size can be found in Annex C.

- 3.3.39 Chapter 6 provides a detailed explanation of the capacity figures, how they are broken down into wards, and by source type, and how the figures should be interpreted.

7. Assessing when and whether sites are likely to be developed

- 3.3.40 In order to assess whether the sites are deliverable and developable, the shortlist of sites that passed the ‘suitability’ test were then assessed for achievability and availability. The assessment of availability of sites was based on any information available on ownership, land owners’ intentions to develop. For the sites that had been put forward by developers, landowners or agents, this assessment was straightforward. For the majority of sites, however, ownership information was difficult to determine. For achievability, an assessment was carried out, based on the three categories of market, cost and delivery (see para 5.5.1 and 5.5.2). Based on the outcomes of these assessments, the sites were grouped into phases, and recommendations made as to overcoming barriers to delivery.

- 3.3.41 It must be emphasised that phasing judgements on all sites were made in respect only of the site’s suitability, availability and achievability for development. The judgement on phasing for a site does not reflect in any way political will or opinion on if, when or in what order sites might be developed.

8. Review of the assessment

- 3.3.42 A review of the assessment was carried out by the three Councils following the main SHLAA work, to assess, in particular, the level of housing that has been identified and the timescales for the delivery of the sites.

9. Identifying and assessing the housing potential of broad locations (where necessary)

- 3.3.43 In some cases, it was impossible to draw precise boundaries in locations where it was assumed that housing growth would occur during the SHLAA period, but further work (such as, for example, a master planning process) was known to be required before the precise areas suitable for housing within the broad location could be established. In these cases, the broad location is identified in the mapping volumes with a dashed rather than a solid red line and the likely eventual capacity is included in the final capacity figure for the local authority as normal. It should be noted that only some parts of, rather than the entire extents of, these broad locations will be suitable for residential development.

10. Determining the housing potential of windfalls (where justified)

- 3.3.44 PPS3 specifically states a windfall allowance should not be taken into account when assessing the first 10 years of housing supply (PPS3, para 59)
- 3.3.45 The assessment comprised a comprehensive and intensive survey, which sought to identify all physically identifiable sites. This approach, and the fact that there appear to be no 'genuine local circumstances' that mean that a windfall allowance should be included, has led to this source of housing potential being excluded from this assessment.
- 3.3.46 However, the SHLAA is intended to be an ongoing, 'living' database, and windfall should be a source which can be monitored in the future. It is inevitable that housing potential will come forward from a number of sources which are considered 'windfall' in the lifetime of the SHLAA. These sources include small sites, empty homes, conversion of larger homes into flats, and the potential closure of health and education facilities. It is recommended, therefore, that these sources be closely monitored and reviewed, to be factored into the council's housing supply figures.

Reporting

- 3.3.47 The last stage after the ten-step process has been completed is the reporting of the study findings, as presented within this document and the associated volumes containing the site schedules, mapping and design exercises.

4 Exploring housing potential through design

4.1 Introduction

4.1.1 This section sets out the design approach taken by the study towards the development of residential and mixed-use schemes. It explores the potential existing in the study area through indicative solutions prepared for a selection of sites. The purpose of the work was to explore the types of design solution that could result in the creation of sustainable, high quality residential, town centre and local centre environments, and also for larger sites, including sites on the edge of existing settlements and urban extensions. The densities achieved by these schemes were used later in the study to inform estimates of the potential of other opportunities.

4.1.2 It should be again made clear that the sites illustrated were selected to provide a cross section of the sites identified by the study. They are not intended to imply that the Councils favour these particular sites over any others. The analysis is merely intended to illustrate how a design-led approach might be applied in the study settlements, providing a meaningful basis for assessing urban potential.

4.2 Site selection

4.2.1 In selecting sites, the study team sought to choose sites that were representative in terms of:

- Site location: the selection included sites within the ped-sheds (the ten minute walk-in catchments) of the town centres in the study area as well as sites in less accessible locations;
- Site typology and size: the sites selected range from small infill plots to large sites with a range of previous and neighbouring uses; and
- Design issues: each site provided an example of how to address particular challenges in terms of urban design.

4.3 Design approach

Estimating the potential of smaller sites

4.3.1 As set out in section 3 above, two scenarios were developed on each of the case study sites. In accordance with the brief for the study, one scenario (A) reflects current planning policies and design standards as set out in the Development Plan (but ensuring the exercises are PPS3-compliant²⁵). The design exercises have been produced in two-dimensional plan form.

²⁵ The three Local Plans in South West Hertfordshire were all adopted prior to the publication of PPS3 in December 2006. Therefore, there may be discrepancies between PPS3 and the Local Plans. New

- 4.3.2 The two scenarios are sufficiently distinct in order to illustrate the policy choices in terms of developing design standards and in indicating the lower and upper ends of housing potential.
- 4.3.3 A midpoint between the Scenario A and B estimate for each site was then taken to provide an estimate of potential. The purpose of taking a midpoint was to remove the constraints associated with a particular scenario, recognising that some of the sites may come forward at higher densities and others at a lower density. The midpoint allows for this balance.
- 4.3.4 Some of the design case study sites have been developed since they were first employed in the 2005 Urban Capacity Study. The case studies were nevertheless still used in this work. This is because the design case study approach was developed to assess the *theoretical* potential available on each site. Therefore, even if a design case study site has been developed, such a theoretical assessment of potential applied across a wide range of similar sites that are still suitable, available and achievable for development will not be affected. For the same reason, the density achieved by developers on the ground on any case study site was disregarded.
- 4.3.5 The design principles for the study of urban potential for housing are set out below. These build upon the principles contained in the series of Sustainable Residential Quality (SRQ) documents²⁶. SRQ is an approach used to assess the potential for residential development. Llewelyn Davies (now Tribal Urban Studio) pioneered it through the work undertaken for a client group comprising the DETR (now the ODPM), LPAC (London Planning Advisory Committee – now subsumed within the GLA), the Housing Corporation, London Transport, GOL (Government Office for London) and GOSE (Government Office for the South East) between 1997 and 2000. This work was endorsed both in PPG3 and Tapping the Potential. In summary, there are six key principles of SRQ:
- Intensifying the use of urban land and buildings while maintaining and enhancing environmental quality;
 - Encouraging long term quality in new housing design;
 - Maximising the contribution of new housing development to meeting urban regeneration objectives;
 - Creating the greatest possible opportunity for pedestrian access to facilities and transport;
 - Encouraging forms of housing which seek to reduce residents' propensity to own cars; and
 - Enhancing the quality of the urban environment, as well as community and social facilities.
- 4.3.6 The principles also build upon the raft of good practice guidance published by the ODPM (now DCLG) and CABE. These include 'By Design: Better Places to Live' (a companion

Development Plan Documents as required under the Planning and Compulsory Purchase Act 2004 are currently being developed by Dacorum, Three Rivers and Watford.

²⁶ Sustainable Residential Quality: New Approaches to Urban Living (1997), Sustainable Residential Quality: An Approach and Method Statement (1999) and Sustainable Residential Quality: Exploring the Housing Potential of Large Sites (2000).

guide to PPG3 / PPS3) and the design guide 'Safer Places: The Planning System and Crime Prevention'.

- 4.3.7 The case study design exercises follow the principles set out below. However, it must be noted that they do not specifically show the detailed aspects of the schemes such as the building materials used.

Creating quality spaces: streets, squares and parks

- 4.3.8 Perimeter block development is the preferred form for most individual sites. This form of urban development provides a clear public frontage onto streets, while simultaneously offering defensible, private backs.

- 4.3.9 Streets, squares and spaces are designed to provide an appropriate level of enclosure with a positive attitude taken to the design of all public spaces including roads.

Ease of movement

- 4.3.10 Links into (and where appropriate through) sites are crucial in integrating new development with its surroundings. Routes seek to prioritise the needs of pedestrians, cyclists and public transport users as well as those with mobility impairments ahead of private motor vehicle users. Schemes seek to provide access for all, including careful siting of seating and public transport infrastructure to provide for people unable to walk long distances. Scheme design seeks to create streets and places focusing on the form and function of spaces, buildings and people's movement patterns. Development is designed on a permeable grid structure (rather than a cul-de-sac layout) to allow maximum accessibility through the site and make the most of links to the areas surrounding the site. Connections to existing green spaces have been created where possible.

Density and diversity

- 4.3.11 The density of site development should reflect the location, accessibility, size, topography and surroundings of the site. Schemes provide a mixture of dwelling types and a variety of non-residential uses are incorporated where appropriate.

Security and comfort

- 4.3.12 Site design should allow residents to see activities taking place on the street, footpaths and in adjacent parks and other open spaces. This natural surveillance helps make residents and people using public areas feel safer. Buildings and open spaces are arranged to provide a clear definition of public fronts and private backs to provide security and privacy. Streets are designed to encourage motorists to drive at safe speeds and to provide a comfortable environment for all, including those with disabilities. Public spaces are appropriately lit to encourage safe 24-hour use.

Estimating the potential of larger sites

- 4.3.13 The largest sites (i.e. over 5 hectares, and in particular those in lower-density suburban or rural locations) will require space for other uses than simply housing, such as infrastructure, open space, community facilities, etc. Design case studies for larger sites would be a complex undertaking, and would not necessarily be applicable to the other sites in the study as there would be more variation in densities between larger sites than smaller.

- 4.3.14 Now that larger greenfield opportunities for development are back on the policy agenda, a slightly different approach has been taken on sites over 5 hectares in size where specific

development proposals are unknown. This approach is based on ongoing research by Tribal Urban Studio into the density of large-scale sustainable neighbourhoods, which are normally residential-led mixed use but are large enough to accommodate land for community facilities such as open space, schools, hospitals, local shops and so on. In short, a Scenario A density of 25dph and a Scenario B density of 35 dph has been applied to sites between 5 and 10 hectares in size and a Scenario A density of 20 dph with a Scenario B density of 30 dph has been applied to sites over 10 hectares in size. The full reasoning behind these assessments of capacity is explained in detail in Annex C. Like the design case study approach, it should be noted that this methodology provides indicative dwelling capacities only. The actual density achieved on a site may differ depending on development circumstances.

Case studies

4.3.15 The case studies used on the sites are presented within Volume 2 of the Study and applied within Volumes 3a, 3b and 3c.

4.4 Exceptional sites

4.4.1 In the current study, some very large sites, often with only a proportion of the land likely to be suitable for housing, were suitable neither for the application of a design case study nor for large site analysis. In these exceptional cases, we used capacity figures provided by the relevant council or by site promoters. The particular sites in question are:

1. Hemel Hempstead Business Area (site AE47 in Dacorum). The red line is mainly employment land, but as part of the Masterplan developed for the area, Dacorum Borough Council have indicated the likelihood of about 100 residential units to be provided at unspecified locations within the red line as the Masterplan is implemented.
2. Marlowes (site HHC81 in Dacorum). The red line covers most of the town centre of Hemel Hempstead, which is subject to a comprehensive masterplan. As the large site analysis is designed for primarily residential areas rather than town centres, it would be inappropriate to apply it here. Therefore, we have used the developer's own capacity figures.
3. Land West of M1 (site STA02 in Dacorum). The red line includes substantial areas of open space, buffer zones and structural landscaping, as well as a large new proposed employment area. Therefore, the large site analysis would generate an unrealistically high capacity figure and the developer's own capacity figures have been used.
4. Land adjacent to Watford Junction Station (site CAL 30/31 in Watford). The red line covers a large area of employment land and transport-related infrastructure which will be subject to a comprehensive masterplan. Watford Borough Council has indicated that the masterplan is likely to provide approximately 1500 residential units as part of a major mixed-use development.

5 Assessing whether sites are developable and deliverable

5.1 Introduction

5.1.1 In accordance with Stage 7 of the SHLAA Practice Guidance, a deliverability/developability assessment was undertaken in the area. The approach involves three main phases (outlined in Sections 5.3, 5.4 and 5.5), supplemented by some initial background research (Section 5.2). Through consideration for suitability, availability and achievability, a final deliverability assessment is achieved. This chapter puts forward our methodology, with the results set out in the subsequent chapter (Chapter 6 - Capacity Estimates).

5.1.2 A full assessment for each site can be found in Volumes 3a, 3b and 3c of this report (Site Schedules).

5.2 Background Research

Comparable Analysis

5.2.1 We have developed a schedule detailing new build developments that are under construction or have recently been completed across South West Hertfordshire. This has proved beneficial in understanding the type of development occurring in separate locations (e.g. a trend towards flats, mews housing or detached housing) and therefore the anticipated future development of the appraisal sites. The schedule is included in the report as Annex B.

5.3 Assessing suitability for housing

5.3.1 The suitability assessment represents the initial filtering process in assessing whether the sites are developable and deliverable. Following the SHLAA practice guidance, we considered a variety of factors in order to identify which sites were accepted (as suitable) or rejected (as unsuitable). Such considerations included;

- Policy restrictions – such as designations, protected areas, existing planning policy and corporate, or community strategy and policy.
- Physical limitations – this includes factors such ground conditions, land contamination, flood risks etc.
- Potential impact upon area – for example, adverse effects upon landscape features.

5.4 Assessing availability for housing

5.4.1 With the suitable sites now identified, the next process was gauging the availability of the land. Two steps were necessary in order to do this; the first was to determine the ownership of the land and relevant legal issues. The second step, where applicable, was to assess the developer's intentions. The two categories were given a high, medium or low rating, which combined to generate the overall availability of the site.

5.4.2 When considering ownership, a high rating has been given where the ownership of the site is known and medium where the ownership is unknown. In instances where the site is in multiple ownerships or ownership is complex, a low rating has been applied to reflect the potential difficulties which may arise if that site were brought forward.

5.4.3 Sites where availability was impossible to determine were excluded from the phasing process but nevertheless retained in the study, for the two main reasons outlined above; firstly that PPS3 recognises that passing the availability test becomes increasingly problematic the further into the project timescale, and that therefore sites not in the 0-5 year supply of land need not be available for development immediately. Secondly, experience shows that including a site in a study of this nature often has a positive effect on availability for development, even if no intention existed previously.

5.4.4 In order to collect information on developer intentions, letters were sent out in January 2008 to developers and other stakeholders in the area (see Annexes A and B). Correspondence details were attained from HBF's eastern region membership database and the records of all companies known to have submitted residential planning applications or representations to the Local Plan over the last few years. From the feedback, a low, medium or high rating was assigned depending on the anticipated timescales.

5.5 Assessing achievability for housing

5.5.1 Achievability is measured by how likely the prospect is that at a particular point in time housing will be developed on that site. Essentially this is a test of the economic viability of the site, and thus can be split into two parts – market assessment and cost assessment.

5.5.2 Likewise to the availability assessment, the market and cost assessments were given a high, medium or low rating. For the market assessment the optimum outcome was a rating of high, for the cost assessment the optimum outcome was low. Whilst it was possible to view the majority of the sites, we did not inspect those on private restricted land and those where access was difficult.

Market Assessment

Location and surroundings

- Higher values were generally given in areas where there was a significant amount of new development which has improved the residential nature of the area.
- Higher values were also given if sites had a good outlook and were in close proximity to good quality recreational open space (both formal and informal, such as edge of greenbelt locations).
- Lower values were generally applied in areas where there was a significant amount of local authority housing.

Transportation

5.5.3 Sites close to public transportation links were generally given a higher value rating than the likely values generated by existing property, due to the potential for higher density developments.

Site-specific factors

- Where there was evidence of the potential for relatively high-density development, either through evidence from existing adjacent sites, or from the site itself, again the value rating was generally increased.
- Sites with overhead power cables were not generally given a high value rating due to the limiting effect on development height and the blighting effect on residential sale values of living under overhead wires.
- Lower values were generally given if sites adjoined particularly noise-generating land uses, such as adjacent to a railway line.

Cost Assessment**Site uses**

- Higher costs were generally applied where there were heavy, dirty or industrial uses on site, or where there was evidence to suggest there may have been in the past, due to the likely costs involved in remediating such sites to a residential standard.
- Medium costs were generally applied to any site with evidence of fuel pumps or previous petrol station uses due to higher potential costs for cleaning the site.
- Low costs were generally applied to any cleared sites, and those being used for relatively benign uses such as for car parking, open/green spaces or allotments.

Ownership

- Medium costs were generally given where there were active interests on site, which would require relocating or potentially compensating, or where there were a number of different likely property ownerships, which would need resources to assemble. In some cases where sites identified were large this was increased to a high cost rating.
- Medium costs were applied if there were difficulties with access routes, such as being too narrow, unsurfaced or likely to be unsuitable for residential traffic in their current condition, or where they might require land or property acquisitions to improve. The same cost rating was also applied in instances where sharing of access ways might be necessary, such as over existing service yards.
- It was assumed sites such as garage courts and allotments are in single ownership and that they are leased to the occupants. If this is not the case, cost of developing the site may increase, as resources have to be put into land assembly.

Site-specific factors

- Sites with sloping profiles or uneven topography were generally given at least a medium cost rating due to the higher costs involved in either levelling or using construction equipment on uneven sites.

- Sites with overhead power cabling were generally given at least a medium cost rating, if not high, due to the difficulties of using construction equipment under and around high voltage power lines.
- Sites which were already under construction were given a low cost rating as the sites have already been packaged through the development process.

5.6 Overall deliverability assessment and phasing

5.6.1 Suitability, availability and achievability provided the information for the overall judgement as to whether the site was considered deliverable, developable or not currently developable for housing.

5.6.2 Of the deliverable sites, the high, medium or low rankings were used to identify phasing. The sites were divided into those capable of phasing, and those not capable of phasing. Those that were capable of phasing were grouped into 0-5, 6-10, 11-15 or 15-20 year time periods. Those not capable of phasing, but otherwise suitable, achievable and potentially available in the future were grouped in a separate column. As noted above, this unphased capacity does not form a large proportion of total capacity; only 16%.

6 Capacity Estimates- South West Hertfordshire

6.1 Introduction

6.1.1 This chapter introduces the results of the assessment by local authority. It identifies the potential capacity for housing in each local authority, and provides a judgement as to the possible phasing of housing delivery, based on the criteria set out in Chapter 5. For a full assessment of each site, see Volumes 3a, 3b and 3c (Site Schedules) of this report. Chapters 7, 8 and 9 set out the results for each of the three local authorities individually by ward.

6.1.2 It is worth repeating at this point that the SHLAA has identified a large number of sites, all of which are considered to be suitable, available and achievable within a 20 year timeframe. However, the SHLAA is part of the evidence base to inform decisions about site allocations in the LDF process, and does not make recommendations as to which sites should be taken forward; any decisions on which sites will be developed will take into account other factors as well as this report.

6.1.3 The SHLAA has sought to identify all possible housing sites within South West Hertfordshire and it is for the Councils to decide which of these will go towards accommodating the housing requirement for their areas, and to monitor the database regularly as the situation changes.

6.2 Suitable sites

6.2.1 The initial desktop research identified **2,281** possible sites within the study area, 1,867 of which are deemed unsuitable for the reasons discussed in Section 5.

Table 2: Summary of unsuitable/suitable sites in South West Hertfordshire

Local Authority	Identified Sites	Suitable Sites	Unsuitable Sites
Dacorum	1149	192	957
Three Rivers	532	109	423
Watford	600	113	487
Total	2281	414	1867

6.3 Overall Deliverability and Phasing

6.3.1 Following the approach set out in Section 5.5, a full breakdown of phasing for each individual site was collected. The results appear in Table 3.

Table 3: Phasing of all accepted sites in South West Hertfordshire

Local Authority	Capacity assessment (dwelling numbers)					TOTAL
	0-5 years	6-10 years	11-15 years	16-20 years	No phasing period	
Dacorum	3326	6111	2948	8852	1878	23115
Three Rivers	544	2381	236	3	497	3661
Watford	1059	2451	760	521	1468	6260
TOTALS	4,929	10,943	3,944	9,376	3,843	33036

- 6.3.2 This accumulates to a mid-point total of 33,036 potential new dwellings within the 20 year SHLAA timeframe, with **11,719** of these within existing urban areas and the remaining **21,317** on greenfield sites. 4,929 of these dwellings are deliverable within 0-5 years, 10,943 between 6-10 years, 3,944 between 11-15 years, 9,376 between 15-20 years and 3,843 are unphased.
- 6.3.3 Of this potential, Dacorum has the capacity to provide the most housing (23,115 dwellings), followed by Watford (6,260), and then Three Rivers (3,661).
- 6.3.4 In terms of short-term potential (0-5 years), Dacorum (3,326 dwellings) provides the highest capacity. In the 6-10 year phasing period Dacorum again has by far the largest capacity for housing, offering a potential of 6,111 dwellings. Dacorum also shows the most potential capacity beyond the 11 year phasing window. Finally, there is a more even geographical spread of sites where phasing cannot realistically be applied at the moment, but with the largest capacity figure on unphased sites again in Dacorum.
- 6.3.5 A full schedule of all sites can be found in Volumes 3a, 3b and 3c of this assessment.

Table 4: Urban Capacity in South West Hertfordshire

Local Authority	0-5 years			6-10 years			11-15 years			16-20 years			No phasing period			TOTAL
	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	
Dacorum	1435	1828	1632	1166	1605	1386	0	0	0	0	0	0	883	1742	1313	4330
Three Rivers	207	308	258	350	608	479	22	37	30	2	4	3	330	605	467	1236
Watford	811	1308	1060	1864	2826	2345	684	836	760	515	528	522	1059	1876	1468	6154
TOTALS	2453	3444	2949	3380	5039	4209	706	873	790	517	532	524	2272	4223	3247	11719

Table 5: Greenfield Capacity in South West Hertfordshire

Local Authority	0-5 years			6-10 years			11-15 years			16-20 years			No phasing period			TOTAL
	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	
Dacorum	1428	1960	1694	4313	5139	4726	2719	3177	2948	7926	9778	8852	429	701	565	18785
Three Rivers	245	328	287	1510	2294	1902	150	264	207	0	0	0	23	37	30	2425
Watford	0	0	0	82	131	107	0	0	0	0	0	0	0	0	0	107
TOTALS	1673	2288	1981	5905	7564	6734	2869	3441	3155	7926	9778	8852	452	738	595	21317

6.4 Overcoming constraints

- 6.4.1 Where sites have been identified as having specific constraints which would prevent them coming forward in the short term, comments have been made as to how these constraints might be overcome, e.g. improving access, land assembly issues, environmental improvements or policy constraints. This information can be found in Volumes 3a, 3b and 3c: Site Schedules.

7 Capacity Estimates- Dacorum

7.1 Introduction

7.1.1 This chapter introduces the results of the assessment for Dacorum Borough Council's area. It identifies the potential capacity for housing by individual ward, and provides a judgement as to the possible phasing of housing delivery, based on the criteria set out in Chapter 5.

7.2 Suitable sites

7.2.1 The initial desktop research identified **1149** possible sites within Dacorum, 957 of which are deemed unsuitable for the reasons discussed in Section 5.

Table 6: Summary of unsuitable/suitable sites in Dacorum

Ward	Identified Sites	Suitable Sites	Unsuitable Sites
Adeyfield East	55	10	45
Adeyfield West	37	3	34
Aldbury and Wiggington	16	3	13
Apsley	59	23	36
Ashridge	4	1	3
Bennetts End	35	4	31
Berkhamsted Castle	46	11	35
Berkhamsted East	28	6	22
Berkhamsted West	35	11	24
Bovingdon	76	19	57
Boxmoor	46	5	41
Chaulden	34	3	31
Corner Hall	34	8	26
Gadebridge	45	5	40
Grove Hill	59	5	54

Ward (cont)	Identified Sites (cont)	Suitable Sites (cont)	Unsuitable Sites (cont)
Hemel Hempstead Central	83	11	72
Highfield St Pauls	69	7	62
Kings Langley	49	9	40
Leverstock Green	46	5	41
Nash Mills	28	2	26
Northchurch	19	4	15
St Albans ²⁷	2	2	0
Tring Central	37	3	34
Tring East	20	2	18
Tring West	64	13	51
Warners End	29	3	26
Watling	60	12	48
Woodhall	34	2	32
Total	1149	192	957

7.3 Overall Deliverability and Phasing

7.3.1 Following the approach set out in Section 5.5, a full breakdown of phasing for each individual site was collected. The results appear in Table 7.

²⁷ For the purposes of the SHLAA, the land in St Albans district required through the East of England RSS as part of the Dacorum capacity target (in practice, this is land to the east of Hemel Hempstead but to the west of the M1) is treated as if it was an extra ward in Dacorum and referred to throughout as ‘St Albans’.

Table 7: Phasing of all accepted sites in Dacorum

Ward	Capacity assessment (dwelling numbers)					
	0-5 years	6-10 years	11-15 years	16-20 years	No phasing period	TOTAL
Adeyfield East	71	967	0	0	124	1162
Adeyfield West	7	93	0	0	0	100
Aldbury and Wiggington	11	0	0	0	8	19
Apsley	448	650	500	734	292	2623
Ashridge	6	0	0	0	0	6
Bennetts End	3	0	0	0	25	27
Berkhamsted Castle	157	149	0	0	17	322
Berkhamsted East	5	71	0	0	26	102
Berkhamsted West	208	206	0	198	195	808
Bovingdon	345	346	0	0	80	771
Boxmoor	46	0	0	0	39	85
Chaulden	0	423	400	514	1	1338
Corner Hall	90	43	0	0	38	171
Gadebridge	4	400	668	550	13	1635
Grove Hill	328	62	0	0	38	428
Hemel Hempstead Central	684	610	0	0	224	1519
Highfield St Pauls	0	38	0	0	41	79
Kings Langley	32	60	0	0	145	237
Leverstock Green	258	55	0	0	96	409
Nash Mills	200	3	5	7	24	237
Northchurch	0	419	0	0	8	427
St Albans	0	1500	1375	6850	0	9725
Tring Central	0	0	0	0	10	10
Tring East	65	0	0	0	0	65
Tring West	42	8	0	0	119	169

Warners End	260	0	0	0	73	333
Watling	7	9	0	0	243	259
Woodhall	50	0	0	0	0	50
Total	3326	6111	2948	8852	1878	23115

- 7.3.2 This accumulates to a mid-point total of 23,115 potential dwellings in Dacorum within the 20-year SHLAA timeframe, with **4,330** of these within existing urban areas and the remaining **18,785** on greenfield sites. 3,326 of these units are deliverable within 5 years, 6,111 between 6-10 years, 2,948 between 11-15 years, 8,852 between 15-20 years and 1,878 are unphased.
- 7.3.3 Of this potential, the land in St Albans has the capacity to provide the most housing (9,725 dwellings), followed by Apsley (2,623), and then Gadebridge (1,635). The wards with the lowest potential housing capacity are Ashridge and Tring Central, with only 6 and 10 dwellings respectively.
- 7.3.4 In terms of short-term potential (0-5 years), Hemel Hempstead Central (684 dwellings), Apsley (448) and Bovingdon (345) provide the highest capacities. In the 6-10 year phasing period St Albans has the largest capacity for housing, offering a potential of 1500 dwellings. St Albans also shows the most potential capacity beyond the 11 year phasing window. Finally, there is a fairly even geographical spread of sites where phasing cannot realistically be applied at the moment.
- 7.3.5 A full schedule of all Dacorum sites can be found in Volume 3a of this assessment.

Table 8: Urban Capacity in Dacorum

Ward	0-5 years			6-10 years			11-15 years			16-20 years			No phasing period			TOTAL
	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	
Adeyfield East	65	78	71	126	141	134	0	0	0	0	0	0	68	180	124	329
Adeyfield West	7	7	7	6	10	8	0	0	0	0	0	0	0	0	0	15
Aldbury and Wiggington	0	0	0	0	0	0	0	0	0	0	0	0	5	11	8	8
Apsley	63	84	74	88	195	141	0	0	0	0	0	0	177	406	292	507
Ashridge	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	6
Bennetts End	2	3	3	0	0	0	0	0	0	0	0	0	16	33	25	27
Berkhamsted Castle	109	173	141	30	68	49	0	0	0	0	0	0	13	20	17	206
Berkhamsted East	5	5	5	4	7	5	0	0	0	0	0	0	18	34	26	36
Berkhamsted West	46	63	55	104	168	136	0	0	0	0	0	0	20	53	36	227
Bovingdon	87	149	118	44	130	87	0	0	0	0	0	0	15	27	21	226
Boxmoor	36	56	46	0	0	0	0	0	0	0	0	0	29	48	39	85
Chaulden	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1
Corner Hall	66	114	90	31	55	43	0	0	0	0	0	0	16	61	38	171
Gadebridge	2	5	4	0	0	0	0	0	0	0	0	0	6	19	13	17
Grove Hill	0	0	0	48	77	62	0	0	0	0	0	0	20	55	38	100
Hemel Hempstead Central	671	698	684	606	615	610	0	0	0	0	0	0	187	261	224	1519
Highfield St Pauls	0	0	0	27	49	38	0	0	0	0	0	0	24	40	32	70
Kings Langley	24	39	32	0	0	0	0	0	0	0	0	0	86	171	128	160
Leverstock Green	9	15	12	39	70	55	0	0	0	0	0	0	0	0	0	67
Nash Mills	166	233	200	0	0	0	0	0	0	0	0	0	11	20	15	215
Northchurch	0	0	0	0	0	0	0	0	0	0	0	0	5	10	8	8
St Albans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tring Central	0	0	0	0	0	0	0	0	0	0	0	0	7	13	10	10
Tring East	38	38	38	0	0	0	0	0	0	0	0	0	0	0	0	38
Tring West	30	54	42	5	11	8	0	0	0	0	0	0	51	122	87	137
Warners End	0	0	0	0	0	0	0	0	0	0	0	0	54	92	73	73
Watling	0	0	0	9	9	9	0	0	0	0	0	0	55	62	59	68
Woodhall	4	6	5	0	0	0	0	0	0	0	0	0	0	0	0	5
TOTALS	1435	1828	1632	1166	1605	1386	0	0	0	0	0	0	883	1742	1312	4330

Table 9: Greenfield Capacity in Dacorum

Ward	0-5 years			6-10 years			11-15 years			16-20 years			No phasing period			TOTAL
	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	
Adeyfield East	0	0	0	667	1000	833	0	0	0	0	0	0	0	0	0	833
Adeyfield West	0	0	0	43	127	85	0	0	0	0	0	0	0	0	0	85
Aldbury and Wiggington	11	11	11	0	0	0	0	0	0	0	0	0	0	0	0	11
Apsley	363	385	374	507	511	509	500	500	500	387	1080	734	0	0	0	2116
Ashridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bennetts End	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Berkhamsted Castle	16	16	16	77	123	100	0	0	0	0	0	0	0	0	0	116
Berkhamsted East	0	0	0	50	81	66	0	0	0	0	0	0	0	0	0	66
Berkhamsted West	118	190	154	53	86	70	0	0	0	152	245	198	122	196	159	581
Bovingdon	169	284	227	214	304	259	0	0	0	0	0	0	44	74	59	545
Boxmoor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chaulden	0	0	0	413	433	423	400	400	400	251	776	514	0	0	0	1337
Corner Hall	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gadebridge	0	0	0	400	400	400	615	722	668	280	820	550	0	0	0	1618
Grove Hill	259	397	328	0	0	0	0	0	0	0	0	0	0	0	0	328
Hemel Hempstead Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Highfield St Pauls	0	0	0	0	0	0	0	0	0	0	0	0	6	12	9	9
Kings Langley	0	0	0	43	77	60	0	0	0	0	0	0	13	21	17	77
Leverstock Green	176	316	246	0	0	0	0	0	0	0	0	0	69	124	96	342
Nash Mills	0	1	1	2	3	3	4	5	5	6	7	7	8	9	9	23
Northchurch	0	0	0	344	494	419	0	0	0	0	0	0	0	0	0	419
St Albans	0	0	0	1500	1500	1500	1200	1550	1375	6850	6850	6850	0	0	0	9725
Tring Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tring East	15	38	27	0	0	0	0	0	0	0	0	0	0	0	0	27
Tring West	0	0	0	0	0	0	0	0	0	0	0	0	19	46	32	32
Warners End	260	260	260	0	0	0	0	0	0	0	0	0	0	0	0	260
Watling	7	7	7	0	0	0	0	0	0	0	0	0	148	220	184	191
Woodhall	35	56	46	0	0	0	0	0	0	0	0	0	0	0	0	46
TOTALS	1429	1961	1695	4313	5139	4726	2719	3177	2948	7926	9778	8852	429	701	565	18785

Table 10: Phasing of Individual Sites in Dacorum

Site type	0-5 years	6-10 years	11-15 years	16-20 years	No phasing period
Urban	<p>AE 45, AE 54, AE 55, AW 37, APS 20, APS 27, APS 51, APS 58, ASH 4, BEN 35, BC2, BC 38, BC 42, BC 44, BE 28, BW 3, BW 34, BW 35, BOV 3, BOV 43, BOV 46, BOV 59, BOV 60, BOV 68, BOV 72, BOX 8, BOX 20, CH 16a, CH 18, CH 29, CH 30, CH 32, GAD 44, HHC 21, HHC 31, HHC 32, HHC 74, HHC 78, HHC 80, HHC 81, KL 15, LG 46, NM 13, TE 8, TW 35, TW 42, TW 54, WH 7,</p>	<p>AE 41, AE 47, AW 36, APS 16, APS 41, APS 42, APS 43, APS 55, BC 41, BE 16, BW 24, BOV 74, CH 24, GH 58, HHC 7, HHC 74, HSP 2, HSP 67, LG 42, TW 4, WA 19,</p>			<p>AE 34, AE 35, AE 39, ALD 1, ALD 6, APS 3, APS 5, APS 6, APS 7, APS 9, APS 31, APS 32, APS 38, APS 39, BEN 19, BEN 30, BEN 31, BC 1, BC 12, BC 20, BC 30, BE 7, BE 12, BE 15, BW 7, BW 16, BW 29, BOV 2, BOV 41, BOV 44, BOV 48, BOX 3, BOX 37, BOX 42, CHA 25, CH 15, CH 28, GAD 4, GAD 39, GH 52, GH 55, HHC 28, HHC 45, HHC 47, HSP 14, HSP 17, HSP 32, HSP 41, KL 6, KL 10, KL 21, KL 25, KL 27, KL 38, NM 15, N1, TC 20, TC 29, TC 33, TW 6, TW 8, TW 10, TW 19, TW 23, TW 46, WE 25, WE 29, WA 9, WA 21, WA 31, WA 33A, WA 36, WA 37, WA 40,</p>
Greenfield	<p>ALD 16, APS 33, APS 34, BC 45, BW 33, BOV 64, BOV 73, BOV 75, BOV 76, GH 3, GH 59, LG 16, LG 41, TE 17, WE 28, WA 55, WH 2,</p>	<p>AE 6, AE 44, AW 25, APS 52, APS 54, APS 56, BC 43, BE 27, BW 25, BOV 61, BOV 70, CHA 28, CHA 31, GAD 43, KL 48, N 13, N 15, N 16, STA 1, STA 2,</p>	<p>APS 54, CHA 28, GAD 42, GAD 43, STA 1, STA 2,</p>	<p>APS 54, BW 26, CHA 28, GAD 43, STA 2,</p>	<p>BW 30, BOV 56, HSP 68, KL 3, LG 44, TW 14, TW 25, TW 63, WA 22, WA 45, WA 51,</p>

8 Capacity Estimates- Three Rivers

8.1 Introduction

8.1.1 This chapter introduces the results of the assessment for Three Rivers District Council's area. It identifies the potential capacity for housing by individual ward, and provides a judgement as to the possible phasing of housing delivery, based on the criteria set out in Chapter 5.

8.2 Suitable sites

8.2.1 The initial desktop research identified **532** possible sites within Three Rivers, 423 of which are deemed unsuitable for the reasons discussed in Section 5.

Table 11: Summary of unsuitable/suitable sites in Three Rivers

Ward	Identified Sites	Suitable Sites	Unsuitable Sites
Abbots Langley	36	9	27
Ashridge	43	4	39
Bedmond and Primrose Hill	32	10	22
Carpenders Park	14	2	12
Chorleywood East	6	0	6
Chorleywood West	31	9	22
Croxley Green	66	13	58
Croxley Green North	5	4	1
Croxley Green South	32	14	18
Eastbury	18	0	18
Hayling	0	0	0
Langleybury	15	4	11
Leavesden	4	3	1
Maple Cross	31	7	24
Northwick	42	6	36

Oxhey Hall	17	2	15
Penn	36	8	28
Rickmansworth	72	16	56
Rickmansworth West	31	2	29
Sarratt	1	1	0
Total	532	109	423

8.3 Overall Deliverability and Phasing

8.3.1 Following the approach set out in Section 5.5, a full breakdown of phasing for each individual site was collected. The results appear in Table 12.

Table 12: Phasing of all accepted sites in Three Rivers

Ward	Capacity assessment (dwelling numbers)					TOTAL
	0-5 years	6-10 years	11-15 years	16-20 years	No phasing period	
Abbots Langley	1	164	54	0	19	238
Ashridge	1	54	20	0	30	104
Bedmond and Primrose Hill	78	110	0	0	136	324
Carpenders Park	0	197	0	0	0	197
Chorleywood East	0	0	0	0	0	0
Chorleywood West	7	81	0	3	21	112
Croxley Green	2	3	10	0	46	61
Croxley Green North	149	233	153	0	4	538
Croxley Green South	104	40	0	0	81	225
Eastbury	0	0	0	0	0	0
Hayling	0	0	0	0	0	0
Langleybury	91	22	0	0	0	113
Leavesden	0	739	0	0	0	739
Maple Cross	4	248	0	0	19	271
Northwick	0	272	0	0	41	313
Oxhey Hall	23	0	0	0	47	69
Penn	39	0	0	0	22	61
Rickmansworth	29	180	0	0	33	241
Rickmansworth West	7	39	0	0	0	47
Sarratt	8	0	0	0	0	8
Total	544	2381	236	3	497	3661

8.3.2 This accumulates to a mid-point total of 3661 potential dwellings in Three Rivers within the 20 year SHLAA timeframe, with **1236** of these within existing urban areas and the remaining **2425** on greenfield sites. 544 of these dwellings are deliverable within 5 years, 2381 between 6-10 years, 236 between 11-15 years, 3 between 15-20 years and 497 are unphased.

8.3.3 Of this potential, Leavesden has the capacity to provide the most housing (739 dwellings), followed by Croxley Green North (538), and then Bedmond and Primrose Hill (324). The wards with the lowest potential housing capacity are Chorleywood East, Eastbury and Hayling, with no housing potential between them.

8.3.4 In terms of short-term potential (0-5 years), Croxley Green North (149 dwellings), and Croxley Green South (104) provide the highest capacities. In the 6-10 year phasing period Leavesden has the largest capacity for housing, offering a potential of 739 dwellings. Croxley Green North shows the most potential capacity beyond the 11 year phasing window. Finally, the sites where phasing cannot realistically be applied at the moment are spread fairly evenly geographically across Three Rivers.

8.3.5 A full schedule of all Three Rivers sites can be found in Volume 3b of this assessment.

Table 13: Urban Capacity in Three Rivers

Ward	0-5 years			6-10 years			11-15 years			16-20 years			No phasing period			TOTAL
	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	
Abbots Langley	1	1	1	10	21	16	0	0	0	0	0	0	15	24	19	36
Ashridge	1	1	1	0	0	0	15	24	20	0	0	0	0	0	0	21
Bedmond and Primrose Hill	5	9	7	70	126	98	0	0	0	0	0	0	97	175	136	241
Carpenders Park	0	0	0	15	27	21	0	0	0	0	0	0	0	0	0	21
Chorleywood East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chorleywood West	7	7	7	0	0	0	0	0	0	2	4	3	16	26	21	31
Croxley Green	2	2	2	2	3	3	7	13	10	0	0	0	31	61	46	61
Croxley Green North	0	0	0	0	0	0	0	0	0	0	0	0	3	5	4	4
Croxley Green South	86	122	104	29	51	40	0	0	0	0	0	0	55	106	81	225
Eastbury	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hayling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Langleybury	21	28	24	17	27	22	0	0	0	0	0	0	0	0	0	46
Leavesden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maple Cross	3	5	4	0	0	0	0	0	0	0	0	0	13	24	19	23
Northwick	0	0	0	101	151	126	0	0	0	0	0	0	30	51	41	167
Oxhey Hall	14	32	23	0	0	0	0	0	0	0	0	0	33	60	47	69
Penn	28	51	39	0	0	0	0	0	0	0	0	0	16	27	22	61
Rickmansworth	27	31	29	76	152	114	0	0	0	0	0	0	20	45	33	176
Rickmansworth West	5	10	7	29	49	39	0	0	0	0	0	0	0	0	0	47
Sarratt	6	10	8	0	0	0	0	0	0	0	0	0	0	0	0	8
TOTALS	207	308	258	350	608	479	22	37	30	2	4	3	330	605	467	1236

Table 14: Greenfield Capacity in Three Rivers

Ward	0-5 years			6-10 years			11-15 years			16-20 years			No phasing period			TOTAL
	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	
Abbots Langley	0	0	0	110	186	148	42	66	54	0	0	0	0	0	0	202
Ashridge	0	0	0	38	69	54	0	0	0	0	0	0	23	37	30	83
Bedmond and Primrose Hill	49	93	71	7	18	13	0	0	0	0	0	0	0	0	0	84
Carpenders Park	0	0	0	147	205	176	0	0	0	0	0	0	0	0	0	176
Chorleywood East	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chorleywood West	0	0	0	62	100	81	0	0	0	0	0	0	0	0	0	81
Croxley Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Croxley Green North	149	149	149	194	271	233	108	198	153	0	0	0	0	0	0	534
Croxley Green South	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Eastbury	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hayling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Langleybury	47	86	67	0	0	0	0	0	0	0	0	0	0	0	0	67
Leavesden	0	0	0	585	893	739	0	0	0	0	0	0	0	0	0	739
Maple Cross	0	0	0	206	290	248	0	0	0	0	0	0	0	0	0	248
Northwick	0	0	0	114	178	146	0	0	0	0	0	0	0	0	0	146
Oxhey Hall	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Penn	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rickmansworth	0	0	0	46	85	65	0	0	0	0	0	0	0	0	0	65
Rickmansworth West	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sarratt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	245	328	287	1510	2294	1902	150	264	207	0	0	0	23	37	30	2425

Table 15: Phasing of Individual Sites in Three Rivers

Site type	0-5 years	6-10 years	11-15 years	16-20 years	No phasing period
Urban	AB 23, AS 23, BP 9, CW 1a, CW 1b, CW 19B, CW 21B, CGS 5, CGS 9, CGS 16b, CGS 22, CGS 23, CGS 30, CG 20, LB 5, LB 15, MC 20a, MC 25, OH 17, P 22, P 35, R 51, R 57, RW 22, SA 1	AB 21, AB 29, BP 5, BP 32, CP 10, CGS 12, CGS 28, CG 25, LB 14, LV 1, LV 2, LV 3, NW9, NW 42, R 9, R 13a, R 31, R 53, R 58, RW 32	AS 41, CG 39,	CW 25,	AB 2, AB 5, AB 10, AB 32, BP 3, BP 6, BP 17, BP 25, CW 6, CW 15, CW 16, CGN 2, CGS 2, CGS 4, CGS 6, CGS 13, CGS 21, CGS 29, CG 1, CG 8, CG 11, CG 30, CG 44, MC 1, MC 7, MC 21, NW 2, NW 33, NW 41, OH 11, P 1, P 14, P 27, P 32, P 33, R 18, R 20B, R 36, R 47, R 52, R 55
Greenfield	BP 28, BP 29, CGN 1, LB 12,	AB 36, AS 43, BP 27, CP 14, CW 27, CGN 4, MC 30, MC 31, NW 39, R 73, R 74,	AB 35, CGN 5,		AS 44,

9 Capacity Estimates- Watford

9.1 Introduction

9.1.1 This chapter introduces the results of the assessment for Watford Borough Council’s area. It identifies the potential capacity for housing by individual ward, and provides a judgement as to the possible phasing of housing delivery, based on the criteria set out in Chapter 5.

9.2 Suitable sites

9.2.1 The initial desktop research identified **600** possible sites within Watford, 487 of which are deemed unsuitable for the reasons discussed in Section 5.

Table 16: Summary of unsuitable/suitable sites in Watford

Ward	Identified Sites	Suitable Sites	Unsuitable Sites
Callowland	35	25	10
Central	109	72	37
Holywell	59	53	6
Leggatts	38	31	7
Meriden	49	45	4
Nascot	58	53	5
Oxhey	49	42	7
Park	56	45	11
Stanborough	46	39	7
Tudor	21	17	4
Vicarage	33	26	7
Woodside	47	39	8
Total	600	113	487

9.3 Overall Deliverability and Phasing

9.3.1 Following the approach set out in Section 5.5, a full breakdown of phasing for each individual site was collected. The results appear in Table 17.

Table 17: Phasing of all accepted sites in Watford

Ward	Capacity assessment (dwelling numbers)					TOTAL
	0-5 years	6-10 years	11-15 years	16-20 years	No phasing period	
Callowland	36	656	500	500	105	1798
Central	165	442	24	13	377	1021
Holywell	82	213	0	0	193	488
Leggatts	231	15	9	0	96	351
Meriden	130	10	0	0	89	229
Nascot	248	16	0	8	69	341
Oxhey	0	123	0	0	180	303
Park	34	266	11	0	275	587
Stanborough	21	19	0	0	5	44
Tudor	0	53	216	0	0	269
Vicarage	0	369	0	0	46	415
Woodside	112	270	0	0	33	415
TOTALS	1059	2451	760	521	1468	6260

9.3.2 This accumulates to a mid-point total of 6,260 potential dwellings in Watford within the 20 year SHLAA timeframe, with **6,153** of these within existing urban areas and the remaining **107** on greenfield sites. 1,059 of these dwellings are deliverable within 5 years, 2,451 between 6-10 years, 760 between 11-15 years, 521 between 15-20 years and 1,468 are unphased.

9.3.3 Of this potential, Callowland has the capacity to provide the most housing (1,798 dwellings), followed by Central (1,047), and then Park (587). The wards with the lowest potential housing capacity are Stanborough and Leggatts, with only 44 and 229 dwellings respectively.

9.3.4 In terms of short-term potential (0-5 years), Nascot (248 dwellings), Leggatts (231) and Central (165) provide the highest capacities. In the 6-10 year phasing period Callowland has by far the largest capacity for housing, offering a potential of 656 dwellings. Callowland also shows the most potential capacity beyond the 11 year phasing window. Finally, there is a fairly even geographical spread of sites where phasing cannot realistically be applied at the moment.

9.3.5 A full schedule of all Watford sites can be found in Volume 3c of this assessment.

Table 18: Urban Capacity in Watford

Ward	0-5 years			6-10 years			11-15 years			16-20 years			No phasing period			TOTAL
	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	
Callowland	25	48	37	609	703	656	500	500	500	500	500	500	69	141	105	1797
Central	154	177	166	316	569	443	20	29	24	10	16	13	298	456	377	1022
Holywell	82	82	82	174	251	213	0	0	0	0	0	0	129	257	193	487
Leggatts	156	306	231	11	18	15	7	11	9	0	0	0	74	118	96	350
Meriden	89	171	130	8	12	10	0	0	0	0	0	0	60	118	89	229
Nascot	178	318	248	9	23	16	0	0	0	5	12	8	53	85	69	341
Oxhey	0	0	0	68	177	123	0	0	0	0	0	0	130	230	180	303
Park	27	42	35	119	201	160	11	11	11	0	0	0	190	361	275	481
Stanborough	16	25	21	15	23	19	0	0	0	0	0	0	3	6	5	44
Tudor	0	0	0	35	70	53	147	286	216	0	0	0	0	0	0	269
Vicarage	0	0	0	362	377	370	0	0	0	0	0	0	28	64	46	416
Woodside	85	139	112	137	402	270	0	0	0	0	0	0	25	42	33	415
TOTALS	812	1308	1060	1863	2826	2344	684	836	760	515	528	521	1059	1876	1468	6153

Table 19: Greenfield Capacity in Watford

Ward	0-5 years			6-10 years			11-15 years			16-20 years			No phasing period			TOTAL
	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	A	B	Midpoint	
Callowland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Central	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Holywell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Leggatts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Meriden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nascot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oxhey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Park	0	0	0	82	131	107	0	0	0	0	0	0	0	0	0	107
Stanborough	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tudor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vicarage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Woodside	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	0	0	82	131	107	0	0	0	0	0	0	0	0	0	107

Table 20: Phasing of individual sites in Watford

Site type	0-5 years	6-10 years	11-15 years	16-20 years	No phasing period
Urban	CAL 3, CAL 24, CAL 35, CAL 38, CEN 53, CEN 73, CEN 97, CEN 98, CEN 107, CEN 123, HOL 8, LEG 24, LEG 41, MER 291, NAS 29, NAS 57, PAR 3, PAR 48, PAR 49, STA 22, STA 44, WOD 34, WOD 35, WOD 41, WOD 44, WOD 45	CAL 10, CAL 23, CAL 30/31, CAL 37, CEN 11, CEN 15, CEN 18, CEN 20, CEN 21, CEN 26, CEN 28, CEN 70, CEN 80, CEN 91, CEN 118, CEN121, CEN 122, CEN 124, HOL 3b, HOL 4, LEG 9, MER 36, NAS 58, OXH 24, OXH 29, OXH 37, OXH 46, PAR 24, PAR 46, STA 23, STA 26, STA 36, STA 42, TUD 19, VIC 17, VIC 30, WOD 47,	CAL 30/31, CEN 94, CEN110, LEG 39, PAR 51, TUD 16, TUD 20, TUD 21,	CAL 30/31, CEN 119, NAS 26,	CAL 19, CAL 21, CEN 04, CEN 10, CEN 14, CEN 16, CEN17, CEN 57, CEN59, CEN 60, CEN 88, CEN 89, CEN93, CEN 95, CEN 116, CEN 117, HOL 6, HOL 7, HOL 8, LEG 20, LEG 27, LEG 40, MER 18, MER 48, NAS 18, OXH 7, OXH 11, OXH 28, PAR 34, PAR, 37b, PAR 37c, PAR 41, STA 21, VIC 5, VIC 6, VIC 9, VIC 21, VIC 22, WOD 21, WOD 43,
Greenfield		PAR 53,			

10 SHLAA Monitoring and Updating

10.1.1 By definition, the SHLAA is a snapshot in time, providing the estimated housing potential from the situation at the period of time that the study was undertaken. With this in consideration, it is therefore essential that the findings and assumptions underlying the assessment should be monitored over time; tracking the progress of sites and number of completions, as well as any possible new additions to housing sites. This section sets out an approach to monitoring, using the objective of 'Plan, Monitor, Manage' (PPS3 – *Housing*) as grounding. This is in accordance with our intention for the SHLAA to constitute an ongoing 'living' database, as mentioned in Section 3.

10.2 Annual Monitoring Reports – Local Authorities

10.2.1 In order to supply a flexible, responsive supply of sites, it is necessary to monitor the supply of deliverable sites on an annual basis. This is achieved through Annual Monitoring Reports, considered essential in meeting the objectives of PPS3. Such reports involve Local Planning Authorities performing the following tasks;

- On a regular and frequent basis, monitoring housing planning permissions granted, completions, whether on previously-developed land or greenfield in both urban and rural communities.
- Reporting on progress against the housing and previously-developed land trajectories and where relevant targets and design quality objectives.
- Setting out the actions to be undertaken where actual performance does not reflect the housing and previously-developed land trajectories and, where relevant, target, and is outside of the specified acceptable ranges.
- Considering whether it is necessary to update the housing market and land availability evidence bases and review relevant Local Development Documents in order to be able to continue to maintain an up-to-date supply of deliverable sites.

10.3 Annual Monitoring Reports – Regional Bodies

10.3.1 As well as monitoring from Local Authorities, it is also essential that Regional Planning Bodies regularly scrutinise the housing potential of the area, and ensure that its full potential within the regional setting is being utilised.

10.3.2 It is therefore necessary that Regional Planning bodies complete Annual Monitoring Reports, which should be based upon undertaking the following tasks;

- On a regular and frequent basis, monitoring progress across the region in terms of housing planning permissions granted, completions, whether on previously-developed land or greenfield and in both urban and/or rural communities.
- Reporting on progress against the housing and previously-developed land trajectories and, where relevant, targets and design quality objectives.
- Setting out the actions to be undertaken at the regional level where actual performance does not reflect the regional housing and previously developed land trajectories, and where relevant, targets

- Considering delivery performance in the context of the relevant national policy objectives.

10.4 Towards a Monitoring Framework

- 10.4.1 Whilst completing Annual Monitoring Reports, it is crucial that sites at every stage of the development pipeline are considered. This incorporates those sites identified with long-term potential in the SHLAA, through to their entry into the five years supply of deliverable sites, and to their eventual completion. A framework that facilitates this kind of monitoring is illustrated graphically in Figure 3. This should be read in conjunction with Table 21.
- 10.4.2 Each horizontal Block of Figure 3 (A to N) corresponds to a specific stage of the planning process; with Block A being the most advanced (completions prior to assessment) and Block N being the least advanced (capacity beyond 15 years and unphased sites). The categories of each block are provided in Table 21.
- 10.4.3 The columns separated by dotted lines in the chart represent different stages of deliverability/developability as identified by the SHLAA. From left to right the columns are;
- Completions prior to the SHLAA²⁸
 - Deliverable sites (0-5 years)
 - Developable sites (6-10/11-15 years)
 - Developable sites (15+ years and unphased)
 - Sites that require monitoring (in particular, the unphased sites)
- 10.4.4 The 'sites that require monitoring' column also includes unsuitable sites and windfall sites. Unsuitable sites are those which were rejected in the suitability filter of the SHLAA; such sites need to be monitored in case conditions change meaning the sites can offer housing potential. Windfall sites were not considered in this assessment, but it is conceivable they may be included in future assessments or monitoring exercises.
- 10.4.5 A fully robust monitoring framework will also need to consider the timings of individual sites within each 5-year period.
- 10.4.6 Due to the fact that there is often overlap between the stages of the planning process and the different stages identified by the SHLAA, many of the blocks overlap the columns.
- 10.4.7 The three-stage flow chart at the base of Figure 3 demonstrates what proactive steps can be taken in order to accelerate the supply of deliverable sites. This is not to say that the specific circumstances of each site can be modified. However, through regular monitoring, and staying alert to the degree of suitability, availability and achievability of each site,

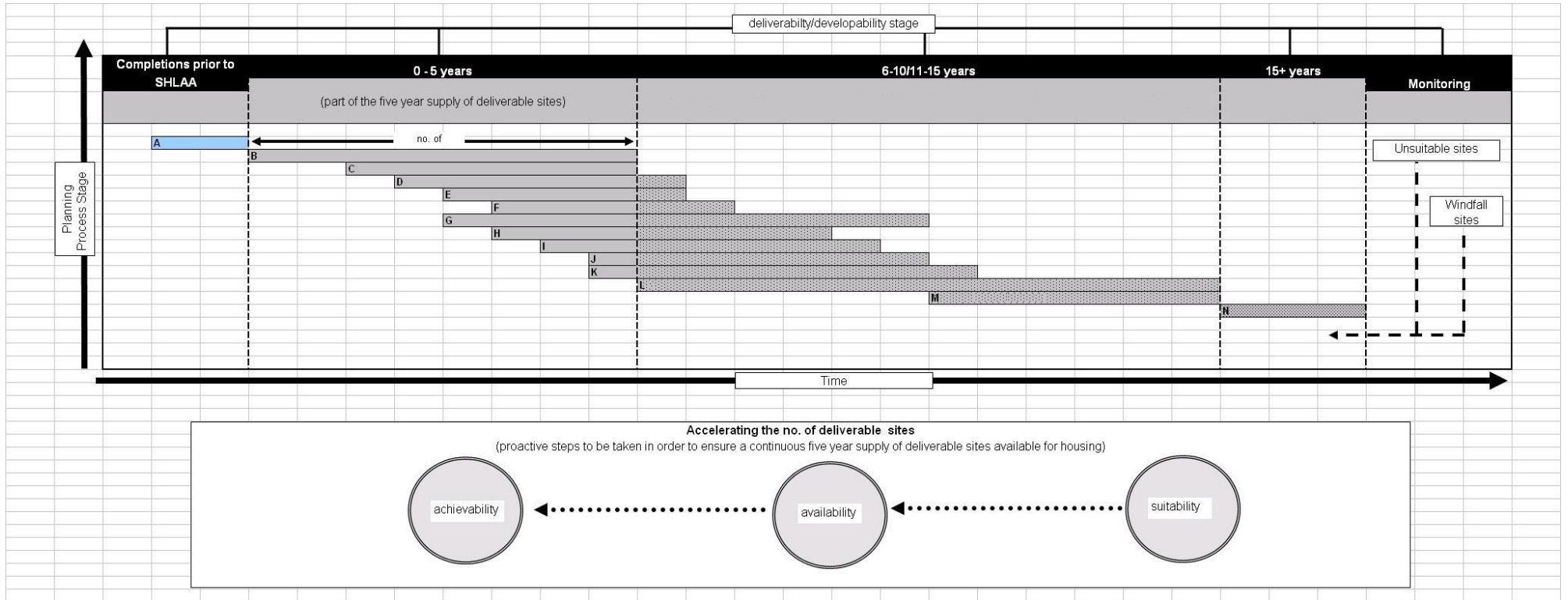
²⁸ As noted previously, although the base date for the capacity assessments of the study is 2010 to take account of LDF adoption, the study also considered the issue of (although did not include in the capacity figures) likely completions between 2007 and 2010. Only if a permission was for 5 net dwellings or more and unimplemented at 1 April 2007 was it included in the SHLAA capacity assessment phase, as it was assumed that most, if not all, of the ones of 4 units and smaller would be under construction or complete by 2010. However, these sites not included in the capacity figures for the SHLAA still require monitoring as part of the overall process, with a view to bringing them into the housing supply at a later date.

when circumstances do change and housing potential does emerge, response time will be minimal. Therefore, in contrast to a reliance on infrequent large-scale land assessments, this method of continuous monitoring ensures there is little or no lag-time between the emergence of potential housing sites, their identification and their subsequent progress into the planning process.

Table 21: Categories of sites within the planning process

Block	Stage of Planning Process
A	Number. of completions 2001 – 2007 (prior to capacity assessment)
B	Number of units completed post 2007
C	Number of units under construction
D	Number of units on sites granted full consent
E	Number of units on sites granted outline consent
F	Number of units on sites where consent has been granted for part of the land area
G	Number of units on sites subject to planning applications
H	Number of units on sites where only part of the land area is subject to an application
I	Number of units on sites where applications have been refused, withdrawn or subject to appeal
J	Number of units on sites subject to developer interest
K	Number of units on other sites allocated in the local plan review / LDF for housing
L	Number of units on sites phased in the period 6-10 years
M	Number of units on sites phased in the period 11-15 years
N	Number of units on sites phased beyond 15 years and unphased sites

Figure 3: SHLAA Monitoring Framework



Annex A: Consultation Letter

Dear Sir/Madam,

STRATEGIC HOUSING LAND AVAILABILITY ASSESSMENT FOR DACORUM BOROUGH COUNCIL, THREE RIVERS DISTRICT COUNCIL AND WATFORD BOROUGH COUNCIL

Consultants Llewelyn Davies Yeang, in association with Atis, have been commissioned by Dacorum Borough Council, Three Rivers District Council and Watford Borough Council to undertake a Strategic Housing Land Availability Assessment (SHLAA) for South West Hertfordshire covering the period 2006 - 2026.

As a stakeholder in the SHLAA process, you are hereby invited to a stakeholder consultation event where you will have the opportunity to speak with the consultants and planners preparing the Assessment. The consultation will take place at Beechen Grove Baptist Church in Watford at 10am on Friday 1st February. Please let us know if you are interested in coming to the stakeholder consultation event by contacting Tracey Kavanagh at Llewelyn Davies Yeang either by post at the above address, on 0207 612 9409 or at t.kavanagh@ldavies.com.

Background

Llewelyn Davies Yeang previously undertook an Urban Capacity Study for South West Hertfordshire that was published in 2005. However, changes in the Government's national planning policy framework mean that an up to date assessment needs to be undertaken in order to inform, along with other technical studies, the local Councils' Core Strategy Development Plan Documents (DPDs) and Site Allocations DPDs, which will have to identify housing capacity to cover a 15-year period.

Changes in Government guidance

The Government's Planning Policy Statement 3 (PPS3): Housing, developed in response to recommendations in the Barker Review of Housing Supply (March 2004), requires a step-change in housing delivery, through a new, more responsive approach to land supply at the local level.

The new PPS3 requires that Local Planning Authorities should undertake SHLAAs, which look at housing potential across a wider area and consider developability in more detail.

Purpose of the SHLAA

The purpose of the SHLAA is to assess the potential to accommodate new housing development within, or adjacent to, defined urban areas, with the priority being to reuse previously developed land and make better use of existing land and buildings. The study methodology will follow Government guidance outlined in Strategic Housing Land Availability Assessment: Practice Guidance (published by the Department of Communities and Local Government during July 2007) which is available for download at:

<http://www.communities.gov.uk/archived/publications/planningandbuilding/landavailabilityassessment>

This letter is intended to inform you of the study and the consultation event, to welcome comment on methodological aspects and to provide you with an opportunity to identify any land and buildings which you consider may have potential for housing development up to 2026 within the three councils' areas.

A summary of our method statement is attached. If you are interested, we can provide you with a more detailed note setting out our approach.

If you intend to attend the stakeholder consultation event or should you have any other comments or suggestions please contact Tracey Kavanagh as soon as possible so that the information can be fed into the study timetable. We look forward to receiving any comments that you may have.

Yours faithfully

For Llewelyn Davies Yeang on behalf of Dacorum Borough Council, Three Rivers District Council and Watford Borough Council

Will Teasdale
Project Manager – SHLAA

Encs.

Annex B: List of Consultees

The following persons and organisations were consulted in the preparation of this Strategic Housing Land Availability Assessment for South West Hertfordshire:

Abbot's Hill School

Abbots Langley Parish Council

Adam Rowe

Aitchison Raffety

Akeman Property Company Ltd / co Aitchisons

Aldbury Parish Council

Alfred McAlpine Homes Ltd

Andrew Stannard

Anglia Housing Group

APLC

Ashley House Plc

Ashlyns School

Ashridge Estates

Ashworth Homes Ltd

Atkins Ltd

Banner Homes

Barker Parry Town Planning

Barratt Homes

Barton Willmore

BDP

Beechwood Homes Ltd

Bellway Homes

Berkhamsted Town Council

Bidwells Property Consultants

Bovingdon Parish Council

Brasier Harris

Brian Barber Associates

British Gas Transco

British Telecom c/o RPS

British Waterways

Brown & Merry

Buxton Homes

C.B. Richard Ellis

Cala Homes (South) Ltd

Capital Shopping Centres Plc

Carter Jonas

Castles

CB Richard Ellis Limited

Cesaere Nash & Partners

Chalfont St Giles Parish Council

Chalfont St Peter Parish Council

Chenies Parish Council

Chesterton

Chilterns Conservation Board Office

Chipperfield Parish Council

Chorleywood Parish Council

Cole Flatt & Partners

Colin Howard

Colliers CRE

Commercial Property Agent

Connells

Conrad Phoenix Properties Ltd

Consensus Planning

Consensus Planning Ltd (on behalf of Lamgam Properties)

Cornerstone

Courtley Consultants Ltd

Crest Nicholson Chiltern Ltd

Croxley Green Parish Council

Cushman & Wakefield

D Brightman

D W Kent & Associates

Dacorum Borough Council

Dalton Warner Davis

David Doyle

David Russell Associates

David Wilson Estates

Denham Parish Council

Development Planning Partnership

DLA Planning Ltd

DLP Consultants Ltd

DPDS Consulting Group

Drivers Jonas

DTZ

EDF

EDS Energy

East Of England Development Agency

East Of England Regional Assembly

Emery Planning Partnership

English Heritage

English Partnerships

Entec

Eric Price

Faber Maunsell

Fairview Homes

Faulkners

Fisher Wilson

Flamstead Parish Council

Flaunden Parish Council

Freeth Medhuish Associates Limited

George Wimpey

George Wimpey Strategic Land

Gerald Eve

Gerrards Cross Parish Council

GL Hearn

Gleeson Homes

GLTP Development

Gough Commercial Property Consultants

Gough Planning Services

Government Office For The East Of England

Graham Seabrook Partnership

Great Gaddesden Parish Council

Griffiths Environmental Planning

GVA Grimley

Hemel Property

Hepher Dixon

Hereward Housing

Hertfordshire County Council

Hertfordshire Highways

Hertfordshire Highways

Herts Highways

Hertsmere Borough Council

Hightown Praetorian & Churches HA

Highways Agency

Hives Planning

Horstonbridge Developments Ltd

Housebuilders Federaton

Indigo Planning Ltd

JB Planning Associates Limited

Jeremy C Peter

John Greenaway

John Kettlewell

John Normanton

Kings Langley Parish Council

Kirkby & Diamond

Laing Homes

Lambert Smith Hampton

Level

Level Consulting Ltd

Linden Homes

Little Gaddesden Parish Council

Main Allen

Malcolm Judd & Partners

Mark Glenister

Markyate Parish Council

Merchant Taylors School

Michael Anthony

Mr & Mrs E J West

Mr BGK Shileto

Mr G Dean & Mrs C M Walter

Mrs J Conway

Mrs KM Ploszczanski

Mrs Lynn Dumpelton

Murdoch Associates

Nathaniel Lichfield & Partners

National Grid Wireless

Natural England

Nelson Bakewell

Nettleden with Potten End Parish Council

Network Housing Group

Network Rail

Newport Holdings Lts c/o Pearl & Coutts

Northchurch Parish Council

OMD Home Counties Ltd

P J Kelly

Palmer Land & Industry Ltd

Paradigm Housing Group

PDMS Vesty Limited

Peacock & Smith

Pegasus Planning Group

Pendley Commercial

Persimmon Homes Midlands

Phillips Planning Services Ltd

Picton Smeathmans

Places for People

Planning Perspectives

Planning Potential

Poulter & Francis

Proctor Farm Partnership

R H Rose Associates

Rapleys

Rectory Farm

Redbourn Parish Council

Redrow Regeneration

Renaissance Lifecare Plc

Ridgehill Housing Association

Robinson & Hall LLP

Royal British Legion Sarratt

RPS Plc

Russell Investments Ltd

Sappi (UK) Ltd / c/o CgMs Ltd

Sarratt Parish Council

Savills (L&P) Limited

Sellwood Planning

Shire Consulting

Silvermere Developments

Smith Stuart Reynolds

SPH Housing

St Albans City & District Council

St Stephen's Parish Council

Steve Cook

Stimpsons Commercial

Strutt & Parker

Stupples & Co

Sustrans

Taylor Wimpey UK Ltd

Taylor Woodrow Developments Ltd

Terence O'Rourke Ltd

Tetlow King Planning

Tetlow King Planning on behalf of Aldwyck Housing Association

TFL Group Property And Facilities
Thames Water
The Barton Willmore Planning Partnership
The Boxmoor Trust
The Countryside Agency
The Crown Estate
The Development Planning Partnership
The Environment Agency
The Highways Agency
The Planning Bureau Limited (on behalf of McCarthy & Stone)
The Trustees of Leonard Burgin Deceased
The W R Davidge Planning Practice
Thornfield Properties Plc
Three Rivers District Council
Three Valleys Water Plc
Transco
Tribal MJP
Tring Rural Parish Council
Tring Town Council
Turley Associates
Twigden Homes Ltd
Vincent and Gorbings Planning Associates Ltd
Warden Housing Association
Watford & 3 Rivers PCT
Watford Borough Council
Watford Rural Parish Council
West Herts College
West Herts Hospital NHS Trust
West Herts Sewerage Consortium



Urban Studio

Wigginton Parish Council

Wimpey

Woolf Bond Planning

Annex C: Density calculations

10.4.8 As noted in the main body of this report, Tribal Urban Studio has carried out over a number of years pioneering research into residential densities at a number of spatial scales. In order to explain the approach taken to density in this report as fully as possible, some context is required.

10.4.9 The often-quoted 30-40-50 dwellings per hectare measurements of PPG3 (with 30 dwellings per hectare carried forward into PPS3 as an indicative minimum) measured 'net' densities, namely:

- access roads within the site;
- private garden space;
- car parking areas;
- incidental open space and landscaping; and
- children's play areas where these are to be provided.

They did not include land for uses including:

- Rail, tram, guided bus or other public transport infrastructure
- Community facilities (hospitals, schools, community centres)
- Retail, office or industrial areas
- Major open space such as parks and nature reserves
- Major roads
- Other non-domestic buildings (places of worship, leisure facilities and so on)

10.4.10 With the publication of the Barker Report and PPS3, we are seeing a return to the development of larger-scale, often greenfield sites that can help to deliver the new housing needed over the next 25 years. If these larger sites are to be built as genuinely sustainable neighbourhoods, they will need to include some or all of the uses forming PPG3 exclusions noted above as well as those included within the PPG3 definition.

10.4.11 It is also clear that the features that are included within the PPG3 measure (e.g. incidental open space, landscaping and parking areas within residential areas) will become increasingly irrelevant to overall density when areas for hundreds rather than dozens of dwellings are being assessed.

10.4.12 The densities required for larger areas will therefore need to take account of a wide range of uses as well as housing, and the land required for these uses renders the old 30-40-50 dwellings per hectare distinction less useful. At the scale of an entire town or city in England, land for enough other uses is required for densities to drop well below the 30-40-50 distinction, even in smaller towns. Here are some examples:

- Buxton, Derbyshire: 447 hectares, 8,568 dwellings. Town density: **19.16 dph**
- Chichester, Sussex: 823 hectares, 10,772 dwellings. Town density: **13.08 dph**

- Witney, Oxfordshire: 587 hectares, 9,241 dwellings. Town density: **15.74 dph**
- Kendal, Cumbria: 788 hectares, 12,405 dwellings. Town density: **15.74 dph**
- Stratford-upon-Avon, Warwickshire: 639 hectares, 9,712 dwellings. **Town density: 15.19 dph²⁹**

- 10.4.13 The average density for a free-standing town in England of about 10,000 dwellings, therefore, seems to be in the range 10-20 dph. This density reflects the numerous non-domestic uses required for the town to function as a service centre. What is interesting, however, is that densities do not change a great deal even for larger towns and cities, and if anything, increase slightly- for example, the Nottingham urban area³⁰, with a population of 670,000, is built at about 21 dwellings per hectare. This reflects the fact that larger cities tend to have proportionally larger suburban areas (i.e. mainly residential areas) in relation to city centre uses than do smaller towns, where the area covered by suburb may be only about twice as large as the town centre- by contrast, it is clear that Nottingham's suburbs and contiguous towns cover far more land than does Nottingham city centre.
- 10.4.14 For a fully sustainable neighbourhood, including employment land, health and education facilities, retail areas, open space and public transport infrastructure, it would seem logical to project forward from a portfolio of existing suburban exemplars. This would allow for a more accurate assessment of dwelling capacity at the neighbourhood scale, particularly if the urban design exercise approach can be modified to fit this size of development.
- 10.4.15 Tribal Urban Studio have carried out and continue to develop research studies into sustainable suburban exemplars in England that exhibit a balance of residential uses, employment land, open space, community facilities and/or retail.
- 10.4.16 For English suburban areas and/or urban extensions, it was expected before research commenced that the greater proportion of residential use will increase the residential density beyond the 10-20 dph level, although it is likely still to fall short of the minimum indicative PPS3 density of 30 dph required for (solely) residential areas at a smaller scale.
- 10.4.17 This is indeed the case. The average density of suburban neighbourhoods of about 3,000 dwellings in England has been found to be in the range of **25** dwellings per hectare, and this has been taken as a starting point in the calculations for the study area in this report. However, it should be noted that these MSOAs constitute existing urban development, much of which can hardly be taken as a model of sustainable density. As well as too low of a density indicating profligate use of land and therefore a lack of sustainability, too high of a residential density at the larger scale can also in fact indicate a lack of sustainability, as large, monofunctional housing estates with few local services that can act only as dormitories to distant service centres are often built at over 30 dwellings per hectare.
- 10.4.18 To ensure that urban extensions in the study area can be truly sustainable, offering local employment, schools, hospitals and retail (while still encompassing residential areas at net densities not wasteful of land and able to sustain public transport provision), it would seem sensible to widen the average density range for sites of over 10 hectares in size to 20-30 dwellings per hectare. Therefore, 20dph and 30dph were set as the Scenario A and Scenario B densities for sites of this size in this SHLAA.

²⁹ All population and dwelling number statistics from Census 2001.

³⁰ This Office of National Statistics-based definition includes Arnold, Beeston and Stapleford, Carlton, Clifton, Long Eaton, Nottingham, Ruddington and West Bridgford.

- 10.4.19 It should be clear by now that as the area of land within the red line changes, so does the density. Therefore, for those smaller areas of land in the study area that are suitable for housing (but that are still too large for design case studies to be applicable), higher densities will need to be applied, as they are not of sufficient size to be able to include schools, employment areas and so on within their boundaries. Here, densities approximate more closely to the PPS3 levels and therefore may be raised to 25-35 dph (this is still 'gross' and includes generous allowance for local open space). Therefore, for sites between 5 and 10 hectares in size, 25 dph and 35 dph were set as the Scenario A and Scenario B densities in this SHLAA.
- 10.4.20 Finally, a disclaimer must be applied to the density assumptions. This work represents a very early stage in the planning and urban design timeline for greenfield urban extensions in the study area. Every site differs from all others in the quantum of non-residential uses that it would be appropriate to provide, and only at a later stage will precise densities be able to be applied, based on detailed contextual analysis for each site. There are very many factors that affect the densities of new urban areas, and many will be at too local a level (e.g. subtle changes in height of land across the site, the proposed location of local facilities within the red line, the density of neighbouring housing areas and so on) for a broad-brush assessment such as this to cover accurately.
- 10.4.21 However, the ranges of density that have been applied in this SHLAA should form a firm, evidence-based foundation for the eventual development of sustainable greenfield housing development that is not wasteful of land, offers a wide range of local services and can support public transport while also reducing the need to travel.

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