

Sustainability Appraisal (SA) of the Wokingham Borough Local Plan Update

Interim SA Report

February 2020

Quality information

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1. Introduction

Background

- 1.1 AECOM is commissioned to undertake Sustainability Appraisal (SA) in support of the emerging Wokingham Borough Local Plan Update (LPU).
- 1.2 Once in place, the LPU will establish a spatial strategy for growth and change for the period to 2036, allocate sites to deliver the strategy and establish the policies against which planning applications will be determined.
- 1.3 SA is a mechanism for considering and communicating the likely effects of an emerging plan, and alternatives, with a view to minimising adverse effects and maximising the positives. Local Plans must be subject to SA. ¹

SA explained

- 1.4 It is a requirement that SA is undertaken in-line with the procedures prescribed by the Environmental Assessment of Plans and Programmes Regulations 2004, which were prepared in order to transpose into national law the EU Strategic Environmental Assessment (SEA) Directive.
- 1.5 In-line with the Regulations, a report (known as **the SA Report**) must be published for consultation alongside the draft plan that essentially 'identifies, describes and evaluates' the likely significant effects of implementing 'the plan, and reasonable alternatives'. The report must then be taken into account, alongside consultation responses, when finalising the plan.
- 1.6 More specifically, the SA Report must answer the following **three questions** -
 - What has Plan-making / SA involved up to this point?
 - including with regards to consideration of 'reasonable alternatives'
 - What are the SA findings at this stage?
 - i.e. in relation to the draft plan
 - What are next steps?

This Interim SA Report²

- 1.7 At the current stage of plan-making the Council is consulting on an *early* draft plan, under Regulation 18 of the Local Planning Regulations. This 'Interim' SA Report is therefore produced with the intention of informing the consultation and subsequent preparation of the final draft ('proposed submission') version of the plan.

Structure of this report

- 1.8 Despite the fact that this is an 'Interim' SA Report, and does not need to provide the information required of the SA Report, it is nonetheless helpful to structure this report according to the **three questions** above.
- 1.9 Before answering the first question, there is a need to further set the scene by answering:
 - What is the plan seeking to achieve?
 - What is the scope of the SA?

¹ Since provision was made through the Planning and Compulsory Purchase Act 2004 it has been understood that local planning authorities must carry out a process of Sustainability Appraisal alongside plan-making. The centrality of SA to Local Plan-making is emphasised in the National Planning Policy Framework (NPPF, 2018). The Town and Country Planning (Local Planning) Regulations 2012 require that an SA Report is published for consultation alongside the 'Proposed Submission' plan document

² See **Appendix I** for further explanation of the regulatory basis for answering certain questions within the SA Report, and a 'checklist' explaining more precisely the regulatory basis for presenting certain information.

2. What is the plan seeking to achieve?

Introduction

- 2.1 The aim here is to explain more fully the context to plan preparation and the plan vision / objectives.

The plan area

- 2.2 Wokingham Borough is a complex area geographically, with the western part of the Borough comprising the eastern part of the Reading urban area, the eastern half abutting the Bracknell urban area, a dense network of major road and rail infrastructure, significant river corridors, varying geology and soils and wide-ranging environmental constraints in terms of biodiversity, heritage, air quality and other matters. There are also four existing Strategic Development Locations (SDLs), following the Core Strategy (2010), which are currently coming forward, delivering in the region of 10,000 homes along with major new infrastructure (see <https://www.wokingham.gov.uk/major-developments/overview-of-major-developments/>).
- 2.3 The figures below introduce the plan area, with a range of further maps presented in **Appendix II**.

Legislative and policy context

- 2.4 The plan is being prepared under the Town and Country (Local Planning) Regulations 2012 and underpinning primary legislation. It must reflect current government policy as set out in the National Planning Policy Framework (NPPF, 2019) and Planning Policy for Traveller Sites (2015), and must also be prepared mindful of Government's online Planning Practice Guidance (PPG). In particular, the NPPF requires local authorities to take a positive approach to development, with an up-to-date local plan that meets objectively assessed development needs, otherwise known as local housing needs (**LHN**), as far as is consistent with sustainable development, and unless exceptional circumstances justify an alternative approach.
- 2.5 The plan is also being prepared taking account of objectives and policies established by various organisations at the national and more local levels, in accordance with the Duty to Cooperate established by the Localism Act 2011. For example, context is provided by the strategic growth aspirations of the Thames Valley Berkshire Local Enterprise Partnership (LEP), and policies established by Berkshire West Clinical Commissioning Group. Wokingham Borough must also cooperate with neighbouring areas, in particular those immediately adjacent authorities, namely Windsor and Maidenhead, Bracknell Forest, Hart, Basingstoke and Deane, West Berkshire, Reading, South Oxfordshire and Wycombe.
- 2.6 It is also important to note that, as a Unitary Authority, Wokingham Borough has responsibility for planning for topics covered by County Councils elsewhere, including transport (the Local Transport Plan 3 was adopted in 2011), education (for example, the Wokingham Borough Secondary Schools Strategy was adopted in 2017) and minerals and waste (a draft version of the Central and Eastern Berkshire Joint Minerals & Waste Plan was published for consultation in 2018).
- 2.7 Finally, it is important to note that the plan will be prepared mindful of the 'made' Neighbourhood Development Plan (NDP) for the Shinfield area and the emerging NDPS for Remenham, Arborfield and Barkham, Ruscombe, Hurst, Twyford, Wokingham Without, Finchampstead, and Sonning. NDPs must be in general conformity with the Local Plan, which means that made and emerging NDPs may need to be reviewed to bring them into line with the emerging plan; however, it is equally the case that made and emerging Neighbourhood Plans will be a consideration when preparing the Local Plan.

Figure 2.1: Wokingham Borough in the sub-regional context

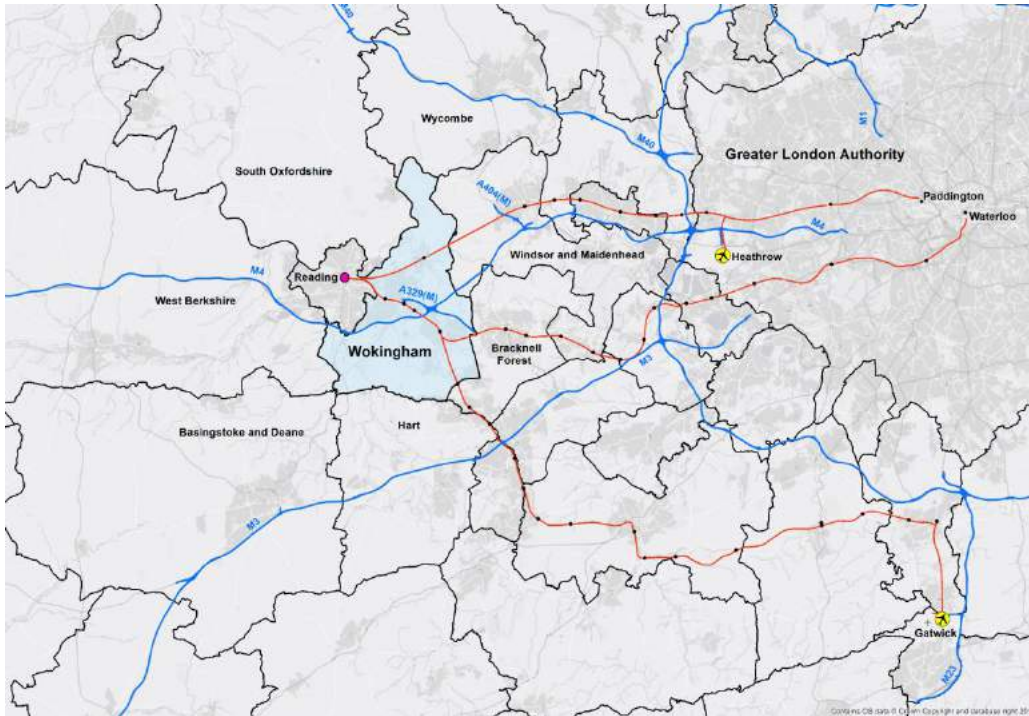
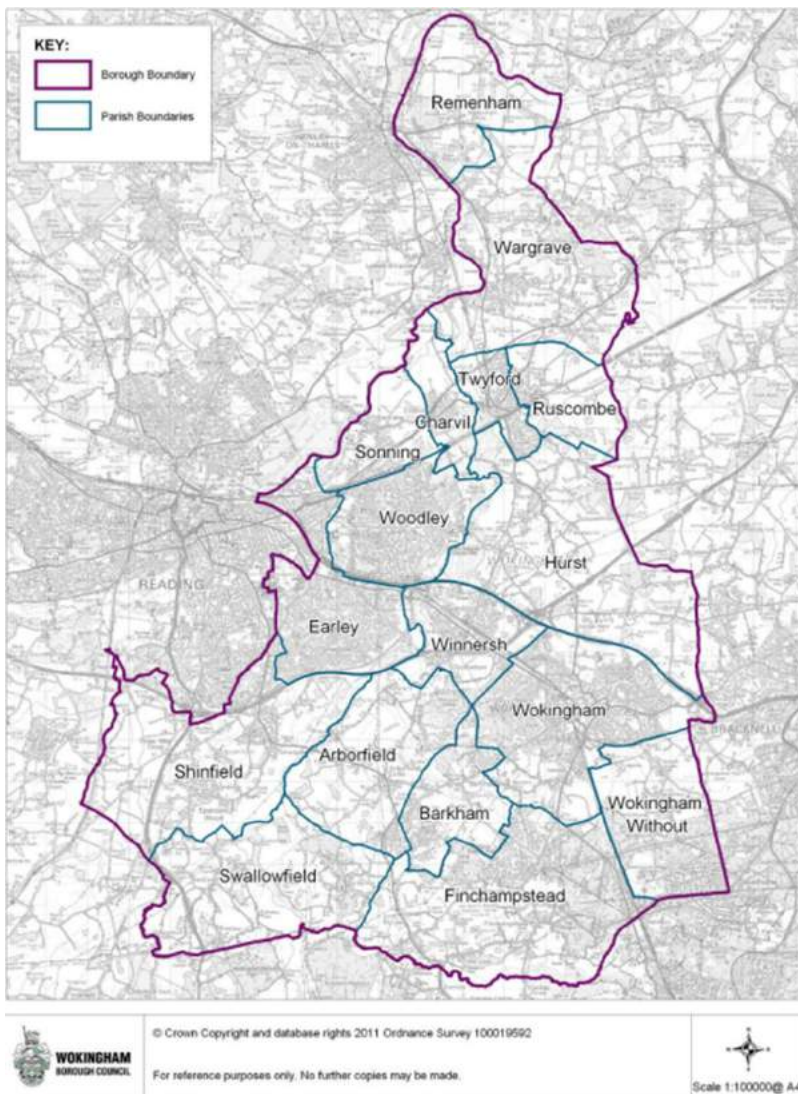


Figure 2.2: Parishes within Wokingham Borough



Plan vision and objectives

2.8 A detailed vision has been established for Wokingham Borough with the aim of guiding the preparation of the LPU. The vision is presented under the following three headings:

- A borough that focuses on the needs of our communities.
- A borough that will be sustainable for generations to come.
- A borough where people choose to live, learn and work because both the places we build and the places we protect are valued and enriching.

2.9 More specifically, the following list of objectives has been established in order to guide LPU preparation:

1. Make the fullest contribution possible to the mitigation of, and adaptation to, climate change and the transition to a low-carbon economy.
2. Reduce the need to travel and widen travel choice, by providing local opportunities to access learning and employment, services and facilities, through ensuring that options for walking, cycling and public transport are attractive, accessible for all, convenient and safe, and by enabling digital connectivity.
3. Improve strategic transport connectivity by walking, cycling, public transport and road, both between places within and outside of the borough.
4. Maintain and strengthen the sense of place by securing quality designed development through protecting and enhancing the distinctive historic environment, landscape character, townscape character and biodiversity value, assisting vibrancy, and by keeping settlements separate.
5. Champion thriving town and local centres to provide the focus of their communities both in social and economic activity, ensuring they can adapt to the challenges they face.
6. Enable conditions to allow the economy to creatively grow by being adaptable to structural and technological change, ensuring the economic benefits are felt by all.
7. Improve health and wellbeing by enabling independence, encouraging healthy lifestyles, facilitating social interaction and creating inclusive and safe communities.
8. Contribute our fair share towards meeting the need for more housing, ensuring that a range of suitable housing options are available across both towns and villages which cater for and adapt to a variety of needs including affordable housing and the growing ageing and vulnerable groups in the population.
9. Promote quality and innovation in the design of buildings and public spaces, ensuring they are attractive, accessible, welcoming and meet needs of all groups in the community.
10. Facilitate timely provision of new and improved infrastructure by working with providers to achieve focused investment and by securing appropriate benefits from new development.

What is the plan not seeking to achieve?

2.10 There is a need to be clear that the LPU will be strategic in nature, and hence naturally omit consideration of some detailed issues in the knowledge that they can be addressed at subsequent stages of the planning process, namely at the planning application stage. For example, it is appropriate to defer certain detailed matters relating to masterplanning and design of development sites to the planning application stage.

2.11 The scope of the LPU is reflected in the scope of the SA.

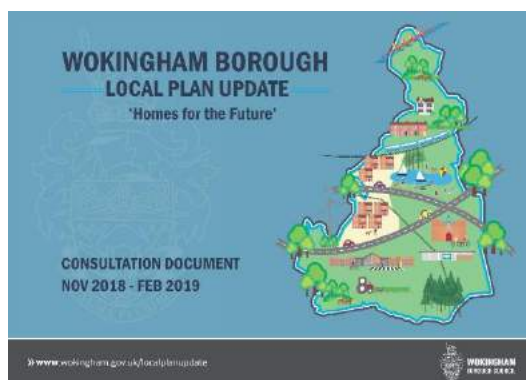
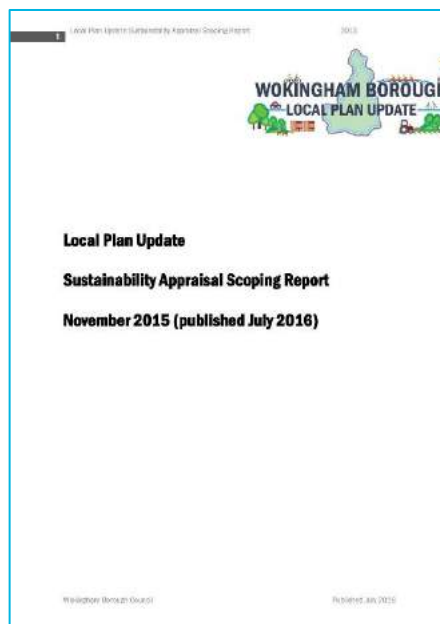
3. What is the scope of the SA?

Introduction

- 3.1 The scope of the SA refers to the breadth of sustainability issues and objectives that are taken into account as part of the assessment of reasonable alternatives and the emerging plan.
- 3.2 The aim here is to introduce the reader to the *broad scope* of the SA. **Appendix III** presents further information; however, it is not possible to define the scope of the SA comprehensively. Rather, there is a need for the SA scope to be flexible and adaptable, responding to the nature of emerging preferred and alternative plan options, and the latest evidence-base.

Consultation on the scope

- 3.3 The SEA Regulations require that: *“When deciding on the scope and level of detail of the information that must be included in the Environmental Report [i.e. the SA scope], the responsible authority shall consult the consultation bodies”*. In England, the consultation bodies are the Environment Agency, Historic England and Natural England.³ As such, these authorities were consulted on the SA scope in 2015.
- 3.4 The outcome of the scoping process was an SA ‘framework’ comprising 22 objectives, with this framework then used to structure appraisal findings presented within the Interim SA Reports published alongside LPU consultation documents in 2016 (‘Issues and Options’) and 2018 (‘Homes for the Future’).
- 3.5 Subsequently, in 2019, the decision was taken to rationalise the framework by grouping the 22 objectives under 13 topic headings. Also, modest adjustments were made to three objectives, namely those dealing with the historic environment, landscape and transport.



³ In-line with Article 6(3) of the SEA Directive, these bodies were selected because *‘by reason of their specific environmental responsibilities,[they] are likely to be concerned by the environmental effects of implementing plans and programmes.’*

The SA framework

3.6 Table 3.1 presents the sustainability topics and objectives that form the ‘backbone’ to the SA scope.

Table 3.1: The SA framework

Topic	Objective(s)
Accessibility	<ul style="list-style-type: none"> • Improve accessibility to services, amenities and facilities in particular by safe walking and cycling routes • Raise educational attainment, skills and training opportunities
Air and wider environmental quality	<ul style="list-style-type: none"> • Minimise impacts arising from pollution and improve and prevent where possible
Biodiversity	<ul style="list-style-type: none"> • Conserve and enhance biodiversity, including wildlife and river corridors and networks and to maximise opportunities for building in beneficial features for biodiversity including limiting the impact of climate change
Climate change adaptation	<ul style="list-style-type: none"> • Reduce the risk of flooding and the resulting detriment to public well-being, the economy and the environment by ensuring no inappropriate development in any areas at risk of flooding and use sustainable drainage solutions and other solutions in line with advice from the Environment Agency where necessary
Climate change mitigation	<ul style="list-style-type: none"> • Increase energy efficiency and the proportion of energy generated from renewable sources in the Borough [N.B. transport emissions considered below]
Communities	<ul style="list-style-type: none"> • Reduce poverty and social exclusion • Improve the health and wellbeing of the population • Ensure a safe and secure environment • Create and sustain vibrant and locally distinctive communities
Economy	<ul style="list-style-type: none"> • Ensure high and stable levels of employment • Encourage ‘smart’ economic growth’ • Maintain a buoyant and competitive economy with a range of jobs without adversely affecting the quality of life
Historic environment	<ul style="list-style-type: none"> • Protect and enhance the historic environment, ensuring new development makes a positive contribution, or leads to no material harm, taking into account the setting of assets and links with the wider landscape
Housing	<ul style="list-style-type: none"> • Make provision for local housing needs by ensuring that everyone has the opportunity to live in a decent sustainably constructed and affordable home
Land, soils and natural resources	<ul style="list-style-type: none"> • Improve efficiency in land use through the re-use of previously developed land, existing buildings, including the re-use of resources and remediation of previously developed land • Sustainably use resources (including renewable and non-renewable resources) • Maintain and where appropriate improve soil quality, and to ensure land affected by contamination is remediated to a condition suitable for use • Address waste by reducing and minimising waste as a priority and then managing waste in accordance with the waste hierarchy
Landscape	<ul style="list-style-type: none"> • Protect and enhance valued landscapes and the integrity of established character areas, ensuring new development makes a positive contribution, or leads to no material harm, also recalling links with the historic environment
Transportation	<ul style="list-style-type: none"> • Reduce road congestion on the local and strategic road network (SRN), and minimise air pollution and greenhouse gas emissions from transport, by improving carefully locating new development, minimising the need to travel and supporting ‘sustainable transport’ modes including safe walking and cycling routes and public transport
Water	<ul style="list-style-type: none"> • Maintain, and, where appropriate improve water quality (including groundwater and surface water) and to achieve sustainable water resource management of both surface and groundwater flows

Part 1: What has plan-making / SA involved up to this stage?

4. Introduction to Part 1

Introduction

- 4.1 The aim here is to introduce the information provided within this part of the report, i.e. provided in order to answer the question: *What has plan-making / SA involved up to this stage?*

Overview

- 4.2 Plan-making has been underway since 2015, with two consultations having been held (under Regulation 18 of the Local Planning Regulations) prior to this current consultation, which is also held under Regulation 18, and two Interim SA Reports having been published - see Figure 4.1.

Figure 4.1 Establishing reasonable spatial strategy alternatives

	Plan-making	SA
2015	Evidence gathering and early engagement	Scoping Report
2016	Issues and Options consultation	Interim SA Report
2018	Homes for the Future consultation	Interim SA Report
2019	Establish and explore reasonable alternatives	
2020	Draft LPU consultation	Interim SA Report
2020	Establish and explore reasonable alternatives	
2020	Publication of the Proposed Submission LPU	SA Report
2020	Submission of the LPU to the Secretary of State	SA Report

Focus of Part 1

We are here

- 4.3 The focus here, within Part 1, is not to relay the entire 'story' of plan-making to date, but rather the work undertaken to examine **reasonable alternatives** in 2019, ahead of the current consultation.

- 4.4 Specifically, the aim is to:

- explain the reasons for selecting the alternatives dealt with - see **Chapter 5**
- present an appraisal of the reasonable alternatives - see **Chapter 6**
- explain the Council's reasons for selecting the preferred option - see **Chapter 7**

- 4.5 Presenting this information is in accordance with the regulatory requirement to present an appraisal of 'reasonable alternatives' and 'an outline of the reasons for selecting the alternatives dealt with' within the SA Report (N.B. this is not the SA Report, but aims to present the information required of the SA Report).

What about earlier stages of SA?

- 4.6 A considerable amount of assessment work has been completed and published for consultation to date within the two Interim SA Reports introduced above, including work to explore reasonable alternatives. This work provided a key input to the process of establishing reasonable alternatives in 2019, and as such is discussed further below. However, findings of earlier work stages naturally become out-of-date and superseded, such that there is little to be gained from reporting findings in detail at the current time. The aim of this report is to present up-to-date and policy-relevant appraisal findings, with a view to informing the current consultation, rather than to present a comprehensive audit trail of past work.

Reasonable alternatives in relation to what?

- 4.7 The legal requirement is to examine reasonable alternatives taking into account the objectives of the plan,⁴ which are listed above at paragraph 2.9. Objective 8, which relates to the allocation of land to contribute a fair share towards meeting the need for more housing, is considered to be a central objective of the plan. The matter of setting policy to address this objective consistently generates a high degree of interest amongst stakeholders (see the Council's Consultation Statement, 2020)⁵ and stands-out as giving rise to a high likelihood of 'significant effects' on the sustainability baseline (in terms of the SA framework - see Table 3.1). Planning Practice Guidance is clear that SA "should only focus on what is needed to assess the likely significant effects of the plan"⁶ and hence it follows that work in respect of exploring reasonable alternatives can and should focus on the matter of allocating land to meet needs, or the '**spatial strategy**'.

What about other plan issues/objectives?

- 4.8 The plan must address a range of other spatial and thematic issues/objectives; however, such issues/objectives are not of the same magnitude of strategic importance as the 'spatial strategy' and are less likely to give rise to significant effects. It follows that there is inherently limited argument for giving formal consultation to reasonable alternatives, i.e. it is reasonable for preferred policy approaches to emerge without formal consideration of reasonable alternatives (in the knowledge that the preferred policy approach will then be the subject of appraisal - see Section 9 of this report).
- 4.9 The above is a broad rule of thumb; however, there is naturally a need to maintain a 'watching-brief', and hence this matter will be revisited subsequent to the current consultation.

What about site options?

- 4.10 Site options are not 'reasonable alternatives' where there is no mutually exclusive choice to be made between them, hence there is no legal requirement to formally appraise site options.⁷ However, it is naturally the case that there is a need to examine site options as part of the process of arriving at reasonable spatial strategy alternatives. As such, site options are discussed in Section 5 ('Selecting the reasonable alternatives'). As part of this discussion there is reference to **Appendices IV and V**, which gives detailed consideration (not formal appraisal) to individual site options in isolation.

Who's responsibility?

- 4.11 It is important to be clear that: selecting reasonable alternatives is the responsibility of the plan-maker (WBC), with AECOM acting in an advisory capacity; appraising the reasonable alternatives is the responsibility of AECOM; and selecting the preferred option is the responsibility of the plan-maker.

Commenting on this part of the report

- 4.12 Comments are welcomed on:

- the decision to focus on 'spatial strategy' alternatives (this section);
- the reasonable spatial alternatives selected, with reference to the selection process (Chapter 5);
- the appraisal of the reasonable alternatives (Section 6); and
- the Council's reasons for supporting the preferred option (Section 7).

N.B. comments on individual sites should ideally be accompanied by an explanation of how the site in question should be delivered in combination with other sites (e.g. "in addition to sites X, Y and Z"; or "in place of site X"), in order to deliver on strategic objectives; however, all comments received will be taken into account when refining the reasonable alternatives subsequent to the current consultation.

⁴ Regulation 12(2) requires that, when determining what should be a focus of alternatives appraisal, account is taken of "the objectives and geographical scope of the plan".

⁵ See <https://wokingham.moderngov.co.uk/documents/s38649/Statement%20of%20Consultation%20v3.pdf>

⁶ See paragraph 009 at: <https://www.gov.uk/guidance/strategic-environmental-assessment-and-sustainability-appraisal>

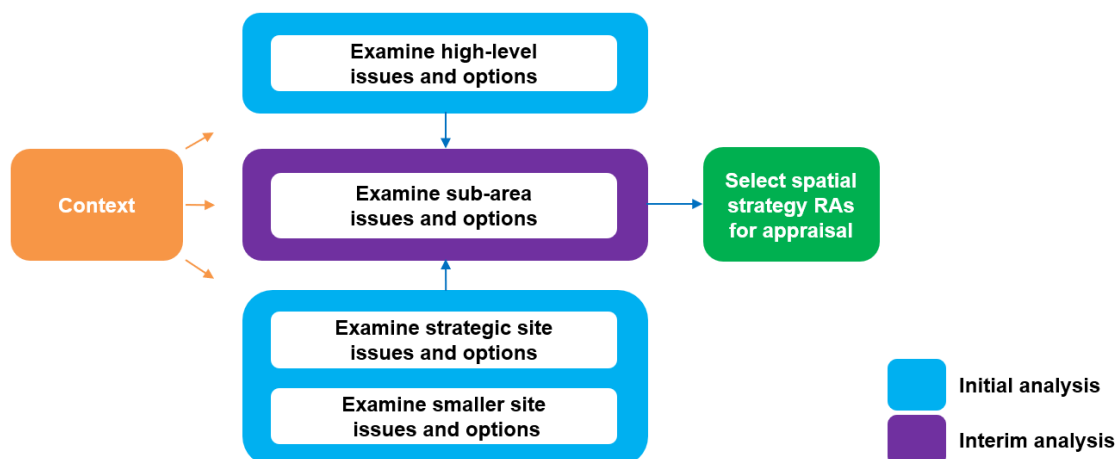
⁷ The SEA Directive and Regulations aim to ensure that plan-makers and stakeholders are presented with clear, mutually exclusive choices; however, if a site option is presented without an explanation of how it would be delivered in combination with other sites (e.g. "in addition to sites X, Y and Z"; or "in place of site X") then the choice remains essentially undefined.

5. Selecting the reasonable alternatives

Introduction

- 5.1 The aim here is to discuss the step-wise process that led to the selection of reasonable spatial strategy alternatives for appraisal and consultation. The process is summarised in **Figure 5.1**.
- 5.2 Ultimately, the aim of this chapter (in combination with Chapter 4) is to present “an outline of the reasons for selecting the alternatives dealt with” in accordance with the SEA Regulations (Schedule 2(8)).

Figure 5.1 Establishing reasonable spatial strategy alternatives



Structure of this chapter

- 5.3 This section firstly covers the ‘initial analysis’ steps, namely: A) ‘top down’ analysis of high-level issues and options with a bearing on the selection of reasonable spatial strategy alternatives; and B) ‘bottom up’ analysis of the pool of sites that might feature within the reasonable spatial strategy alternatives.
- 5.4 The next step is then ‘interim analysis’ of individual sub-areas (or, more specifically, site clusters) within the Borough, with the aim of reaching a conclusion on whether the initial analysis either: enables a preferred approach to allocation to be identified; or serves to indicate a need to formally examine alternatives.
- 5.5 The final sub-section then draws upon the examination of sub-area options to establish a single set of borough-wide reasonable spatial strategy alternatives for appraisal.

N.B. it is important to emphasise that the aim of this section is not to present formal appraisal findings, but rather to arrive at a set of reasonable spatial strategy alternatives, which can then be subject to formal appraisal. Detailed analysis is presented within this section, and much may be of interest to stakeholders; however, the aim of the analysis is not to meet the legal requirement to appraise reasonable alternatives.

A note on evidence

- 5.6 Evidence is referenced and discussed throughout this chapter; however, at the outset it is important to explain that the process of arriving at reasonable alternatives was informed by:
- a series of meetings and workshops held between the AECOM SA team and the WBC Local Plan team across 2019, with one meeting also attended by other officers from within the Council.
 - detailed discussions between the AECOM SA team and the WBC Local Plan team over a two day period in October 2019;
 - scrutiny from elected Councillors, specifically discussions with a cross-party Planning and Transport Policy Members Working Group; and
 - ongoing engagement by the Council with Town and Parish Councils.

High-level issues and options

5.7 The first step in the process of seeking to establish reasonable spatial strategy alternatives involved the consideration of high-level issues and options in relation to the questions of:

- Quantum – how many new homes must the Wokingham LPU provide for?
- Distribution – which broad areas within the Borough are more suited and less suited to growth, and what approach should be taken regarding the mix of sites?

Quantum

Background

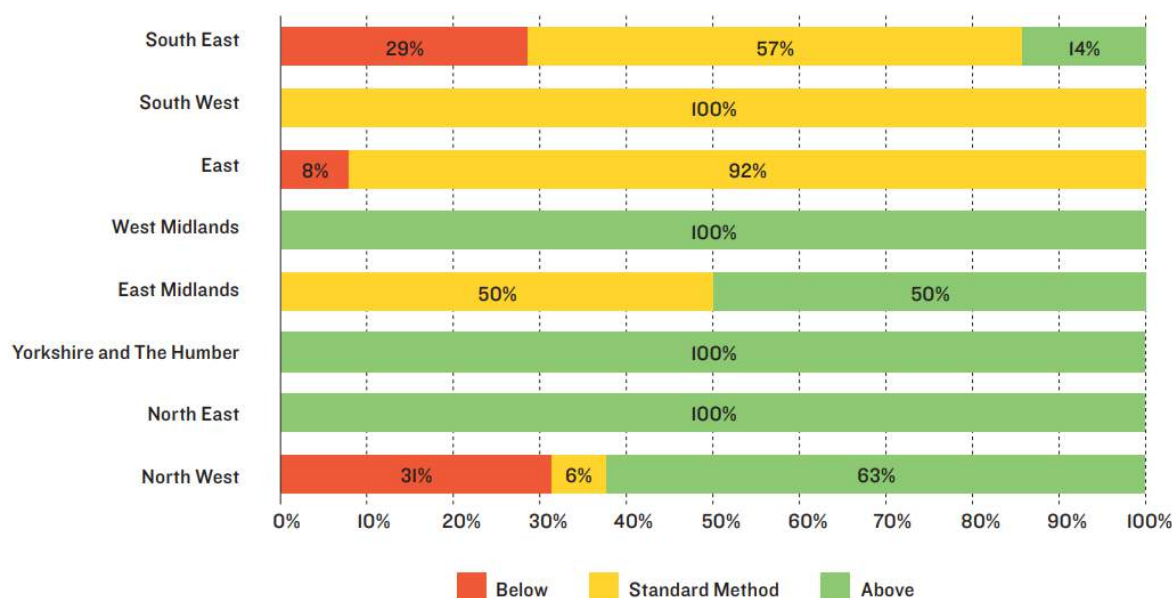
5.8 A central tenet of plan-making process is the need to **A)** establish housing needs; and then **B)** develop a policy response to those needs. The Planning Practice Guidance explains:⁸

“Housing need is an unconstrained assessment of the number of homes needed in an area. Assessing housing need is the first step in the process of deciding how many homes need to be planned for. It should be undertaken separately from assessing land availability, establishing a housing requirement figure and preparing policies to address this such as site allocations.”

5.9 With regards to (A), the NPPF (para 60) is clear that establishment of Local Housing Need (LHN) should be informed “by a local housing need assessment, conducted using the standard method... unless exceptional circumstances justify an alternative approach which also reflects current and future demographic trends and market signals.”

5.10 With regards to (B), most authorities will respond to assessed LHN by providing for LHN in full, and also provide for any unmet needs from neighbouring authorities that should reasonably be provided for; however, under certain circumstances it can be appropriate (‘sound’) to provide for a quantum of homes above or below need - see Figure 5.2.

Figure 5.2: Breakdown of authorities by region with emerging plans under new NPPF based on whether authorities are proposing more or less than the standard method LHN figure (Lichfields, September 2019)⁹



⁸ Reference ID: 2a-001-20190220 at: <https://www.gov.uk/guidance/housing-and-economic-development-needs-assessments>

⁹ See https://lichfields.uk/media/5263/above-standard-plans-for-housing-under-the-new-nppf_lichfields-insight-focus.pdf

LHN for Wokingham Borough

- 5.11 A standard method for calculating LHN was first published for consultation in September 2017 and at the current time remains largely unchanged. However, there have been some notable changes to guidance in respect of the data that should be utilised as an input to the method. Specifically, following a consultation in late 2018¹⁰ the Planning Practice Guidance (PPG) was updated to require that the household growth projections used as an input to the Standard Method must be the 2014-based projections, rather than the more recent 2016-based projections which projected comparatively lower levels of household growth. Prior to the change the standard method required the use of the most recent household projections. The PPG explains that the change was made in order to:¹¹ *“provide stability for planning authorities and communities, ensure that historic under-delivery and declining affordability are reflected, and to be consistent with the Government’s objective of significantly boosting the supply of homes.”*
- 5.12 The standard method is a relatively simple three-step process:
- Step 1 – calculate the demographic baseline
 - Step 2 – calculate the adjustment to take account of affordability
 - Step 3 – cap the level of any increase
- 5.13 Planning Practice Guidance prescribes a method for completing these steps; however, there are arguments for applying a different method to Steps 2 and 3 in the Wokingham context, as set out within the Council’s Housing Need and Exceptional Circumstances Topic Paper published as part of the current consultation. The Topic Paper argues that there are ‘exceptional circumstances’ that justify taking a different approach, and that this alternative approach leads to an LHN figure of **769 dpa**, which is lower than the figure of **804 dpa** that emerges from strict application of the standard method. The paper concludes:
- “The purpose of this paper is to set out the factors which the council considers are capable of amounting to “exceptional circumstances” that, would justify a deviation from the government’s standard method for calculating the minimum number of homes that should be planned for.*
- As set out in Chapter 5 of this paper, these are considered to be the failure of the standard method to suitably address the context of Wokingham Borough with respect of the impact of new house building on the median average house price, the failure to recognise the geographical and functional relationship between Wokingham Borough and Reading and the associated impact on median workplace earnings, and the failure to recognise that Wokingham Borough housing requirement as set out in the Core Strategy local plan included growth on behalf of the Greater Reading area. It is the council’s position that new build dwellings should be excluded from the calculation of median house price and that residence based earnings should be used when considering stage 2 of the standard method, and that the growth on behalf of Greater Reading be removed when considering stage 3 of the standard method.*
- These factors have been considered in the context of the government’s objective to significantly boost housing delivery, the economic needs of the borough and the robustness of demographic data.”*
- 5.14 A further argument for potentially adjusting downwards the LHN figure relates to a discrepancy within the ONS’s data for migration flows between the 2001 and 2011 Census points. In round numbers, whilst the Censuses suggest that the population grew by 5,000 people in this 10-year period the ONS Mid-Year Population Estimates suggest that the population grew by 16,000 people. This discrepancy is known as Unattributable Population Change, or **UPC**. If those errors continued after 2011 and affected the trend periods for the 2014-based population projections, which form the basis for calculating LHN, those projections would have been too large by a substantial margin.
- 5.15 A final consideration, in respect of LHN, relates to the evidence provided by the Berkshire (including South Bucks) Strategic Housing Market Assessment (**SHMA**) study, which was completed in 2016, and then updated through a sensitivity testing exercise in 2018. This work concludes an Objectively Assessed Need (OAN) for housing of 801 dpa (applying the 2014 based household projections), which is a useful comparator figure at the current time; however, the conclusions reached by the studies in respect of OAN should not be conflated with a discussion of LHN. This is because a conclusion on OAN was reached taking account not only of demographic needs, but also following application of an ‘uplift’ for economic needs.

¹⁰ See <https://www.gov.uk/government/consultations/changes-to-planning-policy-and-guidance-including-the-standard-method-for-assessing-local-housing-need>

¹¹ See paragraph 4 and 5 at: <https://www.gov.uk/guidance/housing-and-economic-development-needs-assessments>

- 5.16 In **conclusion** the LHN figure assigned to Wokingham Borough, whether that is taken to be 769 dpa, 804 dpa or an alternative figure, is a starting point for plan-making. Providing for this LHN figure in full is certainly an option for the Local Plan; however, there is also a need to consider lower and higher growth options.

Is there a need to consider spatial strategy options involving provision for above LHN?

- 5.17 All Local Plans must consider the implications of Paragraph 010 of Government's Planning Practice Guidance on Housing and Economic Needs Assessment, which explains that:

"The government is committed to ensuring that more homes are built and supports ambitious authorities who want to plan for growth. The standard method for assessing local housing need provides a minimum starting point in determining the number of homes needed in an area. It does not attempt to predict the impact that future government policies, changing economic circumstances or other factors might have on demographic behaviour. Therefore, there will be circumstances where it is appropriate to consider whether actual housing need is higher than the standard method indicates.

This will need to be assessed prior to, and separate from, considering how much of the overall need can be accommodated (and then translated into a housing requirement figure for the strategic policies in the plan). Circumstances where this may be appropriate include, but are not limited to situations where increases in housing need are likely to exceed past trends because of:

- *growth strategies for the area that are likely to be deliverable, for example where funding is in place to promote and facilitate additional growth (e.g. Housing Deals);*
- *strategic infrastructure improvements that are likely to drive an increase in the homes needed locally; or*
- *an authority agreeing to take on unmet need from neighbouring authorities, as set out in a statement of common ground;*

There may, occasionally, also be situations where previous levels of housing delivery in an area, or previous assessments of need (such as a recently-produced Strategic Housing Market Assessment) are significantly greater than the outcome from the standard method. Authorities will need to take this into account when considering whether it is appropriate to plan for a higher level of need than the standard model suggests."

- 5.18 For Wokingham Borough, the first point to note is that both the SHMA (2016) and OAN Sensitivity Test (2018) applied an 'uplift' to the demographic starting point to reflect the needs of the economy, i.e. to avoid a situation whereby the Borough either fails to meet its economic growth potential or draws unduly on a workforce from outside the Borough thus creating unsustainable commuting patterns. There is no more up-to-date study that explores whether the latest demographic need figure, namely the LHN figure(s) discussed above, similarly might require an uplift to meet the needs of the economy; however, it is fair to say that this possibility cannot be ruled-out. This provides a reason for exploring higher growth options.
- 5.19 Affordable housing needs also potentially serve as a reason for exploring higher growth options; however, this is a complex matter. Table 46 of the OAN Sensitivity Study (2018) identifies a "notional" housing target figure of 1,294 dpa as being necessary in order to meet affordable housing needs (453 dpa) in full, assuming that 35% of all homes delivered are affordable, and goes on to conclude (paragraph 5.41) that *"it is clear that affordable housing need may result in upwards adjustments to the OAN"*. However, paragraph 5.41 is also clear that any uplift must be made *"with consideration given to the overall deliverability of housing"*. This includes consideration as to whether consistent delivery of affordable housing at such levels is achievable in light of the overall demographic need being substantially lower.
- 5.20 Other arguments for exploring higher growth options are more limited. There is no Housing Deal, or any equivalent growth strategy, in place; and there are not strategic infrastructure improvements on the horizon likely to drive an increase in the homes needed locally (although the arrival of Crossrail is a strategic consideration for Twyford, which is considered further below).
- 5.21 Finally, there is a need to consider the possibility of Wokingham Borough being asked to provide for unmet needs from a neighbouring authority; however, no such request has been received to date and there are no indications from across the Housing Market Area at any request will be made in the future – see **Table 5.1**.

Is there a need to consider spatial strategy options involving provision for below LHN?

5.22 Paragraph 11 of the NPPF states:

“... strategic policies should, as a minimum, provide for objectively assessed needs for housing and other uses, as well as any needs that cannot be met within neighbouring areas, **unless**: i. the application of policies in this Framework that protect areas or assets of particular importance provides a strong reason for restricting the overall scale, type or distribution of development in the plan area; or ii. any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole.” [emphasis added]

5.23 In the case of Wokingham Borough, there are parts of the Borough that are constrained by the “assets of particular importance” listed by the NPPF; however, there are also parts of the Borough that are not constrained by these assets. Furthermore, there is a need to consider the fact that a lower growth strategy for Wokingham Borough would lead to ‘unmet needs’ having to be provided for elsewhere within a heavily constrained sub-region, notably with the North Wessex Downs to the north, the Metropolitan Green Belt to the east and in proximity to the Thames Basin Heaths SPA to the southeast - see **Figure 5.3**. As such, the conclusion is that, whilst lower growth options (i.e. options involving provision for a quantum of homes below LHN) warrant some further consideration, very low growth options can be ruled-out as unreasonable.

Conclusion on housing quanta options to examine further

5.24 In conclusion, when seeking to establish reasonable spatial strategy alternatives there is a need to focus attention on options involving provision for the established LHN figure(s), and also give careful consideration to **higher growth** options (i.e. options involving provision for ‘above LHN’), although spatial strategy options departing vastly from LHN (e.g. by more than 20%) can be dismissed as unreasonable. There is also a need to give some further consideration to **lower growth** options (i.e. options involving provision for ‘below LHN’), although there are limited strategic arguments for any such approach.

N.B. this is only an initial, high-level conclusion, with reasonable housing quanta figures discussed further below, following examination of the broad distribution options, site options and options for individual areas.

Figure 5.3: Key strategic barriers to exporting unmet needs to other authorities in the sub-region

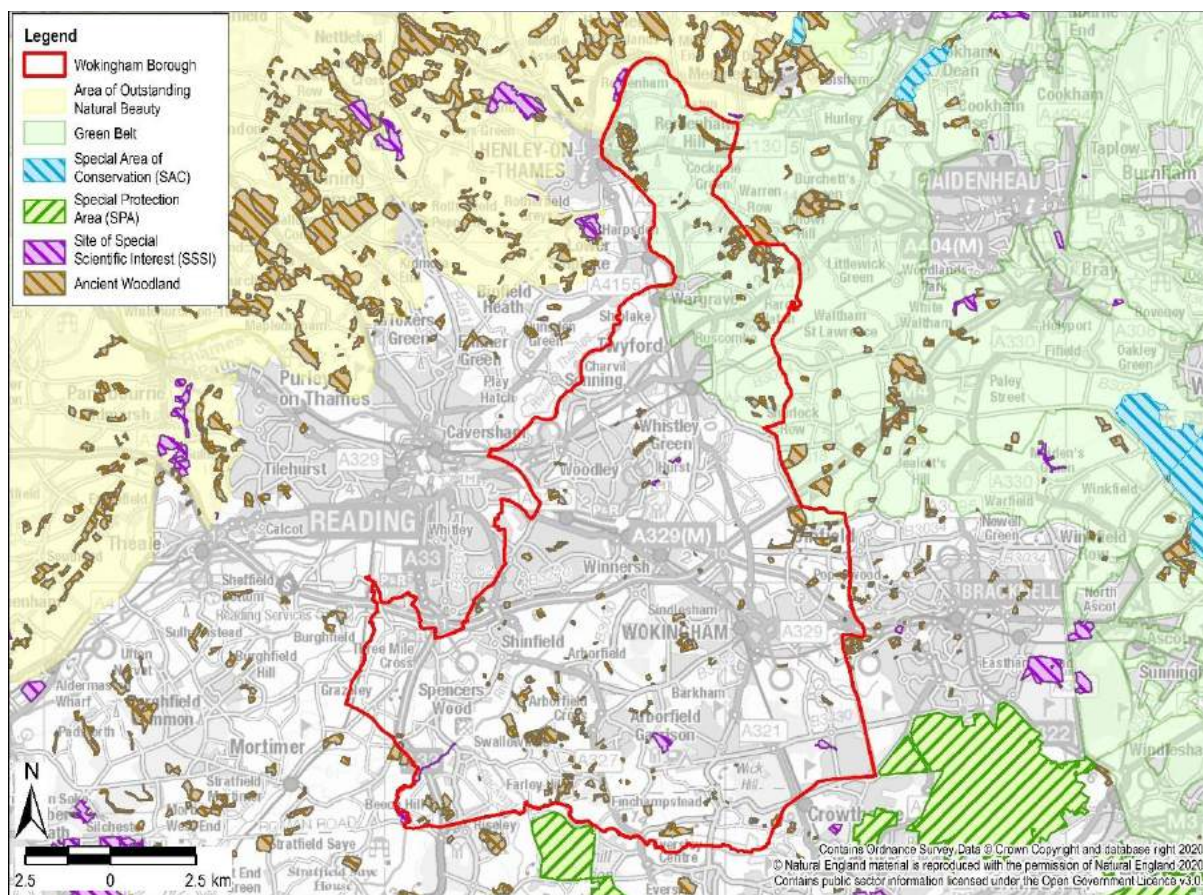


Table 5.1 Progress on neighbouring Local Plans

LPA	Commentary on risk of needing to provide for unmet needs
Basingstoke and Deane	The Basingstoke & Deane Local Plan was adopted in 2016, and a Local Plan Update was commenced in 2019, with a Draft Plan consultation (Reg 18) timetabled for 2021. The adopted plan provides for needs in full, and it is likely that the forthcoming plan will do likewise, as there are quite extensive parts of the Borough subject to limited strategic constraints. As such, there is a very low risk of needing to accommodate unmet needs.
Bracknell Forest	A third consultation was recently held on the Draft Plan, with the proposal to remove several strategic sites and replace them with a 4,000 home new settlement to the north of Bracknell. The Draft Plan provides for needs in full, and hence there is a low risk of unmet needs.
Hart District Council	The Hart Local Plan is currently being subjected to examination in public, with a consultation on proposed modifications (to the submitted plan) held in 2019. The plan provides for housing needs in full, and hence there is a very low risk of unmet needs.
Reading	Reading adopted a new Local Plan in November 2019. The plan was submitted under the transitional arrangements set out in the revised NPPF, which meant that housing need was taken from the SHMA and did not reference the standard method. Whilst there was a modest shortfall in the adopted plan against the SHMA, there is a surplus against the LHN as calculated by the standard method. On this basis there is very low risk of unmet needs.
South Oxfordshire	The Local Plan is currently in a period of hiatus with 'temporary direction' in place, issued by the Secretary of State for Homes, Communities and Local Government, stating that the Council cannot progress decision making in relation to the emerging plan. The Oxfordshire authorities have worked to date on the basis of meeting needs within the county, and there is no indication that this will change, hence there is a low risk of unmet needs.
West Berkshire Borough Council	A second Regulation 18 consultation document was published in late 2018, and the next step will be to publish the findings of Housing and Economic Land Availability Assessment (HELAA) for consultation. The most recent consultation document explained that: <i>"With a requirement of 9,918 - 11,358 dwellings based on the LHN assessment and taking account of the current supply position outlined above, the initial indication is that the LPR will need to identify sites or broad locations to meet an additional requirement of 1,560 - 2,945 dwellings over the period to 2036."</i> A large part of the District comprises the North Wessex Downs AONB; however, the southeast part of the Borough is subject to more limited constraint. As such, there is a low risk of unmet needs.
Windsor and Maidenhead Borough	The Local Plan was submitted in 2018 and proposed modifications published in 2019. The examination will continue in 2020, giving consideration to the sites proposed for allocation. The Borough is wholly constrained by the Green Belt, and borders constrained Slough; however, the plan aims to provide for needs in full, hence there is a low risk of unmet needs.
Wycombe District	The Wycombe Local Plan was adopted in 2019, and hence there is very low risk of the Wokingham LPU needing to provide for unmet needs arising from Wycombe District.

Broad distribution

Introduction

- 5.25 This is the second of two sections examining 'high level issues and options' of relevance to the matter of establishing reasonable spatial strategy alternatives for the LPU. This section reviews evidence (in chronological order) before reaching a broad conclusion regarding broad housing distribution options that should be progressed, i.e. should feed into the establishment of reasonable spatial strategy alternatives.

Core Strategy (2010)

- 5.26 The Core Strategy categorised each of the existing settlements as either a 'major', 'modest' or 'limited' development location (see Figure A in Appendix II) and allocated four Strategic Development Locations (SDLs). All four SDLs are currently building-out and are delivering significant upgrades to infrastructure, including new road links and schools (see Figure B in Appendix II).
- 5.27 The Settlement Hierarchy Assessment 2018 has since assessed all settlements in respect of four criteria - key services, higher order services, employment units, public transport, distance to a higher order settlement - before placing each settlement into one of four tiers (see Figure C in Appendix II).

West of Berkshire Strategic Planning Framework (2016)

- 5.28 This non-statutory strategy sought to establish key strategic development opportunities, as an input to Local Plan preparation for the four component authorities (Bracknell, Reading, West Berks and Wokingham). The key diagram (see Figure D in Appendix II) identified four strategic opportunities, all with implications for the Wokingham LPU:

- Major housing and mixed use development at Grazeley/Mortimer - Government funding was subsequently attained to assist in researching this strategic growth option as a Garden Community and, at the current time, an application for further funding through the Government's Housing Infrastructure Fund (HIF) is pending. This strategic development option, known as Grazeley, is discussed further below.
- A focus on town centre/commuter hub development - Wokingham town centre falls into the category of being a commuter hub; however, the town centre has seen significant change and regeneration over recent years, and a number of further sites are committed, i.e. have planning permission. There are limited growth opportunities over-and-above commitments, as discussed further below.
- Infrastructure investment at Twyford Station to support Crossrail - the Council is supportive of Crossrail related infrastructure investment, and a degree of development to facilitate investment is an option, as discussed further below.
- Sites that span the Bracknell Forest and Wokingham boundary - the western extent of the Bracknell urban area is set to expand as far as the Wokingham Borough / Bracknell Borough administrative boundary directly to the north of the A329, through development of Land at Amen Corner, which has planning permission. To the north and south of this committed site the Draft Bracknell Forest Local Plan (2019) proposes designation of a 'Strategic Gap' with a view to maintaining separation between the Bracknell and Wokingham. Within Wokingham Borough most land to the east of Wokingham falls within an SDL, such that the only land available for housing is to the north of the A329, which is discussed further below.

Homes for the future consultation (2018/19)

- 5.29 The consultation document identified all the sites promoted for development by land owners/developers, grouping these sites into five sub-areas (see Figure 5.4), and sought feedback from residents, businesses, landowners and other interested parties. Further questions sought responses on matters such as affordable housing and development density. The Statement of Consultation (2020) sets out the key issues raised.
- 5.30 Drawing upon lessons learned through the preceding Issues and Options consultation (2016), the consultation document presented the following draft spatial principles:
- It is not possible to rely on just urban sites, or on land that has been built on previously for future development. There simply isn't enough urban land available that is realistically developable.
 - Generally, towns and larger villages have better facilities than smaller settlements; however, concentrating development in too few places can intensify disruption and limit choice.

- Infrastructure can often best be provided through larger scale development sites. These offer the opportunity to limit local travel by providing new schools and facilities close to new housing.
- As large sites can take longer to go from the planning stage to the completion of homes, other smaller sites can help ensure a constant supply, something the government places great importance on.

5.31 The consultation document included the following important statement:

“Concentrating development in a small number of locations which each deliver large numbers of housing is one method. Like our existing strategy, this has the benefit of delivering infrastructure like the new roads we need and means that much more infrastructure investment can be funded by developers. Development of this scale takes longer to provide the houses than smaller scale developments.

High quality homes can also be delivered on smaller sites. These can often be quicker from planning to delivery, but it is harder to provide infrastructure improvements alongside. This means that new residents are likely to drive to do such things as, taking their children to school or going to the park.

In our ‘Issues and Options’ consultation, the majority of people who responded supported a range of site sizes, whilst supporting the use of larger developments to meet our needs....”

5.32 With regards to the Interim SA Report published alongside the consultation document, a key finding was that a spatial strategy involving growth dispersed across small sites would lead to negative environmental impacts broadly similar to a spatial strategy involving a concentration of growth at large sites, but without the benefit of *“much-needed infrastructure to deliver sustainable communities”*.

5.33 With regards to consultation responses received, key messages received from key strategic stakeholder organisations included:

- AWE Burghfield set out the national importance of not compromising operations though development within the established emergency planning zones, and notes that: *“An update of the AWE Site Development Context Plan will be published next year. This considers the constraints and opportunities both within and around the sites... as well as the specific functional requirements necessary to support the UK’s Nuclear Weapon Programme...”*
- Berkshire West CCG discussed the need to update the Estates Strategy in order to support health provision infrastructure generally and primary care specifically.
- Bracknell Forest Borough - highlighted the need to liaise in respect of the South Eastern Area where there are five sites being promoted in close proximity to the boundary, stating: *“As the Local Plan progresses, we would welcome the opportunity for on-going discussions on cross-boundary issues such as transport, education provision, infrastructure and landscape matters, particularly for any sites that are progressed in close proximity to the Borough.”*
- Department for Education (DfE) - welcomed recognition that investment in schools infrastructure is more difficult when the pattern of development is dispersed. DfE also, stated: *“The next version of the plan document should identify specific sites which can deliver the school places to support growth, based on the latest evidence of need...”*

Figure 5.4: Broad sub-areas



- Highways England – highlighted that: *“Proposed new growth will need to be considered in the context of the cumulative impact from already proposed development on the M4.”* A concern was also highlighted regarding *“the potential cumulative impacts from growth in both Bracknell and Wokingham on specifically M4 Junction 10”*.
- Historic England made only ‘general comments’.
- Natural England stated that it *“does not consider that this Local Plan Update poses any likely risk or opportunity in relation to our statutory purpose, and so does not wish to comment on this consultation.”*
- Reading Borough Council submitted a detailed consultation response, covering a number of topics:
 - Mix of sites – *“RBC believes that a mix of types of site will be needed to some extent, but generally supports a continuation of WBC’s existing strategy over recent years of concentration on major development locations, as this is an effective way to ensure that the right level of infrastructure is delivered at the right time.”*
 - Student accommodation – *“The Berkshire SHMA looked at the issue of student accommodation but did not identify any specific need. However, the University of Reading has recently revealed substantial growth ambitions over the next ten years, with student numbers estimated to increase from around 16,000 in 2017/18 to around 21,000 in 2028. The University submitted an Accommodation Strategy – Gap Analysis¹ to Reading’s Local Plan Examination, which considered this growth and the potential implications for student accommodation needs. RBC has very significant concerns about this level of growth, in terms of both its realism and its implications. Reading certainly could not absorb any growth along these lines on its own...”*
 - New cross-Thames vehicular route - the Homes for the Future Consultation Document discussed a long standing aspiration for an additional cross Thames vehicular route in the Thames Valley Park area. RBC responded to the consultation stating: *“The Strategic Outline Business Case produced in May 2017 demonstrates the proposed crossing would provide significant decongestion benefits to Wokingham, Reading and the wider area. Therefore, this scheme should be given sufficient weight within the emerging Local Plan to demonstrate its importance in enabling the planned growth, including provision of a protected alignment on the preferred route of the scheme.”*
 - Mass transit – RBC discussed a shared ambition with WBC in respect of delivering a mass rapid transit (MRT) and park & ride network around the urban area, including linking to Reading along the A4, A3290/M and A33 corridors – see **Figure 5.5**. RBC also stated: *“RBC is fully supportive of proposals for park & ride at Thames Valley Park, Coppid Beech and expanding the current provision at Winnersh Triangle. However, the provision of the MRT link to avoid congestion on the A4 London Road is vital to ensure a comprehensive, commercial bus service providing an attractive alternative to the private car can be provided on this corridor.”*
 - Grazeley Garden Settlement – *“The site is capable of delivering a significant amount of new homes, in a location which can be well served by public transport links to Reading and elsewhere, both by rail and bus/MRT. RBC has worked with WBC and West Berkshire District Council on bids under the Garden Settlement Prospectus and Housing Infrastructure Fund, and remains supportive of continued joint work on the site.”*
 - Other identified major development options – *“...as an initial comment, these sites are not in locations which enable an obvious connection to the existing or extended public transport network, as is the case for Grazeley, and ensuring that such developments could be delivered in a sustainable manner with appropriate levels of infrastructure provision is therefore likely to be substantially more challenging.”*
- University of Reading – elaborated on the findings of the Campus Capacity Study (2019), describing *“the complexity of managing the future growth needs and ambitions of the University”*. They highlighted a likely issue regarding an increasing number of students living in Houses of Multiple Occupation (HMOs) in Wokingham Borough, and the need to address this through purpose built student accommodation.
- Thames Water did not comment on spatial strategy but did propose wording for development management policy in respect of water supply and wastewater infrastructure.

Employment Land Needs Study (2020)

- 5.34 The six Berkshire authorities and the Thames Valley Local Enterprise Partnership jointly commissioned consultants to consider the economic geography of Berkshire. The report established that there are three Functional Economic Market Areas (FEMAs) operating across the area. Wokingham Borough is located in the Central FEMA, alongside Bracknell Forest, Reading and Windsor and Maidenhead.
- 5.35 The Economic Development Needs Assessment (2016) then identified the future quantity of land or floor space that could be required for economic development uses in each FEMA, and each unitary authority area. However, there were concerns regarding the extent to which the findings of the EDNA accurately reflected trend data, and the limited amount of land promoted for new employment use, or subject to planning applications.
- 5.36 As a result, the Wokingham Borough Council Employment Land Needs Study (2020) has been prepared, that more accurately maps specific job types to use classes and takes into account more recent economic data and forecasts. This report also provides a market analysis of the commercial property market in the Borough, and considers how far existing floorspace is meeting current requirements. The study finds:

“Wokingham has two distinct office markets; town centre and out of town. The town centre has dated purpose-built stock, which has seen offices lost to residential through permitted development rights (PDR). The prime out of town market locations are at Winnersh Triangle, Green Park and Thames Valley Park. With more secondary stock found at Molly Millars and Sutton’s Industrial Estate. We also see more specialist accommodation at Whiteknights, which benefits from its proximity and links to Reading University.”

“The focus of the property market in Wokingham Borough is not industrial uses. The borough does not attract footloose requirements from large-scale B8 users... as these tend to go to Slough or Heathrow. Slough and Heathrow are more attractive to occupiers as critical mass of other occupiers, a wider range of suitable stock, and connections to central London. The borough attracts a range of occupiers from traditional industries serving the local market through to international TMTs using the borough as their UK headquarters. Companies are attracted to the borough due to good quality purpose-built premises, and the close proximity to London.”

- 5.37 Also of note are the priorities of the Thames Valley Berkshire Local Enterprise Partnership (LEP), as set out in its 2018 response to the Government’s Industrial Strategy Green Paper - see discussion in Appendix II - although these are non-spatially specific, primarily relating to priority sectors and the need to support housing and skills development in order to ensure a suitably qualified local workforce.

Roads infrastructure update (2020)

- 5.38 A website¹² is available describing the role and status of eleven major road upgrades – see **Figure 5.6**. Taking the Shinfield and Arborfield areas as an example, and moving from west to east:
- The Shinfield Eastern Relief Road and Arborfield relief road will ensure that A327 traffic bypasses the village
 - The extension of Nine Mile Ride to connect with the A327 will help mitigate the impact of additional traffic on existing routes through Arborfield Cross and Shinfield.
 - To the east of Arborfield Garrison, the California Crossroads junction will see improvements to help with managing the vehicular traffic, as well as improving the junction for pedestrians and cyclists.
- 5.39 Also of note is consultation draft “Transport Strategy for the South East” published in October 2019 by prepared by Transport for the South East, which is the Sub-national Transport Body for the South East of England, although not one with statutory powers.¹³ The strategy notably identifies the potential to improve east-west journey times and reduce congestion through an “alternative M3/M4 link (avoiding Bracknell)”.

¹² <https://www.wokingham.gov.uk/roadworks-and-outdoor-maintenance/major-new-roads/>

¹³ <https://transportforthesoutheast.org.uk/wp-content/uploads/2019/10/TfSE-Draft-Transport-Strategy-v24.0.pdf>

Figure 5.5: Planned and proposed strategic transport schemes supported by Reading BC

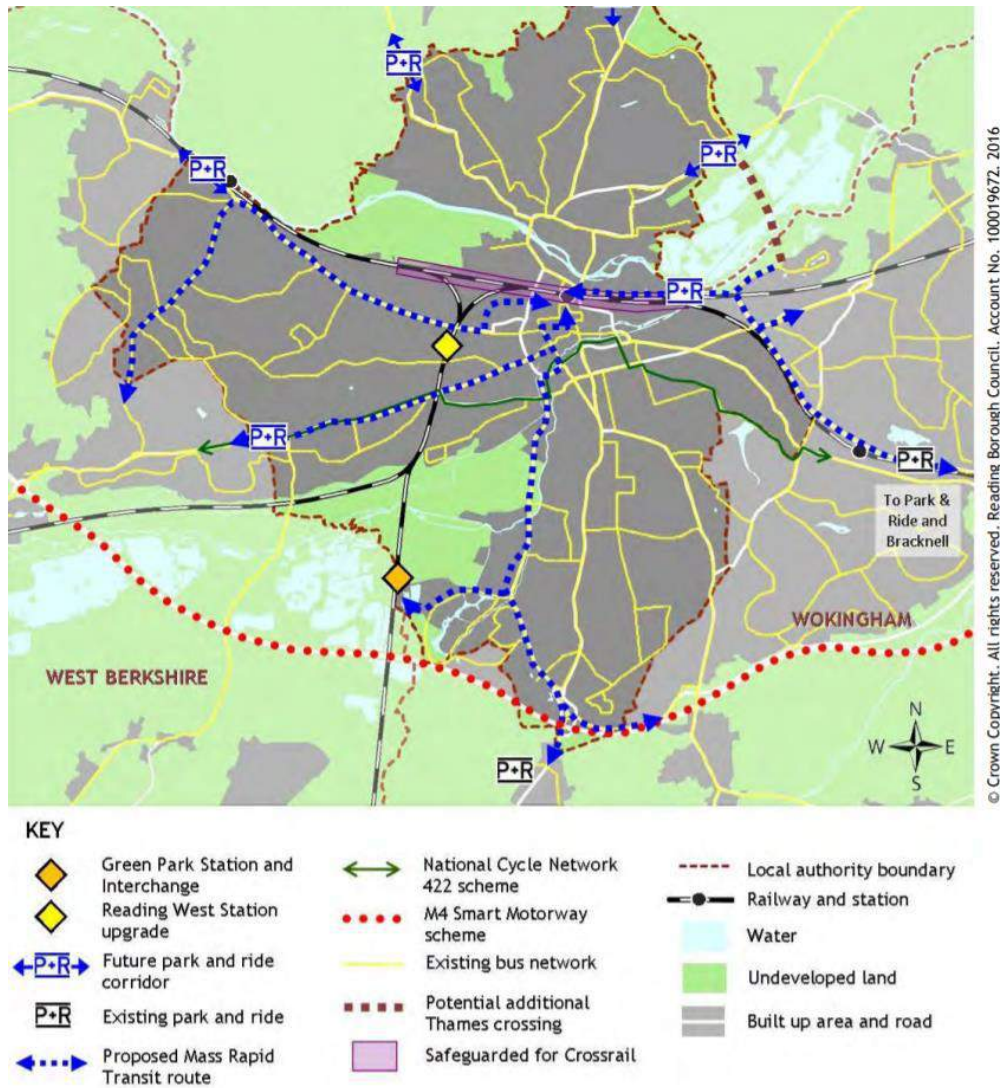
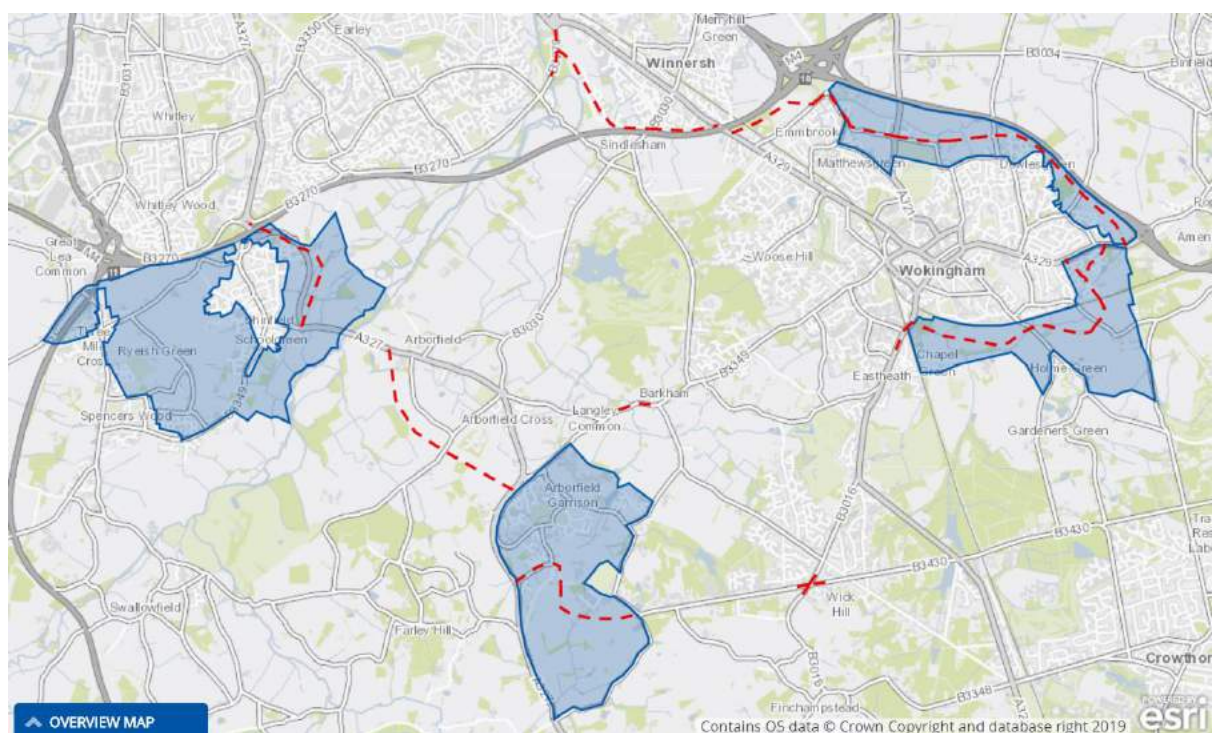


Figure 5.6: Recent, ongoing and forthcoming major road upgrade schemes associated with the SDLs



Conclusion on broad distribution options to examine further

- 5.40 A key message relates to support for strategic scale schemes able to deliver new and upgraded infrastructure in addition to housing, although it is also the case that a mix of site sizes, and a degree of dispersal, is necessary in order to ensure a smooth housing supply trajectory and ensure that local housing needs are met within all parts of the Borough. There is also a need to distribute housing in line with the settlement hierarchy as far as possible, although strategic scale schemes can deliver targeted new community infrastructure that serves to change the position of a settlement in the hierarchy, and new settlements are an option with support nationally and locally. Further strategic considerations relate to: making the best use of previously developed sites; protecting the Green Belt as far as possible (N.B. a Green Belt study (2016) has been completed to examine the degree to which each parcel of land within the Wokingham Green Belt contributes to the nationally defined purposes); supporting the successful completion of the four SDLs and allowing the new communities time to 'bed in'; delivering new employment land in well-connected locations including on the edge of the Reading; supporting transport and other strategic infrastructure upgrades, including identified opportunities for mass transit; and ensuring that nationally important operations at AWE Burghfield are not compromised. There is a need to explore spatial strategy alternatives in line with these key messages further below.

Site issues and options

- 5.41 A large number of site options have been submitted to the Council by land-owners (including the Council itself), and a process of Housing and Economic Land Availability Assessment (HELAA) has been completed in order to identify a shortlist of sites that are available and deliverable, and potentially suitable for allocation.
- 5.42 The HELAA provides an important starting point for the task of establishing reasonable spatial strategy alternatives, i.e. alternative combinations of sites for allocation. The HELAA has been completed taking account of site-specific Homes for the Future (2018) consultation responses.
- 5.43 Within Wokingham Borough, as within other local authority areas, there is an important distinction between strategic and non-strategic sites. Strategic sites are those with a housing capacity in the hundreds or in the thousands, and which will be associated with economies of scale that enable delivery of a good mix of uses (also a good mix of homes), potentially to include employment land, and/or enable delivery of new or upgraded infrastructure (e.g. new road infrastructure, community infrastructure, green infrastructure).
- 5.44 This section firstly gives detailed consideration to the pool of available / deliverable / potentially suitable strategic sites, before giving more light-touch consideration to the pool of available non-strategic sites.

Strategic site options

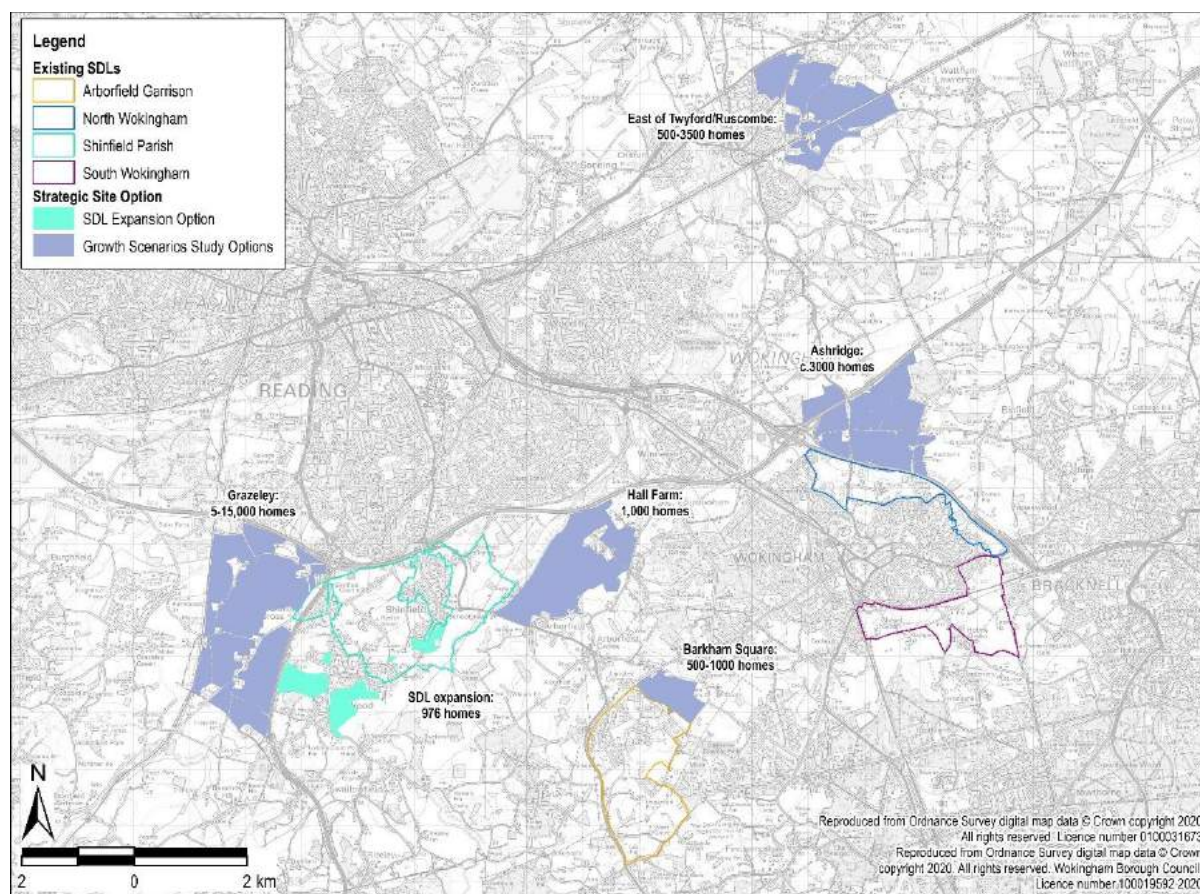
- 5.45 The adopted Core Strategy included a focus on strategic sites, in the form of the four allocated SDLs, and a more or less similar focus on strategic sites is an option for the LPU, as discussed above.
- 5.46 This being the case, in 2018 the Council commissioned a "Strategic Growth Locations: Growth Scenarios" study that examined growth scenarios for five potential strategic growth locations, namely:
- Grazeley – the study examined scenarios involving 5,000, 10,000 and 15,000 homes;
 - Twyford/Ruscombe - the study examined scenarios involving 500, 2,250 and 3,500 homes;
 - Barkham Square - the study examined scenarios involving 500, 750 and 1,000 homes;
 - Hall Farm - the study examined one scenario involving 1,000 homes; and
 - Ashridge - the study examined one scenario involving 3,000 homes.
- 5.47 Another strategic option would involve expansion of the existing Shinfield (South of the M4) SDL.¹⁴ This would deliver 976 homes across a number of sites, to include a focus of growth to the south and west of Spencers Wood and to the south of Shinfield. Strategic expansion would involve:
- one small site within the Shinfield North settlement (5SH031);
 - one small site within the SDL, at its northern extent (5SH011);

¹⁴ See www.wokingham.gov.uk/major-developments/shinfield-parish/

- two small sites within the SDL, to the south of Spencer's Wood (5SH003 and 5SH008);
- a cluster of three larger sites to the south of Shinfield (5SH023, 5SH026 and 5SH027);
- a significant expansion west of the SDL (west of Spencer's Wood; 5SH001/17/35); and
- a significant expansion southwest of the SDL (south of Spencer's Wood; 5SH013).

5.48 Support for any such expansion of the SDL would only be considered under a scenario whereby Grazeley is not allocated, as discussed further below.

Figure 5.7: Long list of strategic site options



5.49 The Growth Scenarios Report served to identify one growth location as performing relatively poorly, namely Ashridge,¹⁵ and the Council stands by the conclusion at the current time. The Council believes this to be a relatively poorly performing growth location, with the site falling within the sector of land - north of Wokingham between the M4 and A329 - that is broadly not supported for strategic growth through the LPU, given poor connectivity, a risk of urban sprawl towards Binfield / Bracknell and proximity an SDL. As such, a strategic scheme at Ashridge need not feature within the reasonable spatial strategy alternatives.

¹⁵ The study concludes: "the collection of sites promoted through the Call for Sites at Ashridge has been considered on the basis that it provides an opportunity for a more comprehensive strategic development of up to 3,000 dwellings located north of Wokingham between the A329(M) and the M4 and to the west of Warren House Road. Alongside new residential neighbourhoods, there is potential to integrate business growth at existing farm complexes through designating mixed-use areas. Detailed mitigation would need to address air quality and noise associated with the M4 and A329(M), surface water management and sustainable drainage systems and established woodlands and habitats, notably Ashridge Wood. The setting of listed buildings, especially at the Bill Hill estate, also requires a sensitive response.

The extent to which new development presents the opportunity to deliver improvements to the road network has been considered and incorporated in the concept layout for the site. As such, significant investment in public transport facilities is considered necessary to ensure that this could deliver a sustainable site. Due to the assumed costs to the developer of upfront or early stage infrastructure, the high-level viability assessment shows that development would not generate a land value sufficiently above existing use value to encourage a landowner to sell for development. This could be further tested in scenarios with lower than policy level affordable housing or where more of the infrastructure burden is paid for from CIL receipts."

5.50 Also, the Strategic Growth Locations study, when considered alongside additional evidence, enables three further conclusions to be drawn in respect of options that can reasonably be ruled-out:

- Grazeley – lower growth options involving 5,000 or 10,000 homes can reasonably be ruled out. There is a need for major infrastructure upgrades, in particular transport infrastructure, such that a smaller scheme would result in clear viability challenges if accelerated delivery is to be achieved, in line with the Governments objectives for garden communities. Even a 15,000 home scheme would likely (or, at least, could potentially) require funding from Central Government, and, as such, a Housing Infrastructure Fund (HIF) bid was submitted to Government by WBC in March 2019.
- Twyford/Ruscombe – the lower growth option involving 500 homes can reasonably be ruled out. Capacity of the site in question, which lies in the Green Belt between the A4 and the A302 to the northeast of the settlement, is considered likely to be below 500 homes in practice and would deliver only modest measures to address traffic congestion and poor air quality at the town centre cross-roads.
- Barkham Square – a higher growth option involving 1,000 homes can be ruled out. This is on the basis that there would be insufficient space on site to deliver the requisite area of Suitable Alternative Natural Greenspace (SANG) needed to mitigate recreational impacts to the Thames Basin Heaths Special Protection Area (SPA). Development at Barkham Square would need to be self-sufficient in terms of SANG provision, as opposed to relying on offsite provision (e.g. provision being made at Arborfield SDL, as part of an agreed SANG strategy).

5.51 The remaining sites / site-specific growth scenarios were identified as warranting further detailed consideration, and were subjected to a comparative appraisal, as set out within **Appendix IV** of this report.

5.52 In light of the comparative appraisal of shortlisted strategic site options presented within Appendix IV, the Council reached a conclusion that the following sites / site-specific growth scenarios can reasonably be ruled-out:

- Twyford/Ruscombe - on balance the higher growth option can reasonably be ruled out. It would deliver limited additional infrastructure over-and-above the medium growth option and necessitate development of land to the south of the railway line (or, alternatively, development of land further to the east; see discussion within Appendix IV), which is subject to a degree of constraint in biodiversity and potentially landscape/heritage terms, abuts the flood risk zone and is potentially problematic in access terms.
- Barkham Square - the middle growth option involving 750 homes can be ruled out. It would not be likely to enable delivery of significant additional infrastructure (e.g. a primary school), and a lower density scheme with generous open space and landscaping is considered appropriate for this location.
- Hall Farm – this strategic site option can be ruled out. A 1,000 home scheme would deliver a primary school for Arborfield village, and the site is subject to limited constraints; however, the site is in proximity to two existing SDLs, which gives rise to concerns in respect of infrastructure capacity locally, including in respect of Junction 11 of the M4. There is also a need to consider the strategic green infrastructure value of this sector of land, associated with the River Loddon valley and river terrace gravels.

5.53 In **conclusion**, it was determined appropriate to progress four strategic site options for further detailed consideration through the appraisal of reasonable spatial strategy alternatives, namely:

- Grazeley (15,000 homes);
- East of Twyford/Ruscombe (c.2,000 homes; see further discussion of capacity in Appendix IV);
- South of the M4 (Shinfield Parish) SDL extension (976 homes); and
- Barkham Square (500 homes).

Non-strategic site options

- 5.54 277 site options were assessed through the HELAA (2020) - see Figure 5.8. Of these, 37 form all or part of one of the strategic site options discussed above.
- 5.55 The HELAA is the main vehicle for considering the merits of non-strategic sites; however, a supplementary piece of analysis has been completed, with the findings presented within **Appendix V**.
- 5.56 Specifically, Appendix V presents the findings of a quantitative GIS-based exercise, which has involved examining the spatial relationship (i.e. proximity to / percentage intersect) between all HELAA sites and a range of constraint (e.g. flood zones, designated heritage assets) and opportunity (e.g. GP surgeries) features for which data is available in digitally mapped form across the Borough as a whole.
- 5.57 The following is a brief discussion of key findings:
- GP surgery - 39 site options are within 400m of a GP surgery, and a further 49 are within 800m and the average distance is 1312m. South Reading and Shinfield Group Medical Practice is notable as the GP surgery closest to the most sites (45 sites with a total area of 652 ha).
 - Air quality management area (AQMA) - 21 site options intersect an AQMA (in each instance that associated with the M4 motorway) and a further 16 are within 100m (primarily the M4 AQMA). The average distance is 1,880m, serving to suggest much potential for increased traffic through an AQMA.
 - Safety hazard – 51 site options intersect the AWE Burghfield Outer Zone.
 - Special Protection Area (SPA) - one site option falls within 400m, a further three fall within 1,000m, a further eight within 2,000m and a further 36 within 3,000m. The average distance is 6,030m. In each instance the nearest SPA is the Thames Basin Heaths SPA.
 - Site of Special Scientific Interest (SSSI) - four site options are adjacent to a SSSI, a further ten are within 400m and a further 22 are within 800m. The average distance is 2123m. Lodge Wood & Sandford Mill is notable as the SSSI closest to the most sites (112 sites with a total area of 903 ha).
 - Local Wildlife Site (LWS) - 20 site options intersect a LWS and a further 25 are adjacent; average is 356m.
 - Priority habitat - 16 site options comprise more than 50% priority habitat, a further 63 site options intersect priority habitat by less than 50% and a further 79 sites are adjacent. The average distance is 66m.
 - Biodiversity Opportunity Area (BOA) - 58 sites intersect, primarily associated with the Loddon Valley.
 - Tree Protection Order (TPO) - 77 site options intersect a TPO designation, with 17 sites > 50%.
 - Flood Zone (FZ3) - 47 site options intersect flood zone 3, which is the zone of highest risk (with seven sites > 50%) and a further 17 sites intersect flood zone 2.
 - Surface water flood risk (SWFR) - 41 site options intersect the 1 in 1000 year SWFR zone > 50%.
 - Strategic Development Location (SDL) - 33 site options intersect an SDL (primarily South of the M4) and a further 28 are within 100m. The average distance to an SDL is 1,723m
 - Employment area - six site options intersect a designated employment area, a further six sites are adjacent and a further 107 sites are within 1,000m.
 - Listed building (LB) - eight site options intersect or are adjacent to a LB, and a further 70 are within 50m, with the average distance 276m.
 - Conservation Area (CA) - 16 site options intersect or adjacent to a CA, with the average distance 1,273m.
 - Registered Park or Garden (RPG) - nine site options are within 50m and one other site is within 100m.
 - Scheduled Monument (SM) - three site options are adjacent and a further two sites are within 50m.
 - Agricultural land - 12 sites intersect land shown to be of grade 1 quality by the nationally available (low resolution) dataset, and a further 24 sites intersect land shown to be of grade 2 quality.
 - Minerals Safeguarding Area (MSA) - 165 sites intersect a MSA, including 89 sites that entirely intersect.

Sub-area issues and options

Introduction

5.58 Discussion has so far focused on A) 'top down' considerations of housing quantum and broad distribution issues and options; and B) 'bottom-up' consideration of site specific issues and options. The next step is to consider each of the Borough's sub-areas in turn, exploring how sites might be allocated in combination.

What sub-areas?

5.59 The Homes for the Future consultation document (2018) divided the Borough into five sub-areas based on the overall geography (see Figure 5.4, above); however, for the purposes of this work (i.e. for the purposes of establishing reasonable spatial strategy alternatives) it was determined appropriate to use sub-areas defined to reflect the clustering of site options. **13 site clusters** were defined – see Figure 5.8.

Structure of this section

5.60 This section considers each of the site clusters in turn, discussing the site options that are feasibly in contention for allocation, taking the HELAA findings as a starting-point, before reaching a conclusion on whether the approach to allocation:

- can reasonably be held **constant** across the reasonable spatial strategy alternatives; or
- needs to be a **variable** and, if so, what the **options** are.

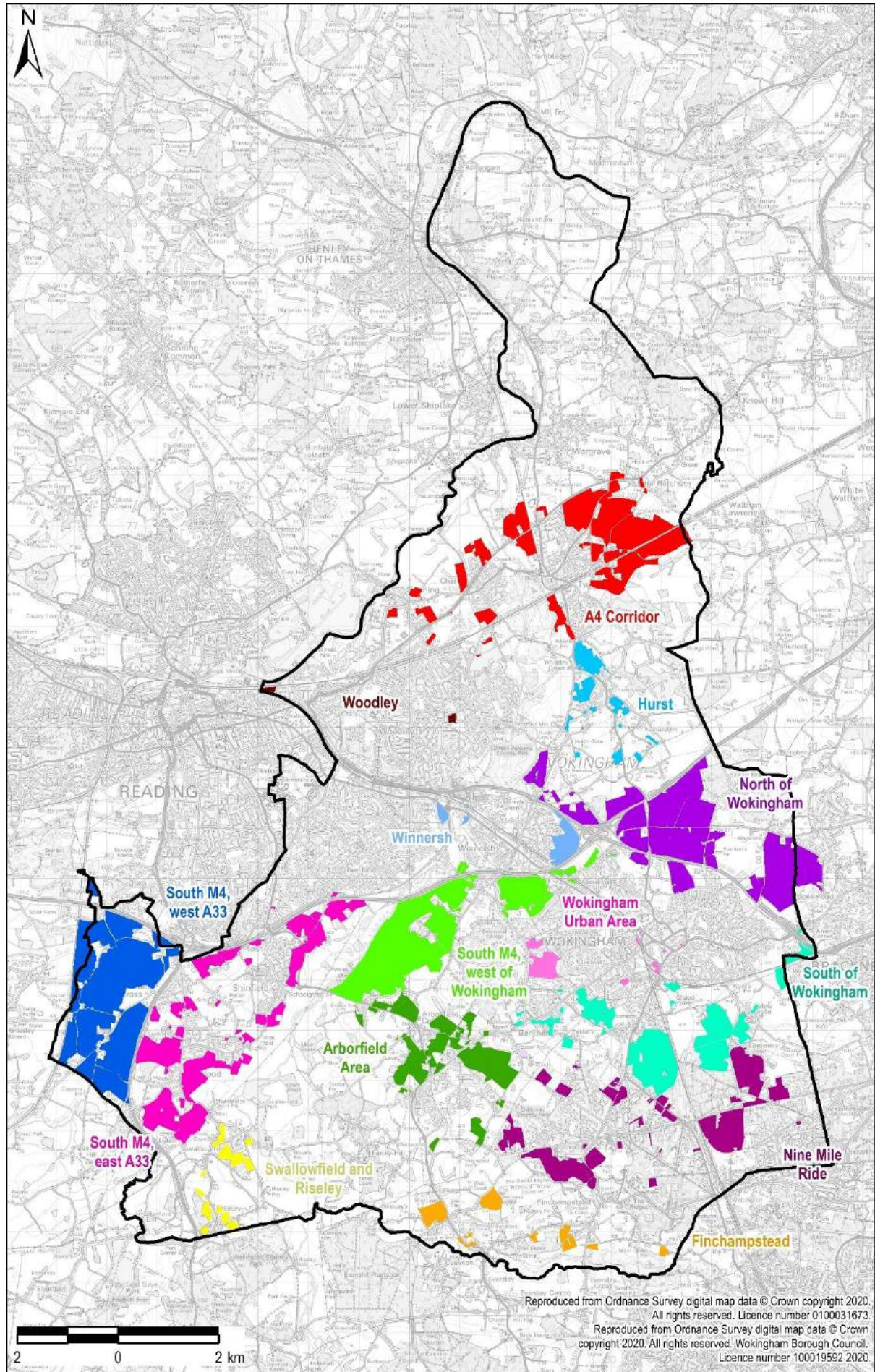
5.61 The 13 site clusters are discussed in order of geographical location, from north to south.

A note on methodology

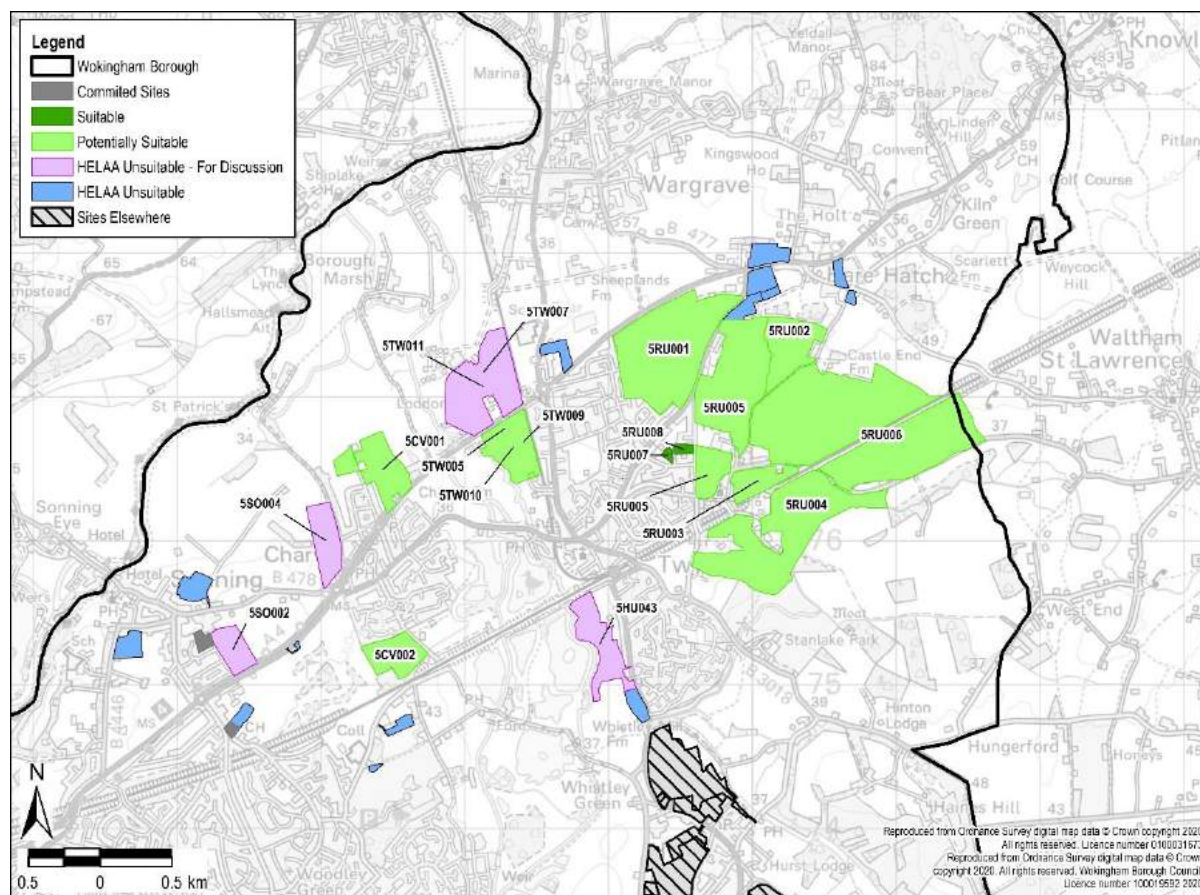
5.62 There is a large number of sites not supported by the HELAA, i.e. *not* identified as available, achievable and either suitable or potentially suitable. As part of the discussions below, consideration is given to a proportion of these sites that stand-out as potentially warranting inclusion as an allocation within one or more of the reasonable spatial strategy alternatives. The aim is not to systematically consider each and every one of these sites in turn.

5.63 The decision on which sites 'stand out' and hence warrant discussion below is made on the basis of professional judgement by the AECOM team working in collaboration with the Council's Local Plan team, drawing upon evidence including that provided by the site options GIS analysis presented within Appendix V. There is a focus on larger sites (>10 ha) as there can be merit to supporting larger/strategic schemes.

Figure 5.8: Site options grouped into clusters



A4 corridor



- 5.64 The HELAA identifies two uncommitted sites as suitable and a further eleven sites as potentially suitable.
- 5.65 Beginning with the two uncommitted 'HELAA suitable' sites, these are both broadly supported to extent that they can reasonably be held constant as allocations across the reasonable spatial strategy alternatives. They are both small sites within the urban area.
- 5.66 Of the eleven 'HELAA potentially suitable' sites it is considered that five are broadly supported to extent that they can reasonably be held constant as allocations across the reasonable spatial strategy alternatives. Flood risk is a notable constraint to the proposed expansion of Twyford to the west and Charvil to the north, and a series of scheduled monuments is a constraint to expansion of Charvil; however, there will be the potential to avoid and mitigate the flood risk and heritage impacts through policy and the development management process.
- 5.67 The remaining six HELAA potentially suitable sites make up the "East of Twyford/Ruscombe" strategic site option, which has already been discussed above, with the conclusion reached that there is a need to explore two options, namely: 1) nil allocation; and 2) allocation of a strategic site for c.2,000 homes.
- 5.68 With regards to 'HELAA unsuitable' sites, the following stand-out as larger sites (>10ha), but on balance can be ruled-out:
- Land North of the A4 (5TW007/011) - whilst in theory there could be benefit to bringing forward this site in combination with the HELAA potentially suitable site to the south (Land at Bridge Farm; TW005/009/010) as an urban extension that would complete the expansion of Twyford to the northwest, as far as the flood risk zone; in practice it is not clear that any such opportunity exists, with the two sites separated by the A4. Furthermore, the 500 homes delivered by any combined scheme would likely be insufficient to trigger significant infrastructure upgrades. On balance, expansion to the north of the A4 is not supported, including on the basis that Twyford village centre would be beyond easy walking distance and there is a need to avoid increased car movements through the Twyford Crossroads AQMA.
 - Land to the west of Hurst Road (5HU043) - within the flood risk zone and allocated for a Country Park.

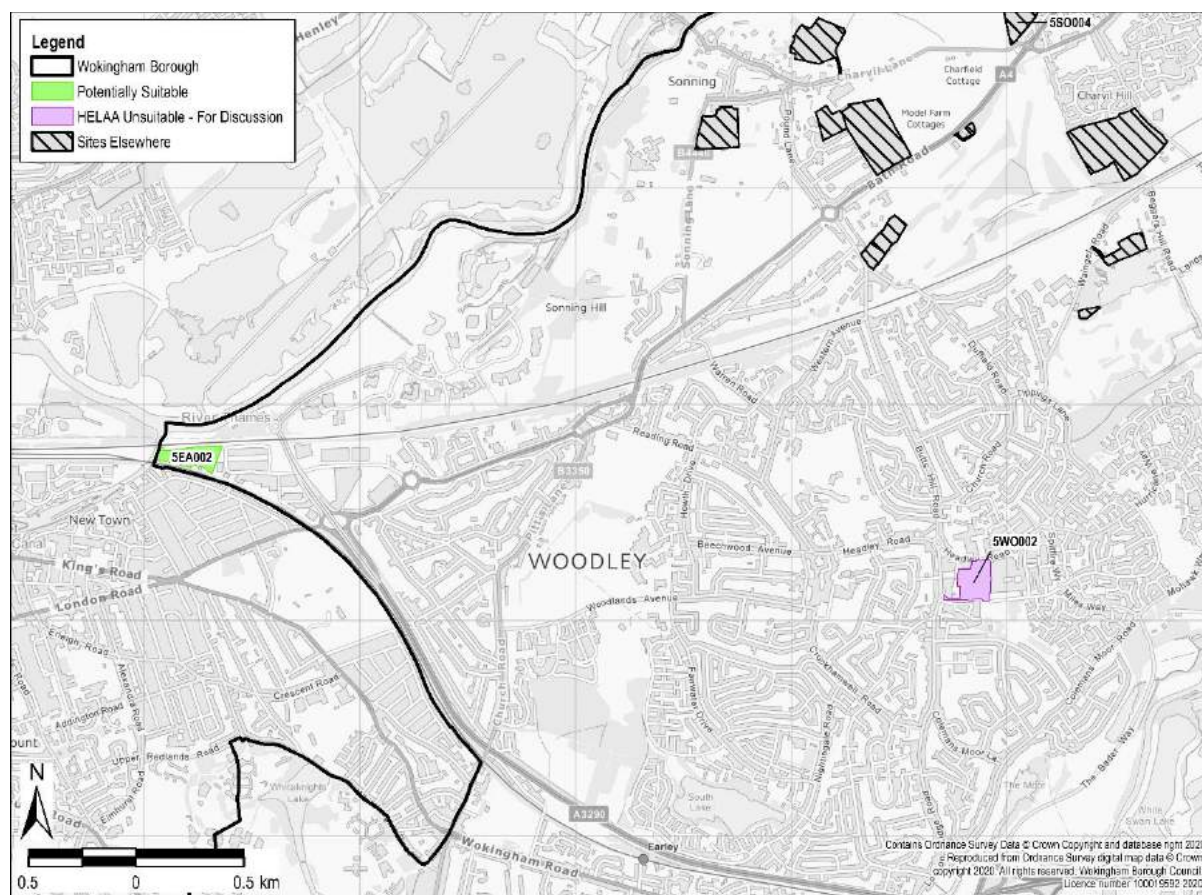
5.69 A final notable HELAA unsuitable site is 5SO004 at Charvil, which is being promoted alongside HELAA potentially suitable site 5CV001 with a view to delivering a more comprehensive northern expansion of the village. This larger expansion would deliver additional green infrastructure, but little else in the way of infrastructure to the benefit of this part of Charvil, namely that part to the north of the A4. It would also impact on the gap between Charvil and Sonning (also noting that a HELAA unsuitable site is located to the east of Sonning, bounded to the east by a scheduled monument). On balance this site need not feature within the reasonable spatial strategy alternatives.

5.70 A final point to note is that both Ruscombe and Twyford Parishes are in the process of preparing Neighbourhood Development Plans (NDPs); however, both are at early stages of preparation.

5.71 In **conclusion**, there is a need to explore the approach to allocation further as a variable across the reasonable spatial strategy alternatives, and specifically explore the following **options**:

- 1) 330 homes at seven sites (two HELAA suitable; five HELAA potentially suitable);
- 2) Additional strategic expansion east of Twyford/Ruscombe (see discussion of precise figure below).

Woodley

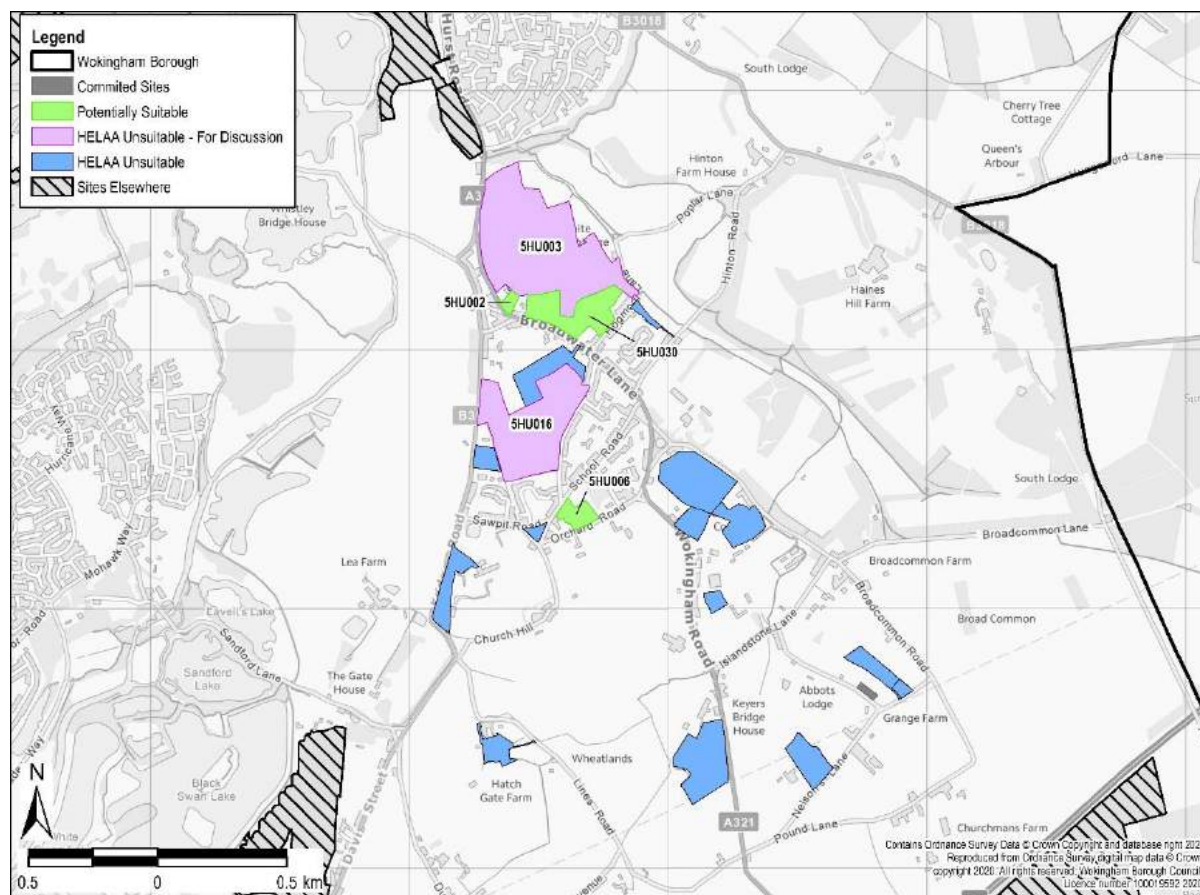


5.72 The HELAA identifies just one site as ‘potentially suitable’ for non-housing uses (employment).

5.73 It follows that there is not considered to be any reasonable option involving allocation of land at Woodley to deliver new housing, despite the fact that Woodley is a Tier 1 settlement within settlement hierarchy. This reflects the fact that Woodley is a mature suburb of Reading, bounded by the River Loddon floodplain. There will be the potential to proactively explore redevelopment options within Woodley town centre in the future; however, this is not something that warrants consideration through this current Local Plan.

5.74 In **conclusion**, nil allocations is the only reasonable option, i.e. this approach to (non) allocation can be held constant across the reasonable spatial strategy alternatives.

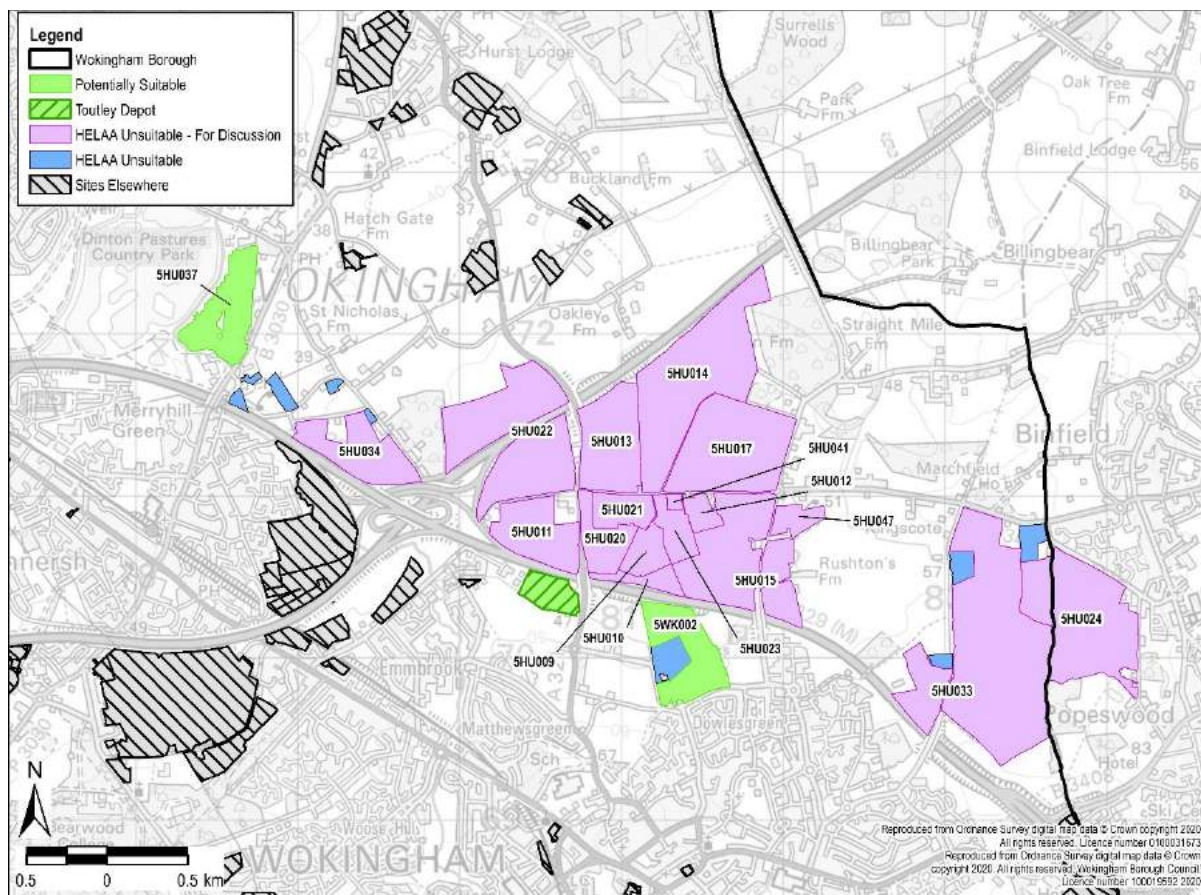
Hurst



- 5.75 The HELAA identifies three sites as potentially suitable, of which two (5HU002 and 5HU030) are quite firmly supported, to extent that they can reasonably be held constant as allocations across all of the reasonable spatial strategy alternatives. 5HU030 is notably larger than the other, at 4ha in size, and is potentially associated with certain landscape and heritage sensitivities; however, there is an expectation of frontage development only, and the site is well located in respect of local facilities.
- 5.76 The remaining site (5HU006) is considered to be potentially suitable in site-specific HELAA terms, but unsuitable for allocation, to the extent that it can reasonably be excluded from the reasonable spatial strategy alternatives, in light of more strategic considerations, and in particular the understanding that the site is used annually for the Hurst Show and Country Fayre.
- 5.77 With regards to 'HELAA unsuitable' sites, the following stand-out as larger sites (>10ha), but on balance can be ruled-out:
- Whistley Meadow St Nicholas, Whistley Green (5HU003) - forms the separation between Hurst and Twyford to the north and is considered to perform poorly on this basis.
 - Land on the east side of Lodge Road (5HU016; also noting adjacent 5HU031) - sits between the main settlement area to the east and the B3030 to the west, and hence benefits from a degree of containment in the landscape; however, there would inevitably impacts to local character and there is no evidence to suggest that development at this scale would be appropriate at Hurst, as a tier 3 settlement in the settlement hierarchy.
- 5.78 Of the remaining smaller site options, none stand-out as having particular merit, although it is noted that the loose built form of the village does inherently mean that there are arguments for development that could serve to rationalise the settlement boundary. The possibility of site allocation will be explored through the Hurst NDP, with the NDP website stating that the NDP Working Group will be considering sites for allocation and have "received submissions from landowners who have not submitted for the local plan but would like to be considered for the neighbourhood plan".

5.79 In **conclusion**, allocation of HELAA potentially suitable sites 5HU002 and 5HU030 to deliver 15 homes is the only reasonable option, i.e. this approach to allocation can be held constant across the reasonable spatial strategy alternatives.

North of Wokingham



5.80 The HELAA identifies one site (5WK002) as potentially suitable for housing, with a capacity of 150 homes. This is the one site option that falls to the south of the A329(M) and within the North of Wokingham SDL. Allocation of this site is considered to be in line with the objective of successfully completing the SDL, with the land in question not having been intended to deliver open space, or any other non-housing use, at the time of SDL designation, hence its allocation is broadly supported to the extent that it can reasonably be held constant across the reasonable spatial strategy alternatives. The site is notably constrained by flood risk, but there will be the potential to avoid and mitigate the flood risk through policy and the development management process.

5.81 A second HELAA potentially suitable site (5HU037) comprises a golf course abutting Dinton Pastures Country Park. The Council considers that the use of the site for a similar type of leisure activity and / or facilities would be potentially suitable, subject to there being no harm to the surrounding area. Any built leisure facility which would harm the character of the country park would not be suitable

5.82 Additionally, there is one site that has not been assessed through the HELAA on the basis that it is an existing employment allocation following the MDD Local Plan (2014), namely Land east of Toutley Depot. Employment has not been delivered on the site, and the latest evidence serves to suggest limited need for new employment land in the Borough, hence the Council now considers that that site is suited to housing. The site is adjacent to the A329(M), but otherwise subject to limited constraint, hence it can reasonably be held constant across the reasonable spatial strategy alternatives.

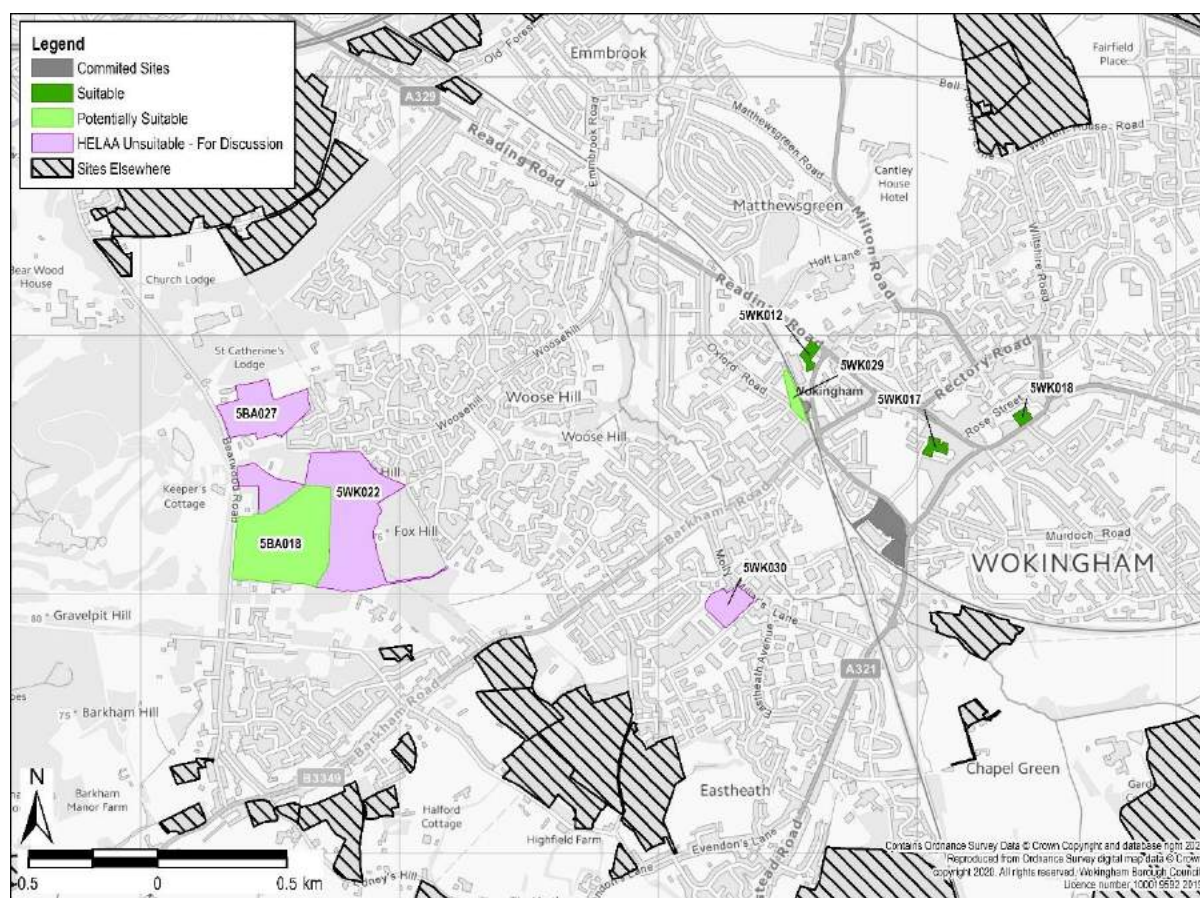
5.83 With regards to 'HELAA unsuitable' sites, a first port of call is the cluster of sites that would deliver a strategic scheme at 'Ashridge', which has already been ruled-out, above.

5.84 Of the remaining options the following stand-out as larger sites (>10ha), but on balance can be ruled-out:

- Land at Stokes Farm, Binfield Road (5HU033) - abuts Bracknell Forest Borough; however, the adjacent land is proposed for designation as a Strategic Gap through the Draft Bracknell Forest Local Plan (2019), hence any scheme at 5HU033 would not connect to either Bracknell or Wokingham.
- Land to the North of London Road and East of the A329M (5HU024) - a cross-border site mostly comprising the aforementioned land in Bracknell Forest proposed for designation as a Strategic Gap. This site is being proposed for employment, although it may be suited to delivering SANG.
- Land West of Dunt Lane / South of Green Lane (5HU034) - an isolated site adjacent to M4 J10.

5.85 In **conclusion**, allocation of two sites to deliver 250 homes – namely HELAA potentially suitable site 5WK002 and Land East of Toutley Depot - is the only reasonable option, i.e. this approach to allocation can be held constant across the reasonable spatial strategy alternatives.

Wokingham urban area



5.86 The HELAA identifies three sites as suitable and two as potentially suitable; however:

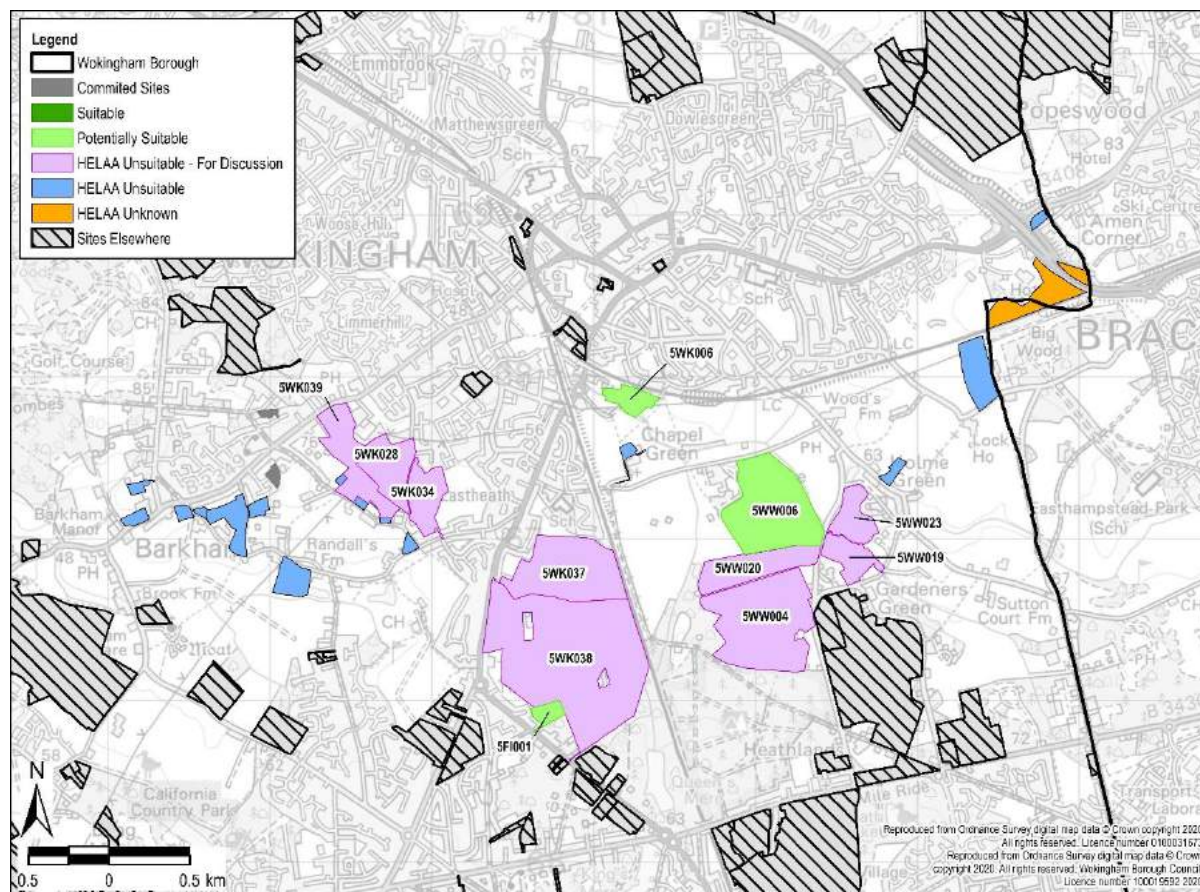
- The availability of two of the suitable sites (5WK017 and 5WK018) is uncertain due to complex land ownership issues, such that it is not possible to identify these sites as allocations at the current time.
- Potentially suitable site 5BA018 offers the opportunity for brownfield redevelopment to a more neighbourly use, however due to its isolation from the built up area and services, allocation is not supported.

5.87 The remaining two sites are broadly supported to the extent that allocation can reasonably be held constant across the reasonable spatial strategy alternatives.

5.88 With regards to 'HELAA unsuitable' sites, two are clustered at the southwest extent of the town (west of Limmerhill / north of Barkham) associated with an extensive area of woodland. The woodland represents an important asset, including in biodiversity and recreation terms (although public access is seemingly limited, with just one public footpath). The final HELAA unsuitable site (5WK030) is located within a designated employment area.

- 5.89 A final point to note is that no HELAA sites are found within that part of the wider urban area to the east of the town centre; however, this is understandable, noting proximity to the SDLs. As per the discussion above under 'Woodley', this is a mature urban area, with all areas of undeveloped land serving a function.
- 5.90 In **conclusion**, allocation of one HELAA suitable site (5WK012) and one HELAA potentially suitable site (5WK029) to deliver 101 homes in total is the only reasonable option, i.e. this approach to allocation can be held constant across the reasonable spatial strategy alternatives. Additionally, it is fair to assume delivery of 100 homes within the town centre, in addition to the baseline windfall assumption.¹⁶

South of Wokingham

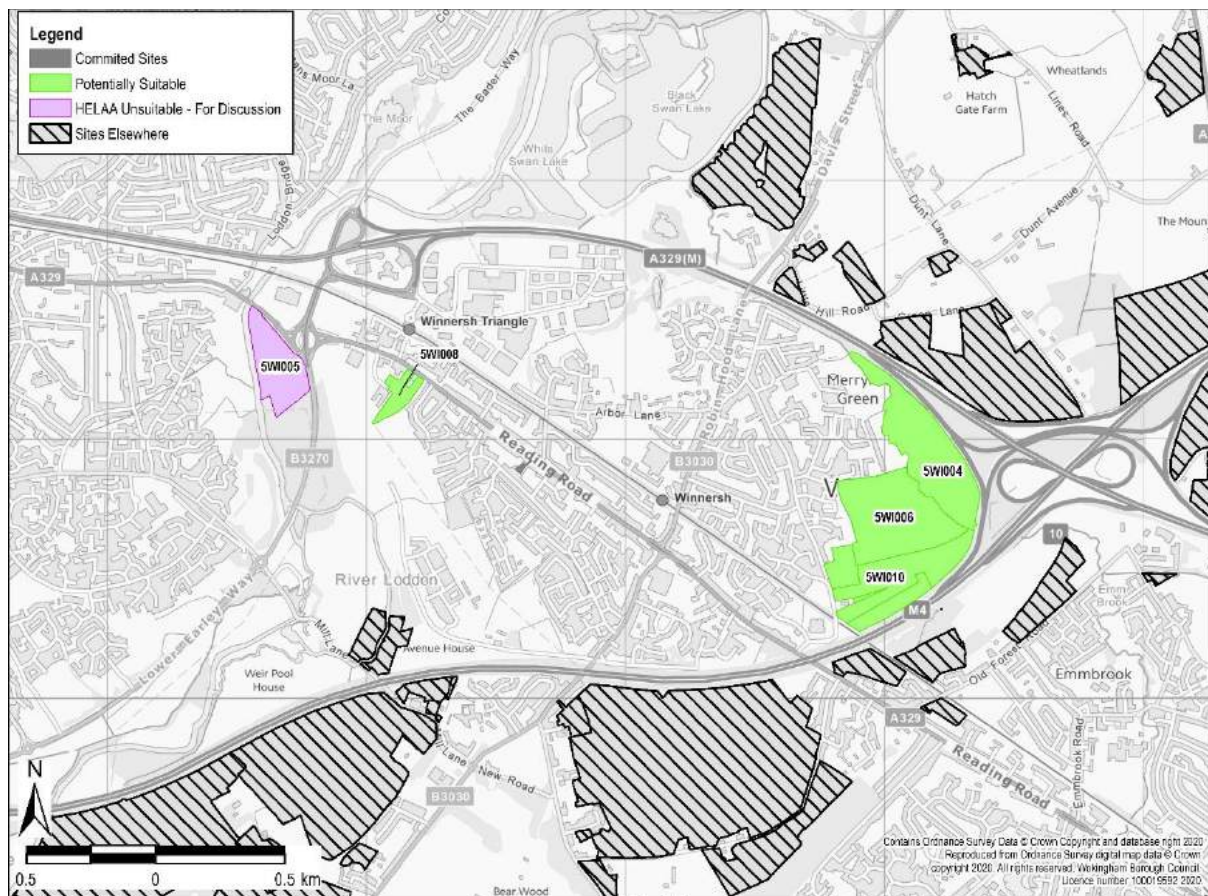


- 5.91 The HELAA identifies one site (5WK006) as potentially suitable for housing. There are also two further 'HELAA potentially suitable sites', although both are potentially suitable for non-housing uses only. Also, 5WK026 is unable to reach a conclusion on 5WK026, which is being considered as a potential SANG.
- 5.92 HELAA potentially suitable site 5WK006 falls within the South of Wokingham SDL; however, allocation of this site is in line with the objective of successfully completing the SDL, with the land in question not having been intended to deliver open space, or any other non-housing use, at the time of SDL designation hence its allocation is broadly supported to the extent that it can reasonably be held constant across the reasonable spatial strategy alternatives. The site is constrained by a stream corridor with associated flood risk and priority habitat, but there will be the potential to avoid and mitigate the flood risk, and address biodiversity matters through policy and development management.
- 5.93 With regards to 'HELAA unsuitable' sites, a first port of call is the cluster of sites (5WW004; 5WW019; 5WW020; 5WW023) located at the eastern extent of this area, i.e. within Wokingham Without Parish, which in theory might deliver a southern extension to the South of Wokingham SDL. However, there is no strategic support for extension of this SDL, with the southern part of the SDL primarily delivering open space / SANG and effectively bounded by a stream corridor.

¹⁶ This modest figure reflects the fact that a large number of new homes have recently been delivered as part of the town centre regeneration initiative, which has been ongoing for a number of years following adoption of the Wokingham Town Centre Masterplan SPD in 2010, and further homes are set to be delivered through sites with planning permission. See <https://www.wokingham.gov.uk/major-developments/wokingham-town-centre-regeneration/>

- 5.94 Moving west, a second cluster of sites is found to the west of the railway line, more-or-less directly to the south of Wokingham. Focusing on the northern-most site within this cluster (5WK037), this site could potentially link relatively well to the southern urban edge of Wokingham (Eastheath); however, there would be concerns in respect of reducing the gap between Wokingham and Finchampstead north, and concerns regarding traffic congestion in this area (south of Wokingham), given the delivery of the nearby SDL.
- 5.95 Moving west, Land at Blagrove Lane (5WK028) is a notably large (29.4 ha) site that could feasibly deliver an urban extension to the southwest of Wokingham. There are notable environmental constraints in this area, including Bottle Copse Local Wildlife Site (LWS) and a cluster of listed buildings at Blagrove Farm. More generally, this area has a rural character and contributes to a sense of separation between Wokingham and Barkham. However, as per 5WK037 above, it is again the case that traffic congestion south of Wokingham is potentially an overriding concern. The possibility of strategic growth to the south of Wokingham delivering a new east-west road link (which might act as a bypass to Wokingham town centre or, more strategically, a new major link between the M3 and M4 in order to reduce pressure on Bracknell), might feasibly be explored in the future but is not currently a realistic option.
- 5.96 Moving west, a final loose cluster of sites is found in the Barkham area; however, none stand-out as having any particular merit for allocation, noting traffic congestion concerns (as per sites discussed above) and proximity to the Arborfield Garrison SDL to the south. This area also falls within the boundary of the Arborfield and Barkham NDP, which is discussed further below.
- 5.97 In **conclusion**, allocation of 5WK006 to deliver 17 homes is the only reasonable option, i.e. this approach to allocation can be held constant across the reasonable spatial strategy alternatives. Additionally, the Council supports allocation of 5FI001 (Tintagel Farm, Sandhurst Road) for five Gypsy and Traveller pitches.

Winnersh



5.98 The HELAA identifies four sites as potentially suitable for housing:

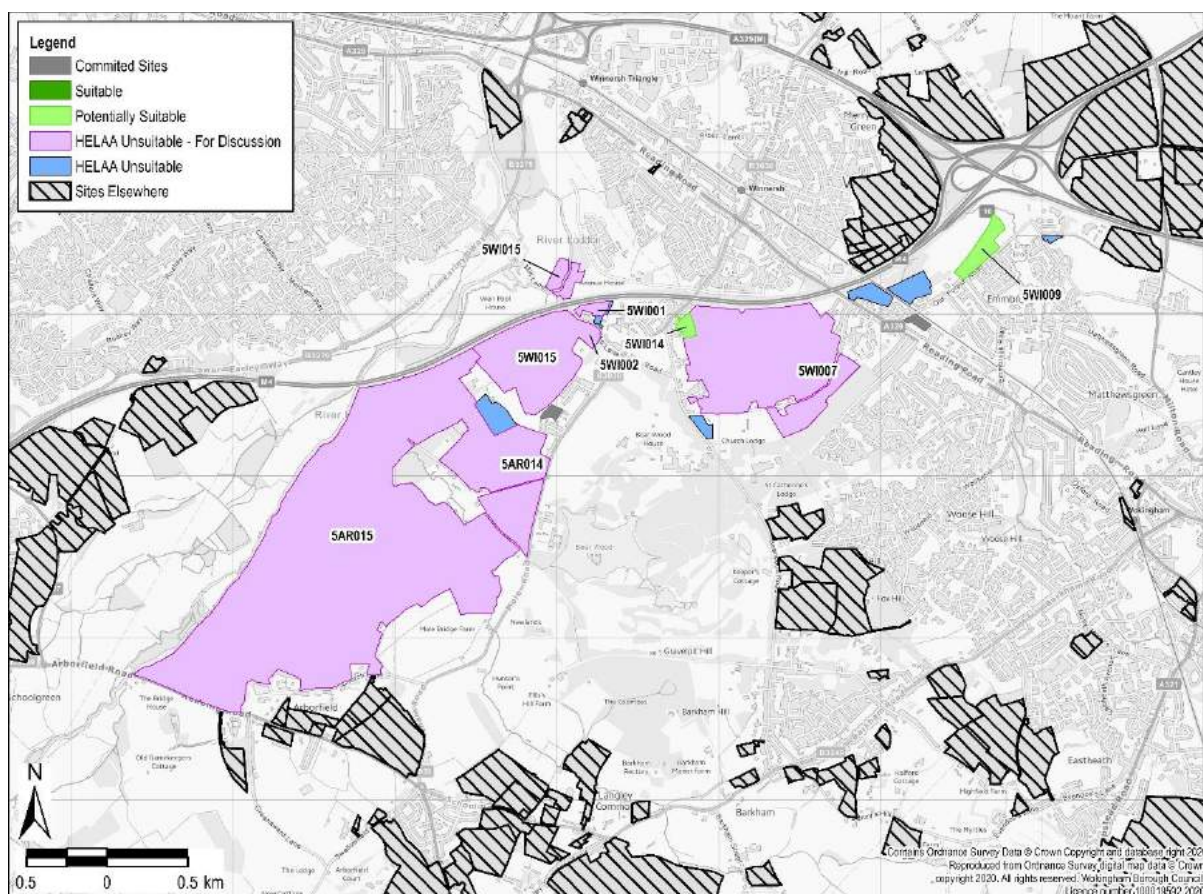
- 5WI004/06/10 form a cluster at the eastern extent of Winnersh that would deliver c.250 homes and complete the expansion of Winnersh as far as flood zones and the two motorways. These sites are in proximity to the motorway junction, constrained by flood risk zone and would involve an extension to a housing estate such that achievement of good access to the strategic road network could prove challenging; however, the land is subject to limited environmental constraint in other respects, and there is an expectation that flood risk can be avoided / mitigated through policy and development management.
- 5WI008 falls entirely within the flood risk zone (predominantly zone 2); however, this is an urban brownfield site considered suitable for redevelopment and a change of use to housing, subject to confirmation of the potential to avoid flood risk through design measures, e.g. non-residential uses on the ground floor.

5.99 On balance, all four HELAA potentially suitable sites are broadly supported to the extent that allocation can reasonably be held constant across the reasonable spatial strategy alternatives, recalling that Winnersh is broadly suited to growth as a tier 1 settlement in the settlement hierarchy.

5.100 With regards to the one 'HELAA unsuitable' site (5WI005), which is found to the southwest of Winnersh is available for employment, but judged as unsuitable as it is located within the flood zone of the River Loddon.

5.101 In **conclusion**, allocation of four HELAA potentially suitable sites to deliver 270 homes is the only reasonable option, i.e. this approach to allocation can be held constant across the reasonable spatial strategy alternatives.

South of the M4, west of Wokingham



5.102 The HELAA identifies two sites as potentially suitable, namely 5WI009 and 5WI014:

- 5WI009 - would involve a modest extension to the Emmbrook neighbourhood of Wokingham and would be bounded to the north west by the Northern Distributor Road (see Figure 5.6). It is broadly supported to the extent that allocation can reasonably be held constant across the reasonable spatial strategy alternatives. It is in proximity to the motorway junction, and partially intersects the flood zone; however, it should prove possible to avoid/mitigate constraints, and it is noted that the site is within walking distance of Emmbrook local centre, Emmbrook School (secondary) and an employment area.

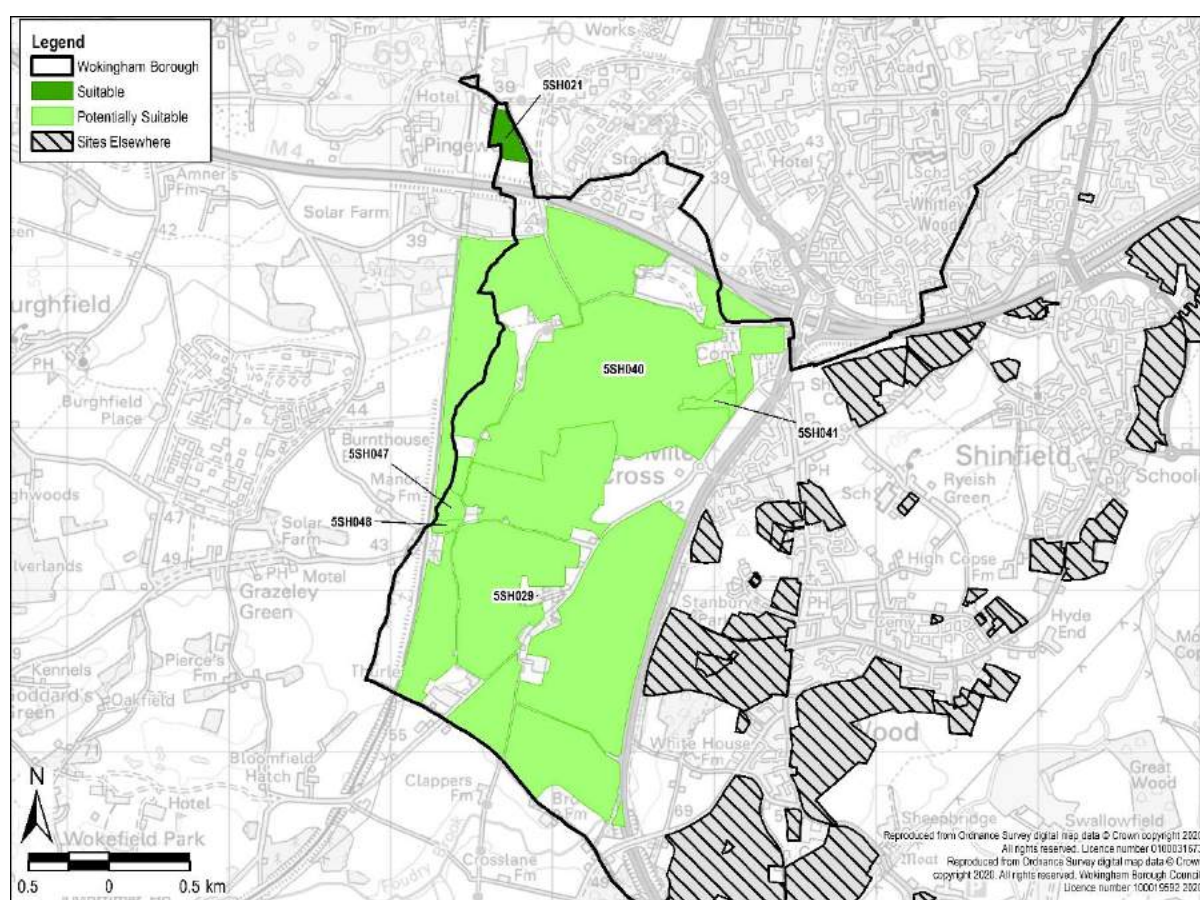
- 5WI014 - is, on balance, ruled out as not suitable for allocation for strategic reasons, specifically that Sindlesham is a tier 3 settlement not well suited to growth, and development could set a precedent for expansion of Sindlesham to the east towards Wokingham, thereby impacting on the landscape setting of the Sindlesham Conservation Area.

5.103 With regards to 'HELAA unsuitable' sites, a first port of call is the 1,000 home Hall Farm strategic site option, which has already been discussed above, and ruled-out.

5.104 Of the remaining HELAA unsuitable sites there are three that stand-out as larger sites (>10ha) namely 5WI007, WIR015 and 5AR014, which would be associated with the tier 3 village of Sindlesham; however, all three sites are poorly connected to Wokingham to the east / Winnersh to the north and, more broadly, there is a desire to retain a landscape gap between Wokingham and the motorway.

5.105 In **conclusion**, allocation of 5WI009 to deliver 35 homes is the only reasonable option, i.e. this approach to allocation can be held constant across the reasonable spatial strategy alternatives.

South of the M4, west of the A33

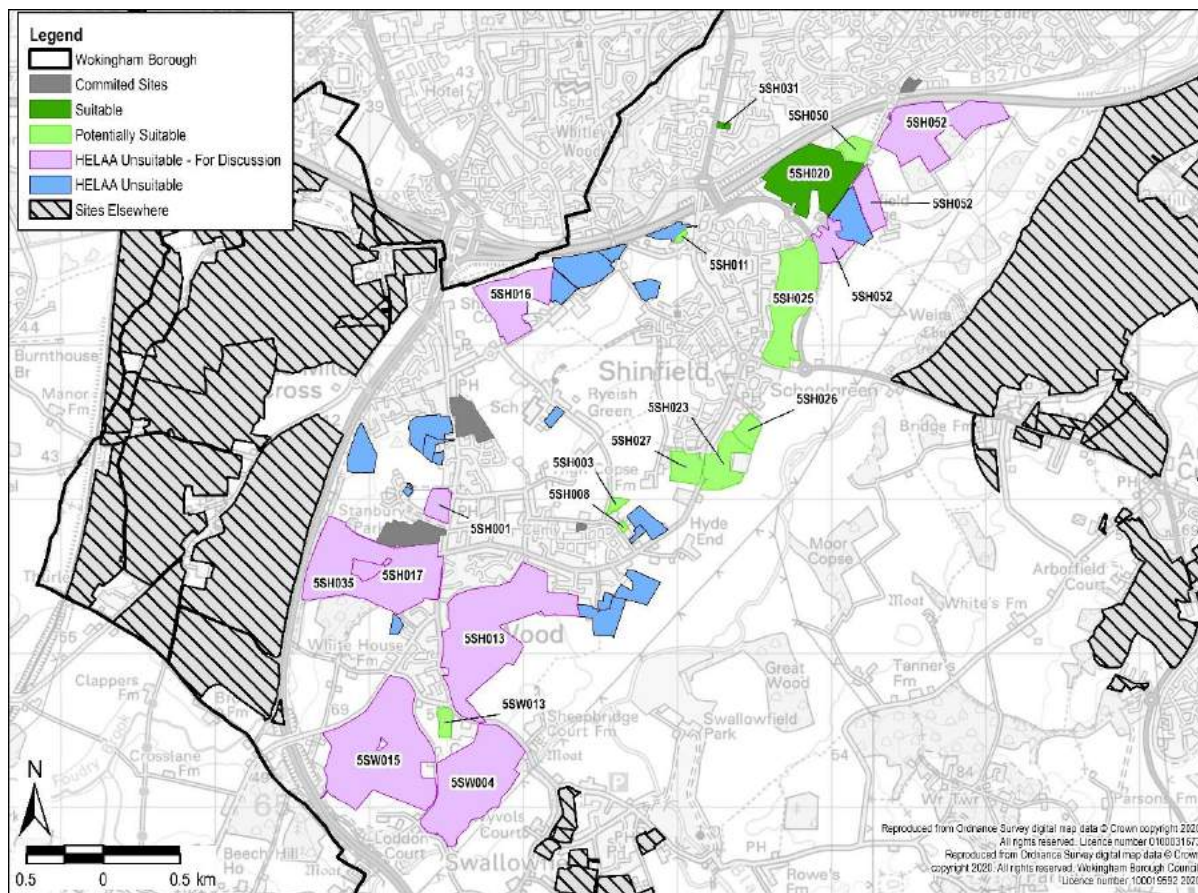


5.106 The HELAA identifies one site as suitable and five sites as potentially suitable. The HELAA suitable site (5SH021) is suitable for employment only, noting that the site falls entirely within the flood risk zone (mostly zone 3) and is allocated for employment/commercial uses. The cluster of five HELAA potentially suitable sites would deliver Grazeley garden town, which has already been discussed above, with the conclusion reached that it must be explored as a variable across the reasonable spatial strategy alternatives.

5.107 In **conclusion**, there is a need to explore the approach to allocation further as a variable across the reasonable spatial strategy alternatives, and specifically explore the following **options**:

- 1) Nil allocations; and
- 2) Allocation of Grazeley (see discussion of precise figure below).

South of the M4, east of the A33



5.108 The HELAA identifies two sites as suitable, namely 5SH020 and 5SH031. The former is suitable for employment only, comprising part of the Thames Valley Science Park. The latter is suitable for housing and broadly supported to the extent that allocation can reasonably be held constant across the reasonable spatial strategy alternatives.

5.109 Additionally, the HELAA identifies nine sites as potentially suitable, including seven as potentially suitable for housing. Of these seven sites:

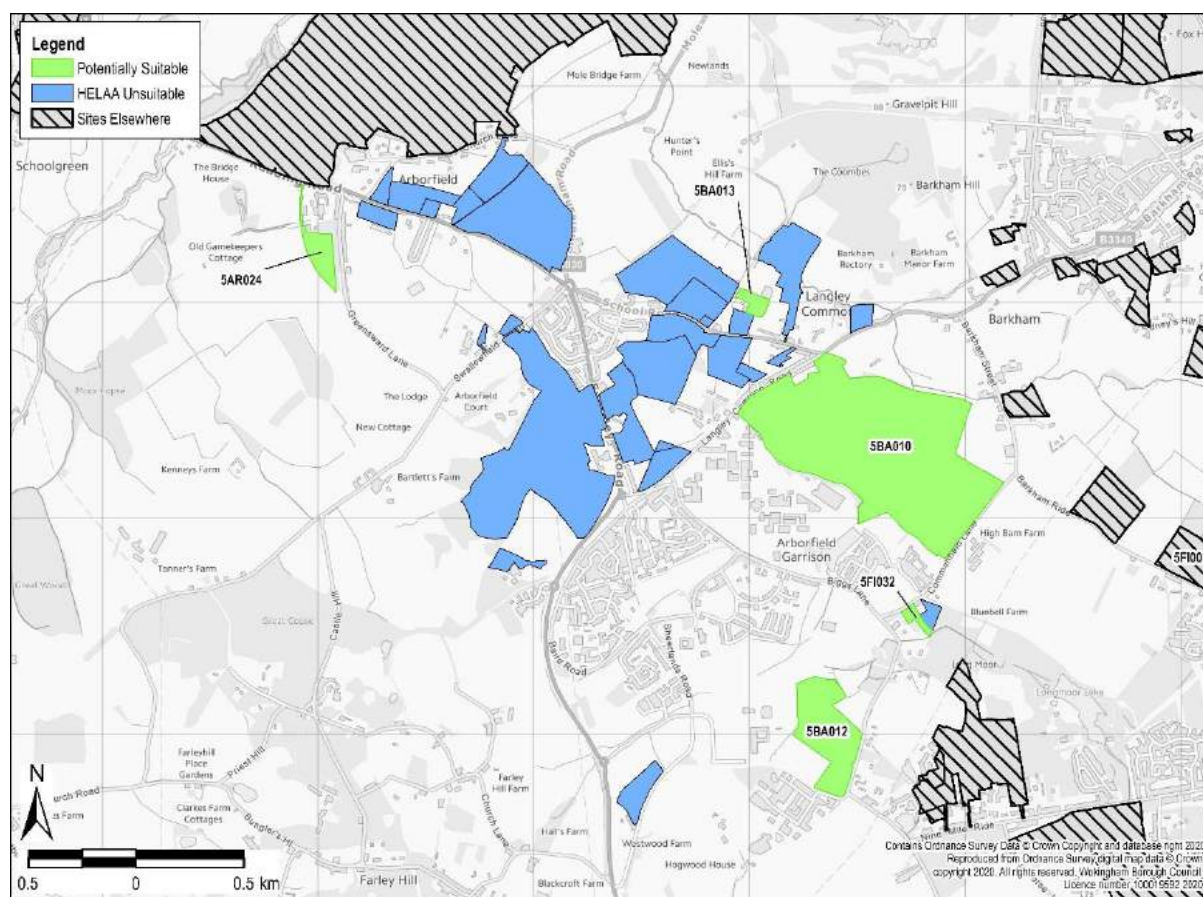
- one site stands-out as broadly supported, to the extent that allocation can reasonably be held constant across the reasonable spatial strategy alternatives, namely 5SH011, which is a very small site at the northern extent of the SDL;
- five sites warrant further examination as a 'variable' across the reasonable spatial strategy alternatives, namely 5SH003, 5SH008, 5SH023, 5SH026 and 5SH027, which are within the SDL and, more specifically, would extend the built form south of Spencers Wood and (more significantly) south of Shinfield; and
- one large site (5SH025; Land South of Cutbush Lane; 13.6 ha) is partly within the settlement boundary (northern part) and partly outside of the settlement boundary (southern part). The northern part is expected to come forward as part of the SDL, and indeed is counted by the Council as a commitment at the current time; however, the Council considers the southern part to be unsuitable for allocation, to the extent that it can reasonably be excluded from the reasonable spatial strategy alternatives. Whilst development of the site as a whole (i.e. both northern and southern parts) would complete the eastwards expansion of Shinfield as far as the new Eastern Relief Road and the flood plain, and would benefit from proximity to the expanding Thames Valley Science Park, development of the southern part of the site would be contrary to the South of the M4 Masterplan SPD (2011) and the Shinfield Neighbourhood Plan (2017). Policy 1 of the Neighbourhood Plan notably states: *“development adjacent to the Development Limits will only be supported where the benefits of the development outweigh its adverse impacts.”*
- We think the northern half is suitable from a HELAA perspective and the southern half unsuitable – hence the overall potentially suitable rating. We’ve not allocated the northern half in the new plan but have continued to include it in the settlement boundary and it is counted in commitments.

5.110 With regards to 'HELAA unsuitable' sites, it is considered reasonable to focus on those larger sites that are well connected to Spencers Wood, namely 5SH001/17/35 to the west and 5SH013 to the southeast. There is a strategic argument in favour of growth here, as this is a relatively well connected and well contained (between the River Loddon and M4 / A33) part of the Borough and an expanded Spencers Wood could compliment (e.g. through helping to 'anchor') the Shinfield (South of the M4) SDL. Expansion of the South of the M4 (Shinfield Parish) SDL to the west / southwest is considered to be a reasonable option for SDL expansion, although only under a scenario whereby there is not strategic growth nearby to the west of the A33, namely at Grazeley (discussed above).

5.111 In **conclusion**, there is a need to explore the approach to allocation further as a variable across the reasonable spatial strategy alternatives, and specifically explore the following **options**:

- 1) 15 homes at 5SH011 and 5SH031;
- 2) 211 homes at all of the HELAA suitable and potentially suitable sites *other than* 5SH025; and
- 3) 976 homes through additional strategic expansion of the SDL (Spencers Wood).

Arborfield area



5.112 The HELAA identifies five sites as potentially suitable; however, only two are potentially suitable *for housing*:

- 5BA012 - is a logical extension to the SDL and is subject to limited constraint, hence allocation is broadly supported to the extent that it can reasonably be held constant across the reasonable spatial strategy alternatives.
- 5BA010 - is the Barkham Square strategic site option, which has already been discussed above. Allocation is certainly an option for the Local Plan, as has been discussed above; however, there is also a need to consider the option of non-allocation.

5.113 Remaining site options are smaller and associated with either Arborfield Cross or Arborfield; however, neither village is considered suitable for growth given proximity to the Arborfield SDL. More generally, from a landscape, heritage and green infrastructure perspective there is an argument for resisting growth within the broad landscape to the east of the River Loddon, stretching from the River Blackwater and the woodlands of Swallowfield Parish in the south to the woodlands west of Wokingham in the north.

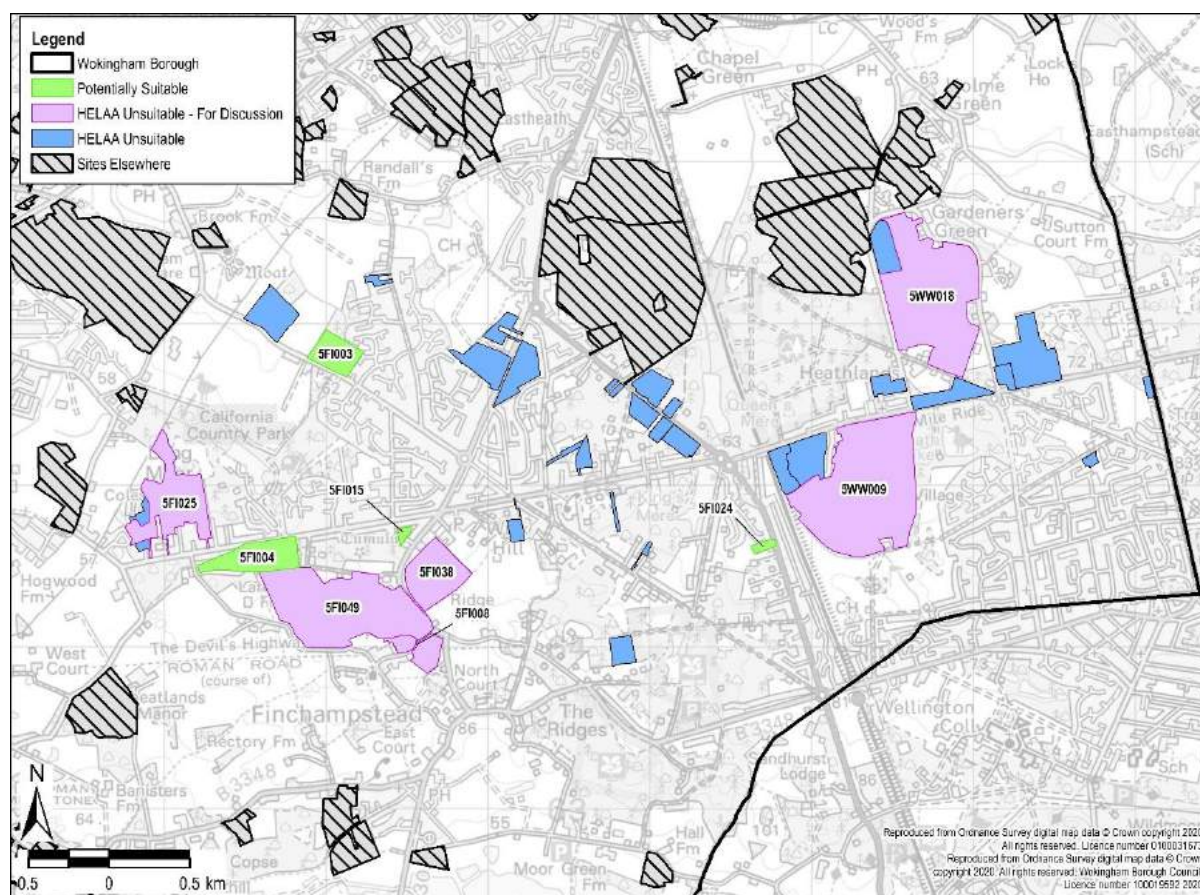
5.114 A final point to note is the emerging NDP for Arborfield and Barkham, which was recently subject to an Examination, and which will be put to referendum in February 2020. Policies in the NDP notably seek to deal with settlement separation and consideration of *“the distinctive character of the varied landscapes of the area and outstanding views.”* The value in maintaining physical and visual separation of the Arborfield SDL from other settlements, in particular Arborfield Cross, Barkham and Finchampstead North, is also a matter explored through the recent Landscape Character Assessment (2019).

5.115 In **conclusion**, there is a need to explore the approach to allocation further as a variable across the reasonable spatial strategy alternatives, and specifically explore the following **options**:

- 1) 140 homes at 5BA012; and
- 2) 640 homes at 5BA012 plus 5BA010 (Barkham Square).

N.B. the Council also supports allocation of 5BA013 (Woodlands Farm, Wood Lane) for 15 Gypsy and Traveller pitches.

Nine Mile Ride



5.116 The HELAA identifies four sites as potentially suitable, of which three are potentially for housing, namely 5F1003, 5F1004 and 5F1024. One of these sites, namely 5F1024, is broadly supported to the extent that allocation can reasonably be held constant across the reasonable spatial strategy alternatives. It is beyond easy walking distance of Finchampstead North local centre but considered suitable in terms of built form and subject to low constraint, and within reasonable distance to Crowthorne train station.

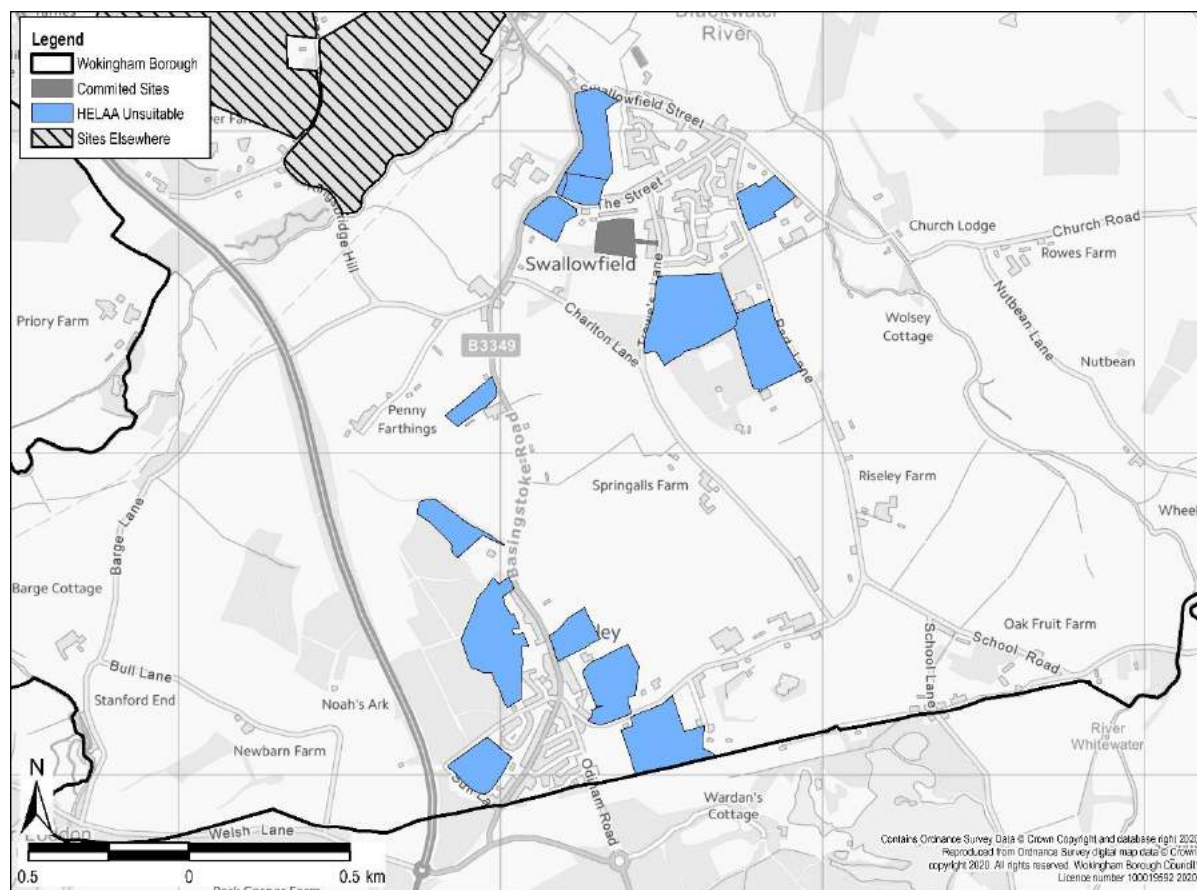
5.117 With regards to 5FI003 and 5FI004, both sites are considered by the Council to be unsuitable for allocation on balance, to the extent that they can reasonably be excluded from the reasonable spatial strategy alternatives. Both sites are closer to the local centre (although still beyond easy walking distance) but subject to constraints (5FI003 notably abuts Rooks Nest Wood Country Park, which is a designated SANG); also, more generally, this is a relatively poorly connected part of the Borough, associated with a high degree of car dependency. There will be the potential to consider these sites, and others, through the Finchampstead Parish NDP, with the Neighbourhood Area having been designated in March 2019.

5.118 With regards to 'HELAA unsuitable' sites, the following stand-out as larger sites (>10ha), but on balance can be ruled-out:

- Ravenswood Village (5WW009) – well screened by mature woodland and Crowthorne station is nearby, as is a primary school; however, extensive flood risk is a constraint, as is the adjacent Heathlake SSSI.
- Heathlands Farm (5WW018) – includes some previously developed land, but again remote from services/facilities and would erode the separation between South Wokingham SDL and Nine Mile Ride.
- Land at Church Farm, Finchampstead (5FI008/049) – would erode settlement separation and potentially impact the setting of Finchampstead Church Conservation Area.
- Land North of Nine Mile Ride (5FI025) – a highly constrained area in biodiversity terms, given onsite and adjacent habitats, including adjacent Longmoor Bog SSSI.
- Land at Finchampstead Rd Wokingham (5FI038) – benefits from good proximity to Finchampstead North local centre, but poorly contained in landscape terms, and again would erode settlement separation.

5.119 In **conclusion**, allocation of 5FI024 to deliver 15 homes is the only reasonable option, i.e. this approach to allocation can be held constant across the reasonable spatial strategy alternatives. The Council also supports allocation of 5FI015 (Land to the rear of 166 Nine Mile Ride) for four Gypsy and Traveller pitches.

Swallowfield and Riseley

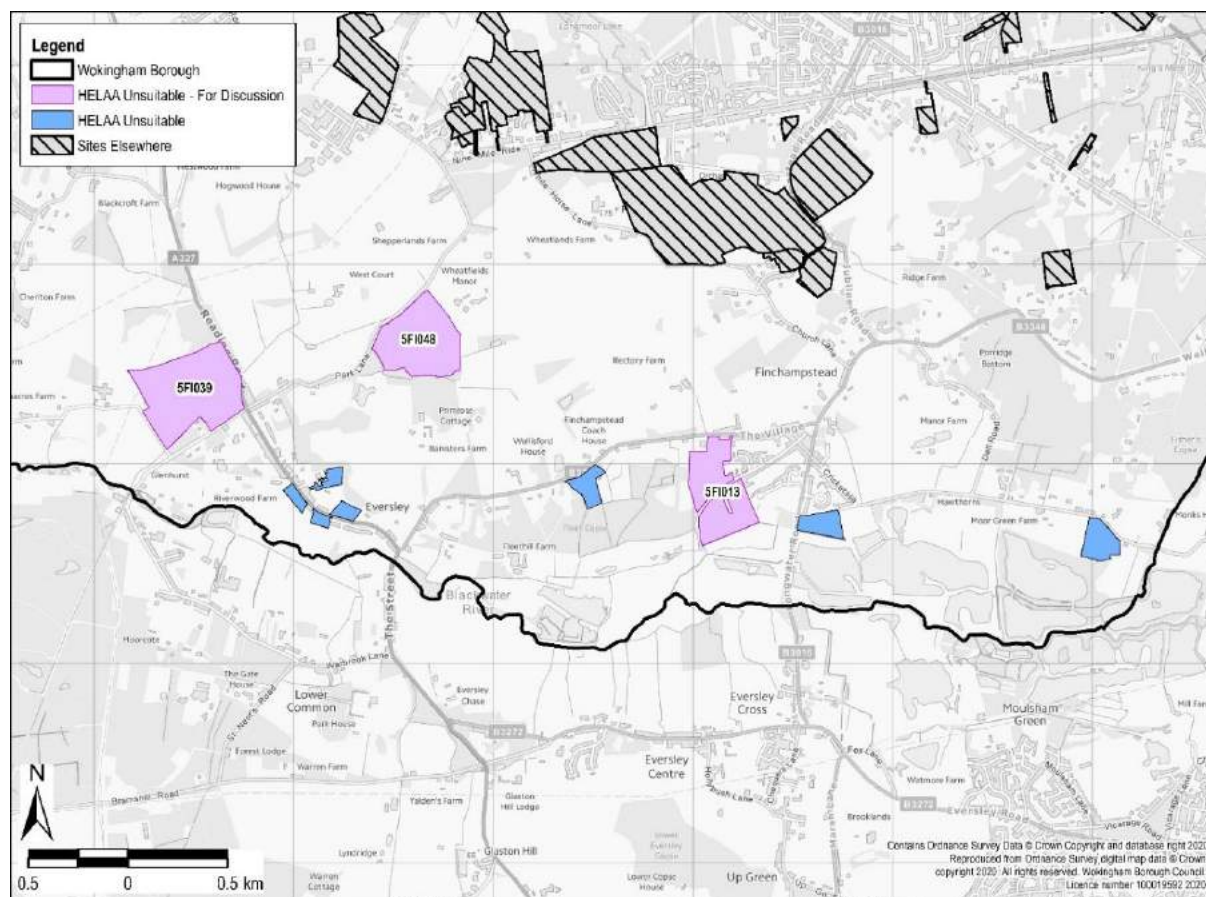


5.120 The HELAA does not identify any sites as either suitable or potentially suitable at either village.

5.121 With regards to HELAA unsuitable sites, the figure above shows there to be several at both villages; however, there is little or no strategic argument for allocation through the Local Plan, recognising the potential for the Parish Council to prepare a Neighbourhood Plan in order to allocate one or more sites to meet local housing needs. It is also noted that both villages have one currently committed housing site, with Land south of The Street and west of Trowes Lane, Swallowfield having received outline planning permission for 20 homes, and Land at Odiham Road, Riseley (in Hart District) having received permission for 83 homes.

5.122 In **conclusion**, nil allocations is the only reasonable option, i.e. this approach to (non) allocation can be held constant across the reasonable spatial strategy alternatives.

Finchampstead



5.123 The HELAA does not identify any sites as suitable or potentially suitable within the Finchampstead sub-area.

5.124 With regards to 'HELAA unsuitable' sites, the following stand-out as larger sites (>10ha), but on balance can be ruled-out:

- 5FI013 would extend Finchampstead to the west but is subject to biodiversity constraint, with the site intersecting Fleet Copse LWS; also, the site abuts the flood risk zone associated with the River Blackwater to the south, and there is a need to consider proximity to the Thames Basin Heaths SPA to the south, and resulting need to ensure SANG capacity.
- 5FI039 and 5FI048 would both involve a southern extension to the Arborfield SDL, which is not supported, including on the basis that land at the southern extent of the southern extent of the SDL is primarily set to deliver SANG.

5.125 As discussed above under Nine Mile Ride, Finchampstead Parish is in the early stages preparing an NDP, and will be well placed to allocate one or more sites if necessary, in order to meet local needs / objectives.

5.126 In **conclusion**, nil allocations is the only reasonable option, i.e. this approach to (non) allocation can be held constant across the reasonable spatial strategy alternatives.

Reasonable spatial strategy alternatives

Introduction

5.127 Having gone through a process (see Figure 5.1) involving consideration of strategic issues/options, site issues/options and sub-area specific issues/options, the final task is to draw together the understanding generated in order to arrive at a single set of reasonable spatial strategy alternatives (RAs).

5.128 In practice, this involves considering:

- those elements of the housing land supply that can reasonably be held **constant** across the RAs;
- those elements of the housing land supply that need to be a **variable** across the RAs and, in respect of each element of supply, what the options are that need to be tested; and then
- **concluding** on the RAs by exploring how options for 'variable' elements of the supply could be delivered in combination to deliver a reasonable total quantum of homes and, more generally, deliver a spatial strategy in line with the Local Plan objectives.

Elements of the supply to hold constant across the RAs

5.129 The sub-area specific sections above lead to a conclusion that the approach to allocation within ten of the sub-areas can reasonably be held constant across the RAs - see Table 5.2.

Table 5.2 Sub-areas to hold constant across the RAs

Sub-area	Constant quantum of homes to test
Woodley	0
Hurst	15
North of Wokingham	250
Wokingham urban area	101 (plus additional 100 homes at unconfirmed sites)
South of Wokingham	17 + 5 pitches
Winnersh	270
South of the M4, west of Wokingham	35
Nine Mile Ride	15 + 4 pitches
Swallowfield and Riseley	0
Finchampstead	0

5.130 Additional elements of supply that naturally need to be held constant across the RAs are as follows:

- **Completions** - 1,250 dwellings have already completed (i.e. built) since the start of the plan period
- **Commitments** - 9,107 dwellings are already committed, in that they are set to be delivered at a site that benefits either from planning permission (6,964 dwellings) or an existing allocation (2,143 dwellings)
- **Windfall** - 1,383 homes can be anticipated to come forward as 'windfall' sites, i.e. sites not allocated through the plan.

5.131 In total, the constant elements of supply will deliver 12,567 homes, or 698 dwellings per annum (dpa) over the 18 year plan period. Contrasting this figure to the LHN figures discussed above, namely 769 and 804 dpa, serves to highlight that the shortfall figure to be met by variable elements of supply is *at least* c.100 dpa (1,800 over the plan period) recognising the need for a supply 'buffer' (as discussed below).

Elements of the supply to vary across the RAs

5.132 The sub-area specific sections above lead to a conclusion that the approach to allocation within four of the sub-areas should reasonably be varied across the RAs - see Table 5.3. For three sub-areas there is a need to test two options, whilst for one sub-area there is a need to test three.

Table 5.3 Sub-areas to vary across the RAs

Sub-area	Varying quanta of homes to test			Notes
	Option 1	Option 2	Option 3	
A4 corridor	330	1830	-	Option 2 figure reflects homes in the plan period. Final number would be c.2,330 ¹⁷
South of the M4, west of the A33	0	3750	-	Option 2 figure reflects homes in the plan period. Final number would be c.15,000 ¹⁸
South of the M4, east of the A33	15	211	976	
Arborfield area	140 + 15 pitches	640 + 15 pitches	-	

N.B. to reiterate, the total number of homes achievable/suitable at the two stand-out larger sites, namely expansion to the East of Twyford/Ruscombe and Grazeley, is inherently uncertain, both within the plan period and in total, i.e. looking beyond the plan period. See further discussion within Appendix IV.

Concluding on the RAs

5.133 There are feasibly 24 combinations of the sub-area options presented in Table 5.3 (2x2x3x2); however, it is possible to rule out those combinations that would deliver too few or too many homes in total, recalling the housing quantum options discussed above. Specifically, it was determined appropriate to rule out spatial strategy options that would involve a total land supply (i.e. through both constants and variables):

- below 806 dpa (14,513 in total) – would risk failing to provide for LHN by more than what can be considered a modest amount, even if LHN is assumed to be 769 dpa, given the need for a supply ‘buffer’ of in the region of 5% to 15% to account for the likelihood of one or more sites not delivering as anticipated (e.g. one or more allocated sites might fail to achieve planning permission, or delivery of one or more permitted sites might be delayed such that some of the housing comes forward beyond the plan period).
- above 961 dpa (17,302 in total) - would provide for more than 15% above LHN, on the assumption that LHN is 769 dpa and there is a need for a supply buffer in the region of 10%. LHN plus 15% (after having accounted for a 10% supply buffer) is considered to be a reasonable high growth option to explore.

5.134 Furthermore, it is possible to rule out combinations of the sub-area options presented in Table 5.3 that would involve higher growth both west and east of the A33 (i.e. allocation of Grazeley alongside expansion of the Shinfield SDL). This reflects deliverability considerations (i.e. a concern that the local housing market might become saturated) and concerns regarding the impact of ongoing growth on infrastructure capacity.

5.135 Applying these rules led to the identification of nine reasonable combinations of the sub-area options. It follows that there are nine reasonable spatial strategy alternatives – see Table 5.4 and subsequent maps.

5.136 **These are the reasonable alternatives at the current time.** In order to understand ‘reasonableness’ there is a need to read this section as a whole; however, it is helpful to highlight one key characteristic, which is that the RAs reflect both the option of settlement expansion only (Options 1 to 7) and the option of delivering growth both through settlement expansion and delivery of a new garden town (Options 8 and 9).

¹⁷ The total capacity of the strategic expansion of Twyford/Ruscombe supported under Option 2 is in the region of 2,000 homes; however, the site promoters have stated that the scheme would deliver only in the region of 150 homes per year. It is assumed that the scheme would deliver for the final ten years of the plan period, and hence deliver 1,500 homes in the plan period.

¹⁸ The total capacity of the Grazeley scheme supported under Option 2 is in the region of 15,000 homes; however, the conservative assumption is that the scheme would deliver 375 homes per year for the final ten years of the plan period (N.B. delivery will be dependent on infrastructure and, in turn, available funding), and hence deliver 3,750 homes in the plan period.

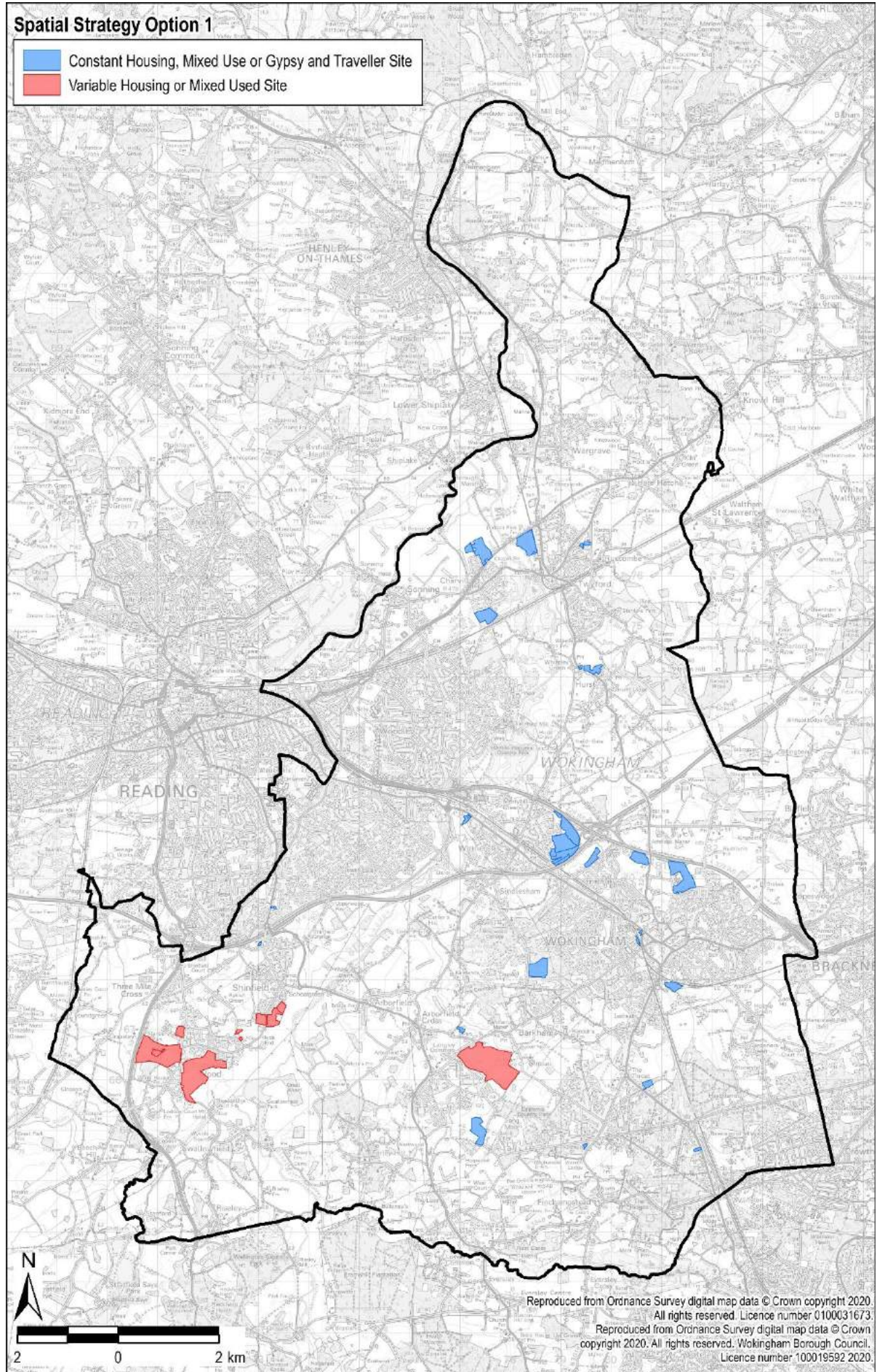
Table 5.4: The reasonable spatial strategy alternatives (with constants greyed-out)

	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8	Option 9
Completions	1250	1250	1250	1250	1250	1250	1250	1250	1250
Commitments	9107	9107	9107	9107	9107	9107	9107	9107	9107
Windfall	1383	1383	1383	1383	1383	1383	1383	1383	1383
Additional windfall within Wokingham TC	100	100	100	100	100	100	100	100	100
A4 corridor	330	1830	1830	1830	1830	1830	1830	330	330
Woodley	0	0	0	0	0	0	0	0	0
Hurst	15	15	15	15	15	15	15	15	15
North of Wokingham	250	250	250	250	250	250	250	250	250
Wokingham urban area	101	101	101	101	101	101	101	101	101
South of Wokingham	22	22	22	22	22	22	22	22	22
Winnersh	270	270	270	270	270	270	270	270	270
South of the M4, west of Wokingham	35	35	35	35	35	35	35	35	35
South of the M4, west of the A33	0	0	0	0	0	0	0	3750	3750
South of the M4, east of the A33	976	15	211	15	211	976	976	15	15
Arborfield area	655	155	155	655	655	155	655	155	655
Nine Mile Ride*	19	19	19	19	19	19	19	19	19
Swallowfield and Riseley	0	0	0	0	0	0	0	0	0
Finchampstead	0	0	0	0	0	0	0	0	0
Total homes*	14513	14552	14748	15052	15248	15513	16013	16802	17302
Total homes* p.a.	806	808	819	836	847	862	890	933	961
% above LHN (804)	0%	1%	2%	4%	5%	7%	11%	16%	20%
% above LHN (769)	5%	5%	7%	9%	10%	12%	16%	21%	25%

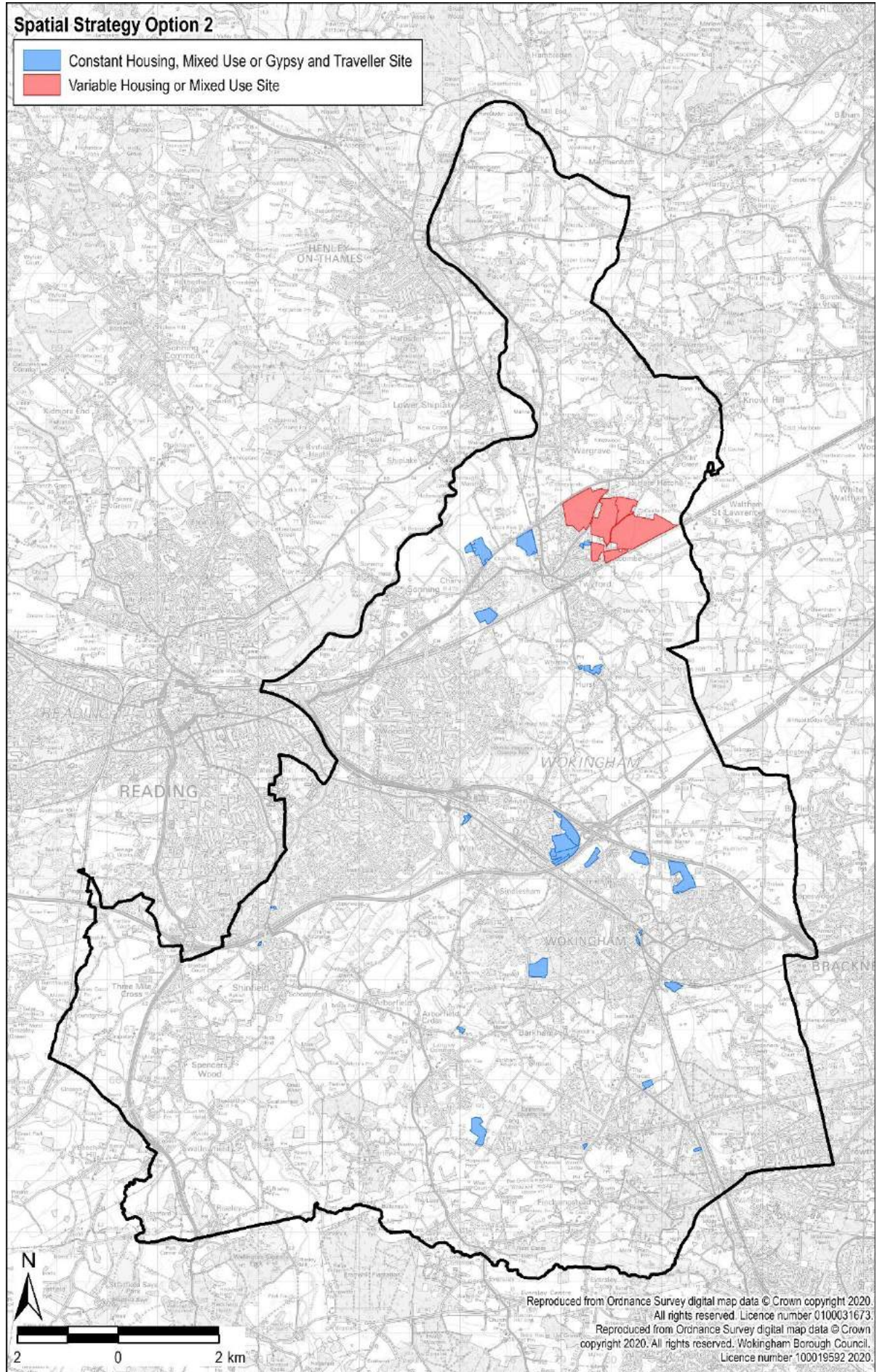
* Includes 24 Gypsy and Traveller pitches

Increasing growth →

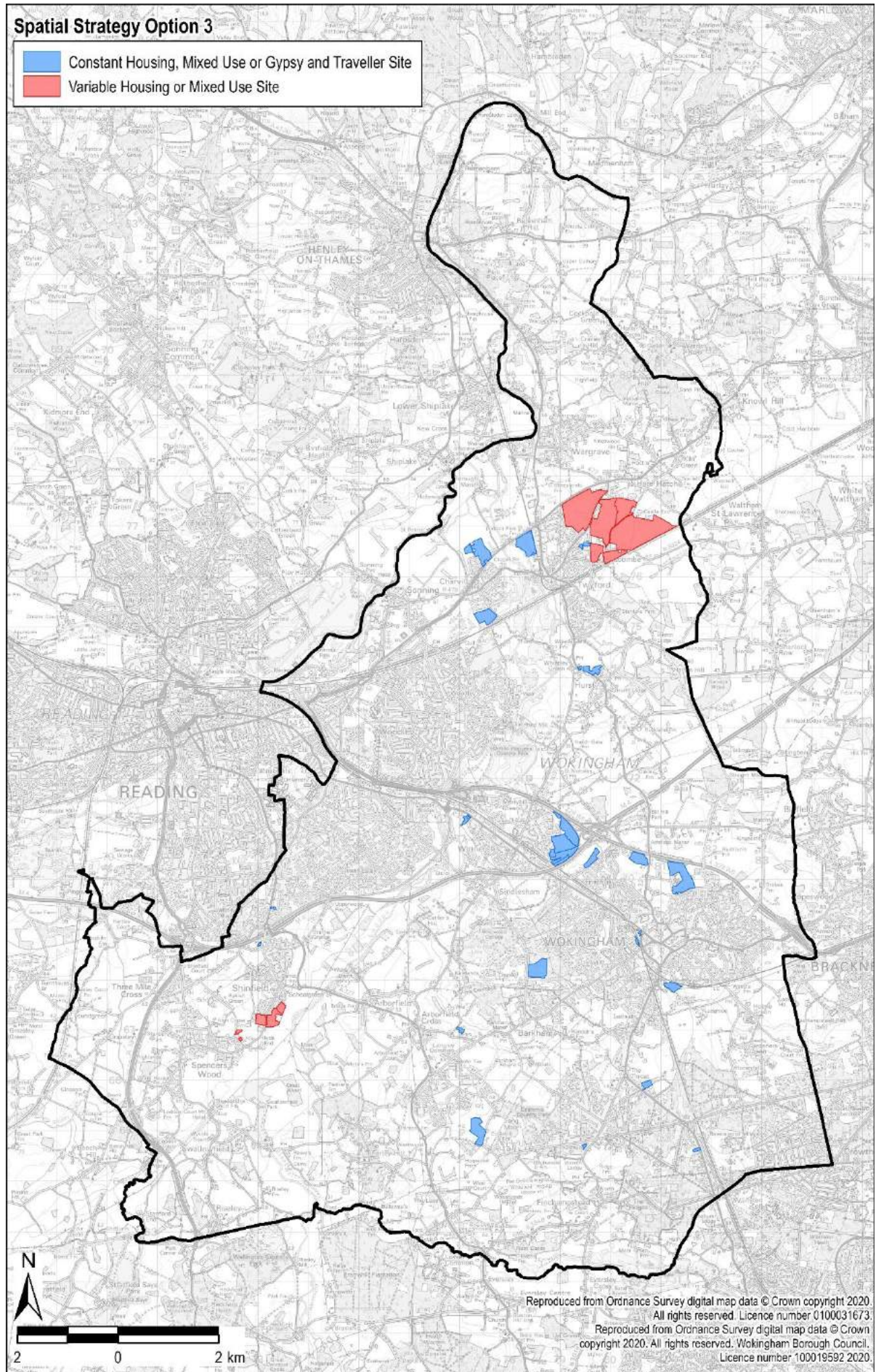
Spatial strategy option 1: Expansion of Shinfield Parish SDL plus Barkham Square



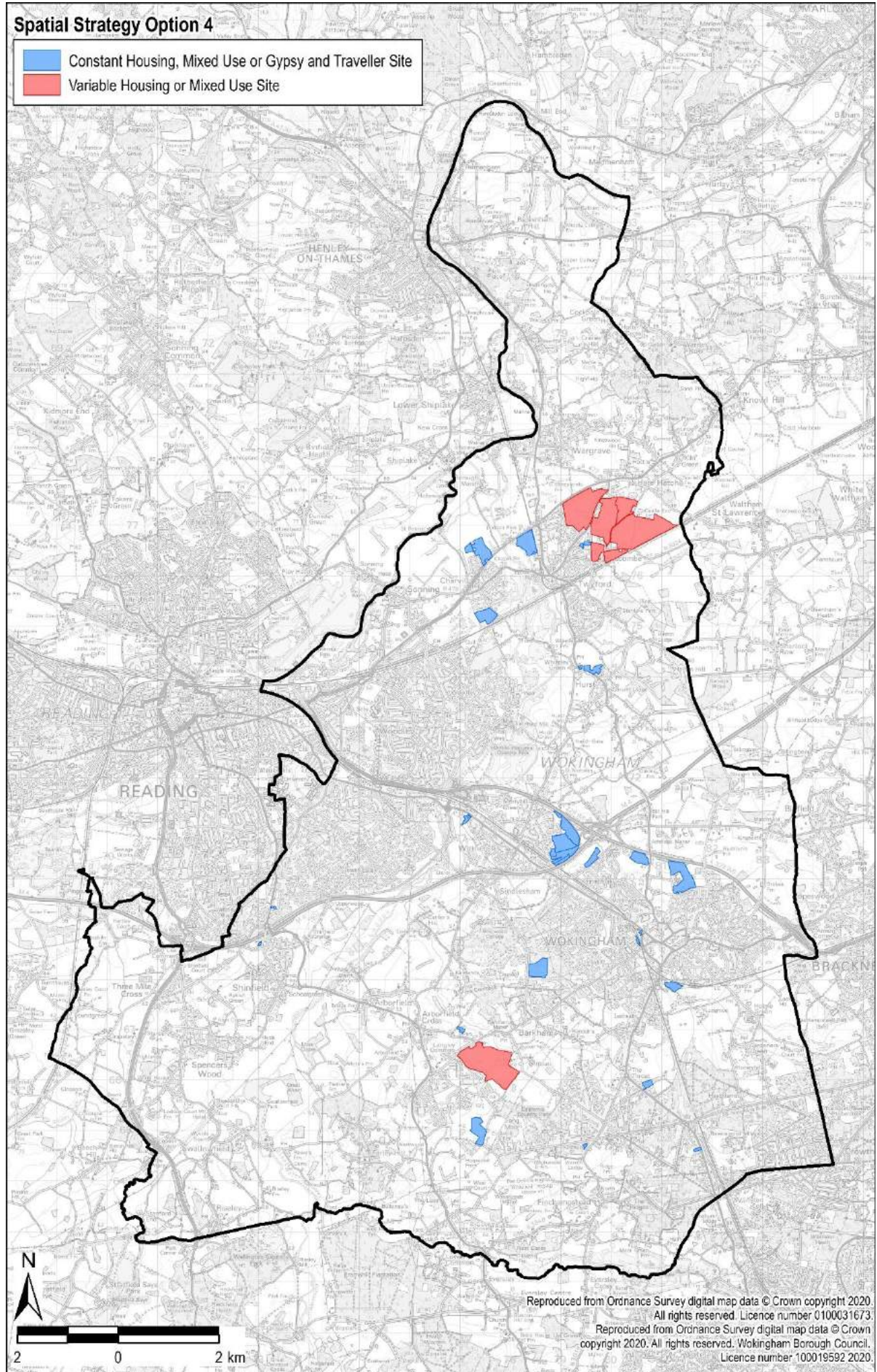
Spatial strategy option 2: East of Twyford/Ruscombe



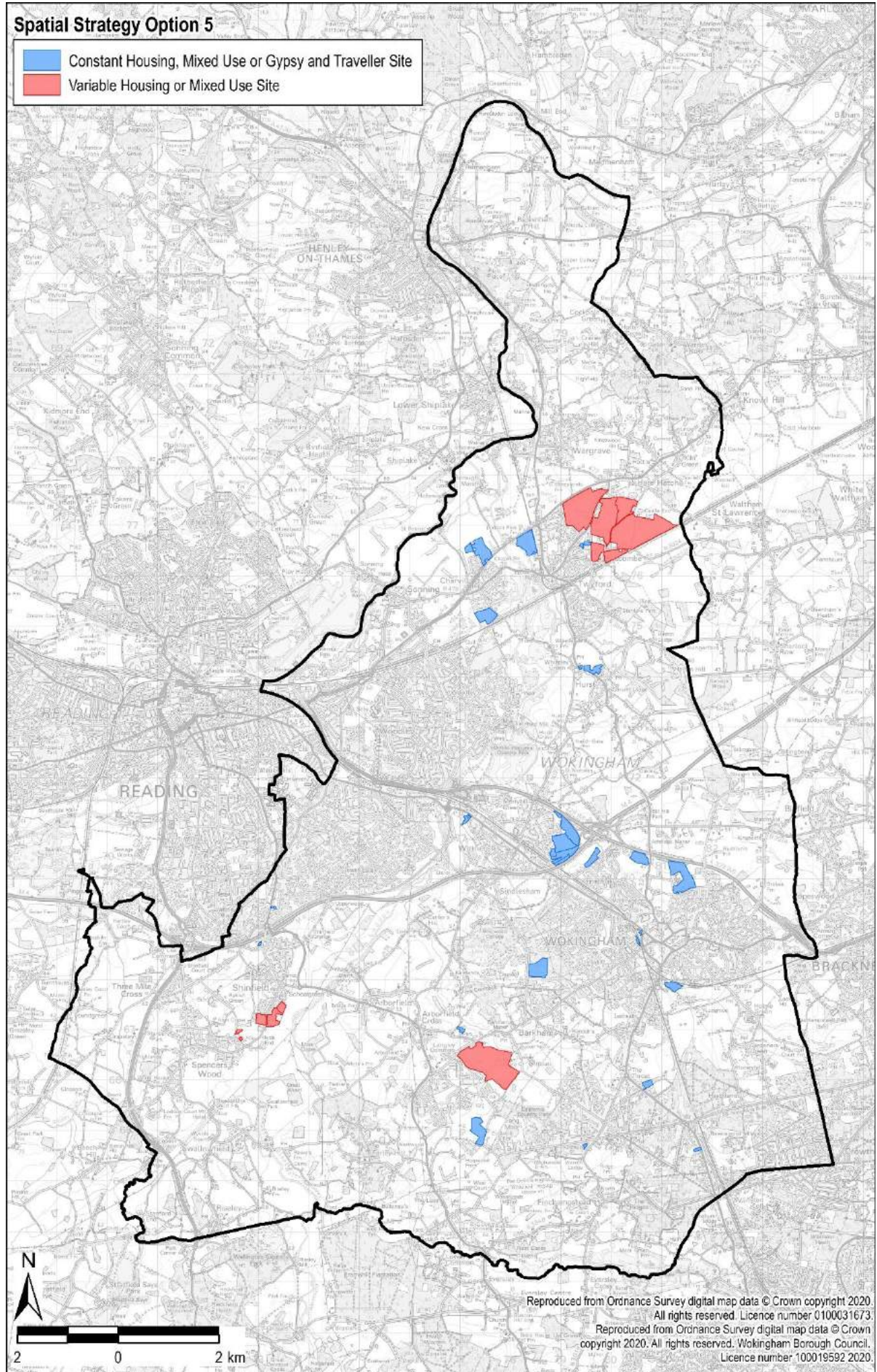
Spatial strategy option 3: East of Twyford/Ruscombe plus HELAA potentially suitable sites in Shinfield Parish



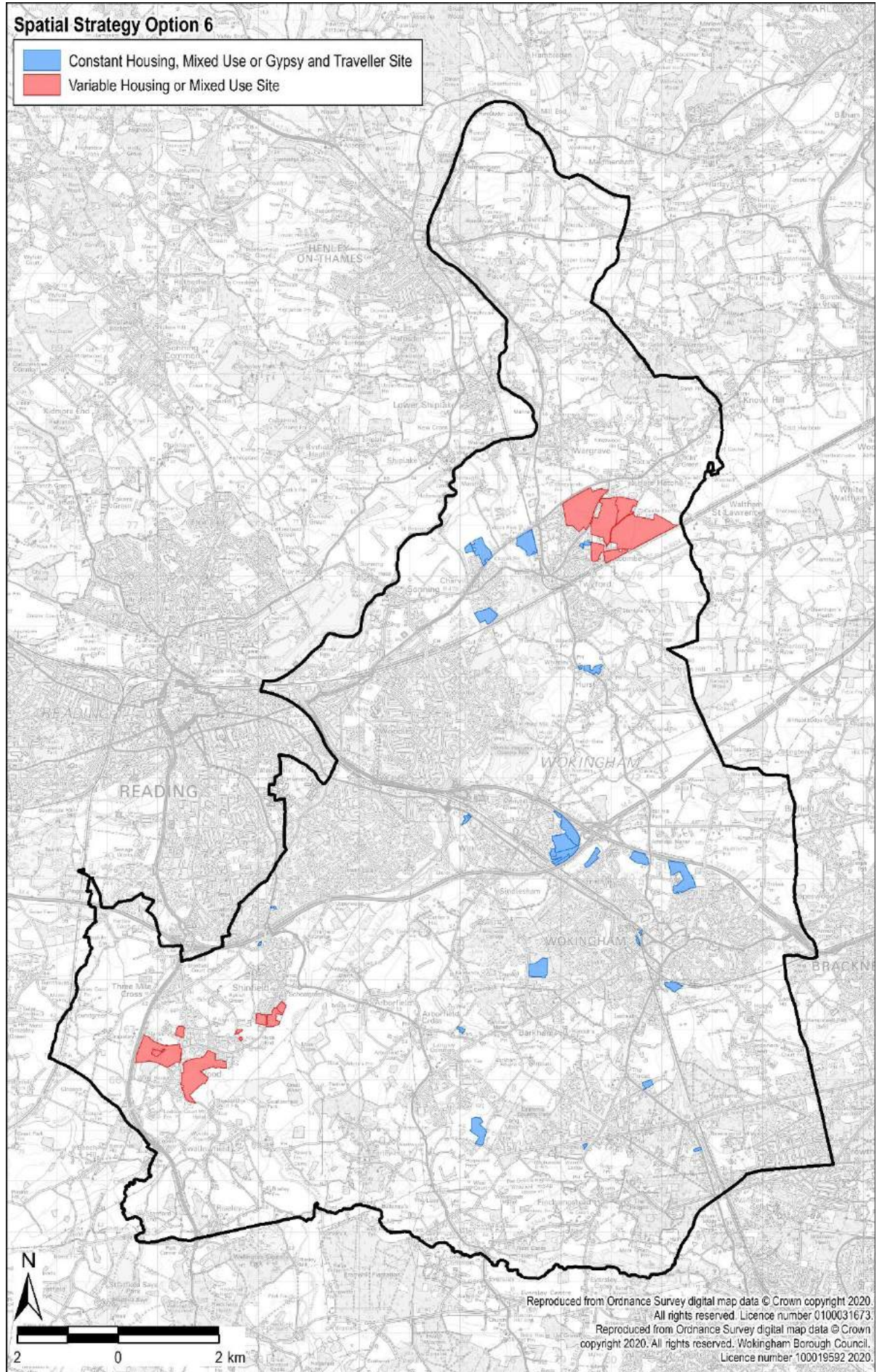
Spatial strategy option 4: East of Twyford/Ruscombe plus Barkham Square



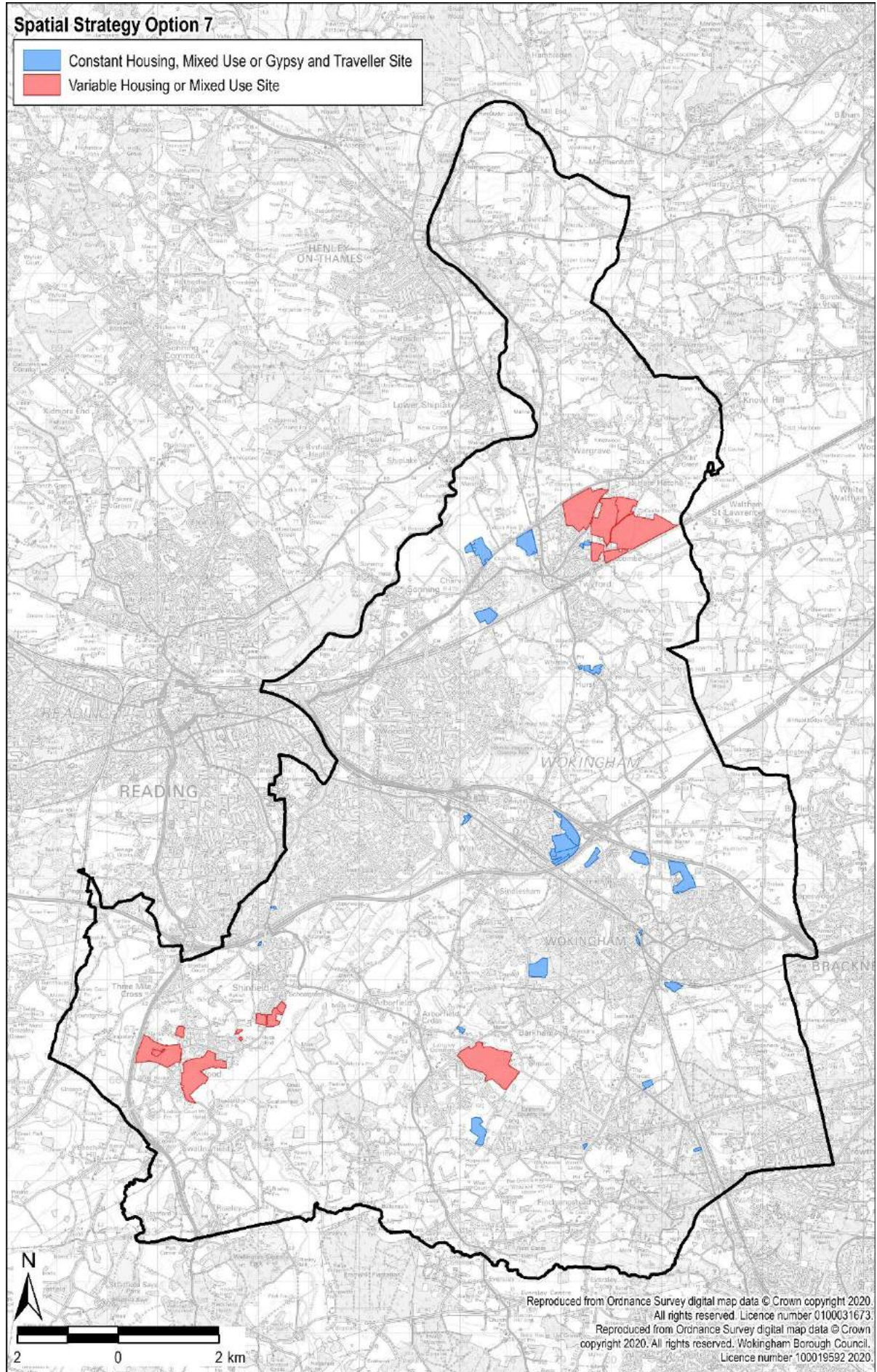
Spatial strategy option 5: East of Twyford/Ruscombe plus HELAA sites in Shinfield Parish plus Barkham Square



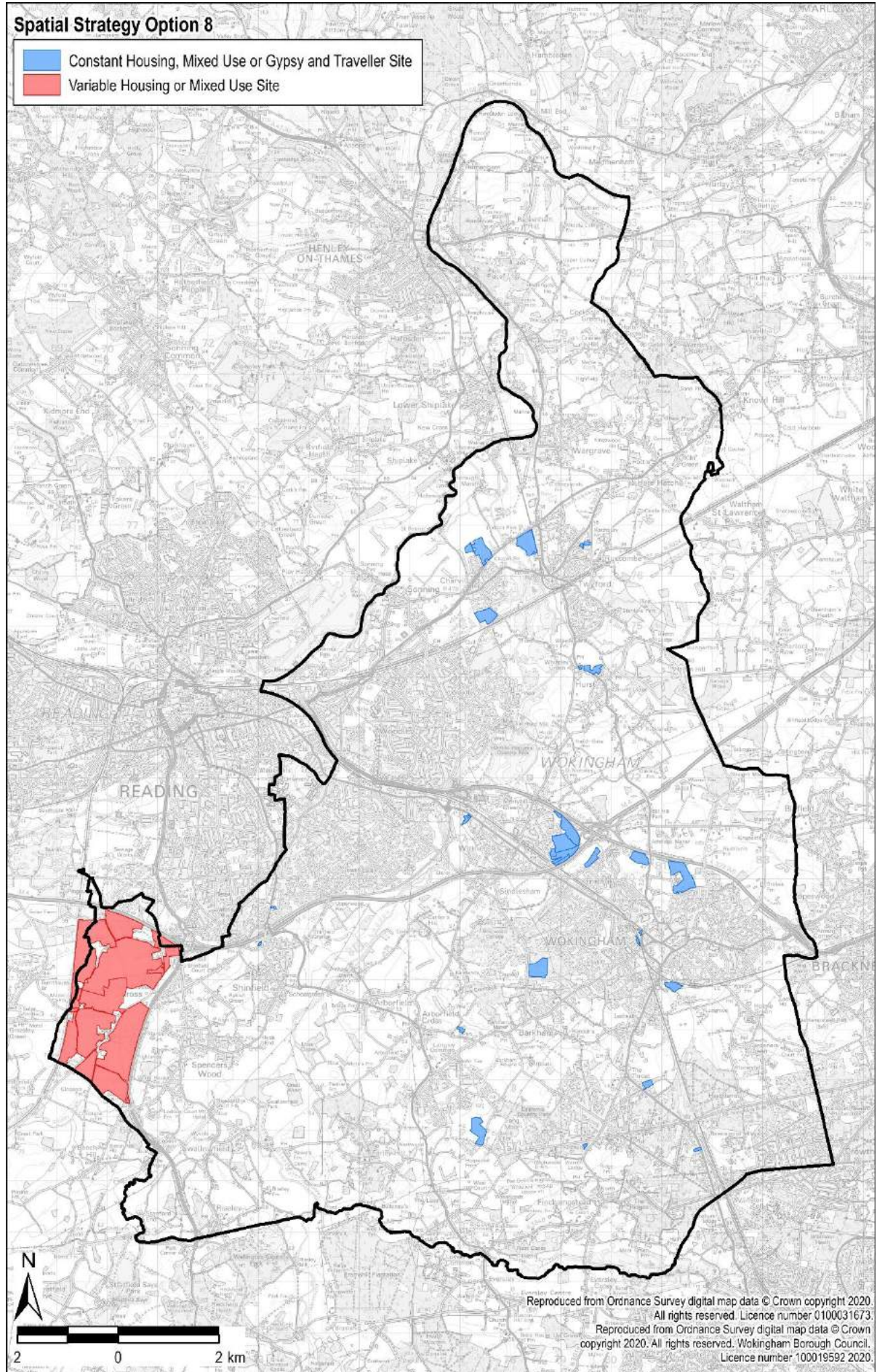
Spatial strategy option 6: East of Twyford/Ruscombe plus Shinfield Parish SDL expansion



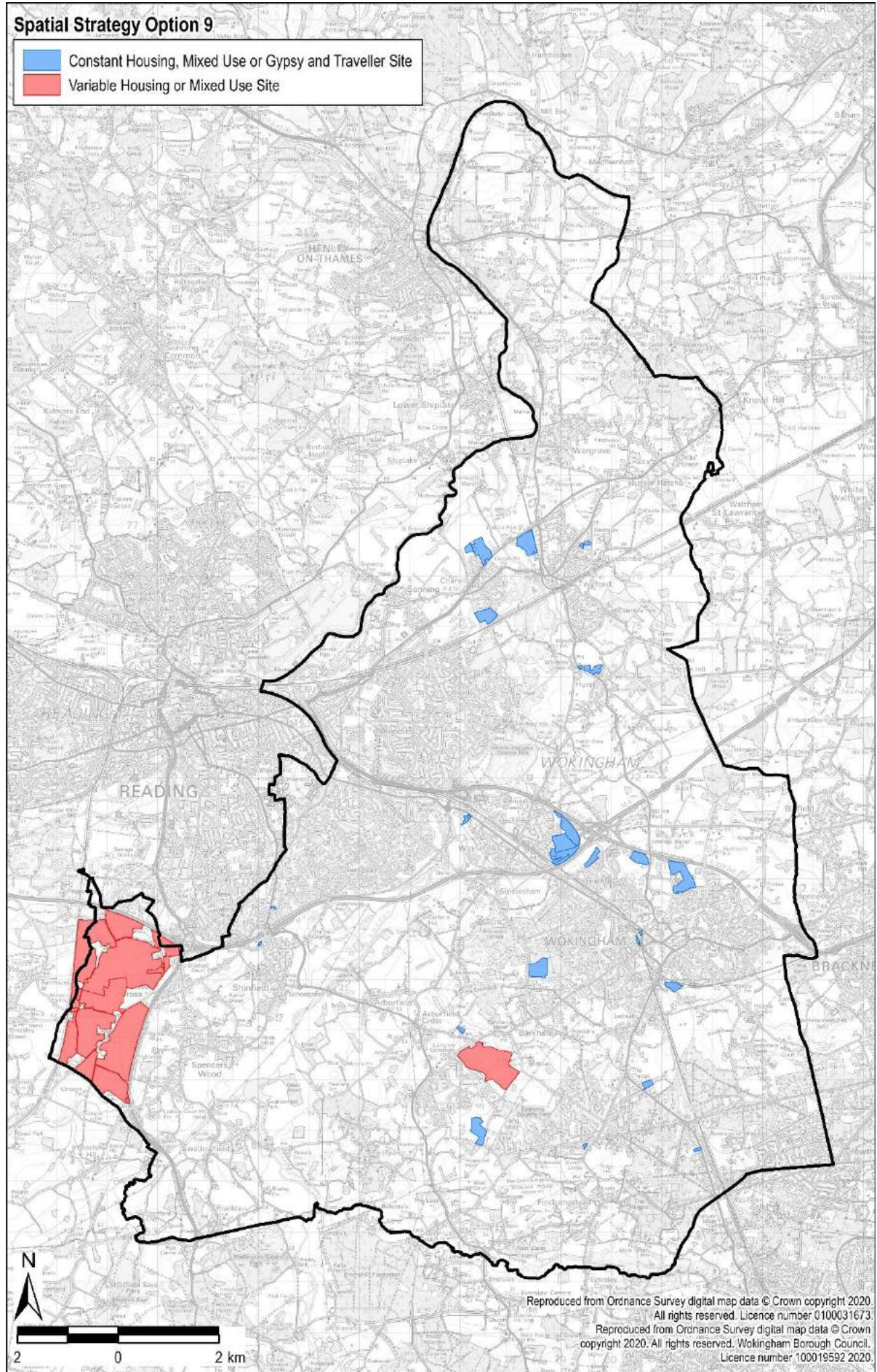
Spatial strategy option 7: East of Twyford/Ruscombe plus Shinfield Parish SDL expansion plus Barkham Square



Spatial strategy option 8: Grazeley



Spatial strategy option 9: Grazeley plus Barkham Square



6. Appraisal of the reasonable alternatives

Introduction

6.1 The aim of this section is to present appraisal findings in relation to the reasonable alternatives introduced above (also see Table 6.1). Detailed appraisal findings are presented in **Appendix VI**.

Table 6.1: The reasonable spatial strategy alternatives (summary)

Source of supply	Number of homes (inc. 24 Gypsy and Traveller pitches)								
	Opt 1	Opt 2	Opt 3	Opt 4	Opt 5	Opt 6	Opt 7	Opt 8	Opt 9
Commitments and windfall	11840	11840	11840	11840	11840	11840	11840	11840	11840
Allocations within A4 corridor	330	1830	1830	1830	1830	1830	1830	330	330
Allocations south of the M4, west of the A33	0	0	0	0	0	0	0	3750	3750
Allocations south of the M4, east of the A33	976	15	211	15	211	976	976	15	15
Allocations in Arborfield area	655	155	155	655	655	155	655	155	655
Allocations elsewhere	712	727	727	727	727	727	727	727	727
Total	14513	14552	14748	15052	15248	15513	16013	16802	17302
Total p.a.	806	808	819	836	847	862	890	933	961

6.2 Also, the reasonable alternatives can be described in shorthand as follows:

- Option 1 - Expansion of Shinfield Parish SDL (or “**SDL**”) plus Barkham Square (or “**Barkham**”)
- Option 2 - Expansion east of Twyford/Ruscombe in the A4 corridor (or “**A4**”)
- Option 3 - “**A4**” plus allocation of HELAA suitable sites in Shinfield Parish (or “**HELAA**”)
- Option 4 - “**A4**” plus “**Barkham**”
- Option 5 - “**A4**” plus “**HELAA**” plus “**Barkham**”
- Option 6 - “**A4**” plus “**SDL**”
- Option 7 - “**A4**” plus “**SDL**” plus “**Barkham**”
- Option 8 - **Grazeley**
- Option 9 - **Grazeley** plus “**Barkham**”

6.3 Finally, it is helpful to highlight the distinction between Options 1 to 7, which would involve a spatial strategy involving only the expansion of existing settlements / SDLs, and Options 8 and 9 which would involve a focus on a new garden town at Grazeley.

Appraisal findings

6.4 The table below presents summary appraisal findings in relation to the alternatives introduced above. Detailed appraisal methodology is explained in Appendix VI, but in summary:

Within each row of the table (i.e. for each of the topics that comprise the 'backbone' of the SA framework) the columns to the right hand side seek to both A) rank the alternatives in order of relative performance (where 1 is best performing); and B) categorise the performance of each option in terms of 'significant effects', with **red** is used to denote a predicted significant negative and **green** a significant positive.

Table 6.2: Summary alternatives appraisal findings

	Categorisation of significant effects and rank of preference								
	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8	Option 9
	M4 SDL L Barkham	A4	A4 M4 SDL L	A4 Barkham	A4 M4 SDL L Barkham	A4 M4 SDL H	A4 M4 SDL H Barkham	Grazeley	Grazeley Barkham
Accessibility	6	2	5	5	5	3	4	★1	3
Air and wider env quality	2	★1	★1	★1	★1	★1	★1	2	2
Biodiversity	2	2	3	2	3	4	4	★1	★1
Climate change adaptation	2	★1	2	★1	2	2	2	3	3
Climate change mitigation	4	2	3	3	3	3	3	★1	2
Communities	3	3	3	3	3	3	3	★1	2
Economy	2	2	2	2	2	2	2	★1	2
Historic environment	2	3	3	4	4	3	4	★1	2
Housing	8	7	6	5	4	3	2	2	★1
Land, soils and natural resources	★1	2	3	2	3	4	4	★1	★1
Landscape	=	=	=	=	=	=	=	=	=
Transportation	4	★1	2	3	3	2	3	★1	4
Water	?	?	?	?	?	?	?	?	?

Summary discussion

A headline conclusion is that Option 8 stands out as performing well in terms of a number of topics, both in relative and in absolute terms. However, it does not necessarily follow that Option 8 is best or 'most sustainable' overall, noting that it performs less well in terms of certain objectives, most notably flood risk, and noting that the topics are not assigned any particular weight / degree of importance.

Having made this initial point, the following bullet points present summary conclusions for each of the sustainability topics in turn:

- **Accessibility** – Option 2 and (in particular) Option 8 perform well as there would be a focus of growth at large-scale strategic sites, namely East of Twyford/Ruscombe and Grazeley respectively, hence there would be excellent potential to deliver community infrastructure alongside new housing. Option 1 performs poorly as this would essentially represent a dispersal strategy, although there would be a focus on SDL expansion which could potentially be supportive of community infrastructure delivery / ensuring good access.
- **Air and wider environmental quality** – Options involving strategic expansion to the east of Twyford/Ruscombe (Options 2 to 7) perform well as the assumption is that any such scheme would deliver a new relief road (or, at least, partial relief road) to the benefit of the town centre air quality management area (AQMA). However, it is not possible to conclude the likelihood of significant positive effects as spatial strategy options would also involve a relatively high growth strategy at Charvil, which could lead to increased car movements through the Twyford AQMA.
- **Biodiversity** – Options involving expansion of the South of the M4 (Shinfield Parish) SDL are judged to perform relatively poorly; however, there is considerable uncertainty, and this conclusion may be somewhat marginal. There may be the potential to achieve an overall biodiversity net gain at the Wokingham scale (or, more importantly, at functional landscape scales); however, there is no certainty at this stage ahead of detailed site specific proposals (which should ideally reflect established strategic priorities). There may be a particular opportunity to deliver targeted strategic green infrastructure at larger sites, e.g. Grazeley.
- **Climate change adaptation** – there are a number of sites - both sites that are a constant across the spatial strategy alternatives and those that are a variable - that intersect or abut a fluvial flood risk zone and/or are affected by extensive surface water flood risk, hence it is appropriate to 'flag' a risk of significant negative effects under all alternatives. However, it is recognised that there will be good potential to avoid and mitigate risk through masterplanning and design measures, including delivery of sustainable drainage systems (SuDS). Options 8 and 9 give rise to a particular concern as Grazeley is associated with the valley of the Foudry Brook.
- **Climate change mitigation** – the appraisal under this topic heading focuses on the matter of minimising per capita greenhouse gas emissions from the built environment, on the basis that emissions from transport are more appropriately considered separately under the 'transport' heading. The appraisal findings reflect an assumption that a focus of growth through large scale strategic schemes can enable delivery of low carbon infrastructure and/or achievement of standards of sustainable design and construction that exceed building regulations and, in turn, help to minimise per capita greenhouse gas emissions from the built environment.
- **Communities** – noting that the matter of accessibility to community infrastructure has already been discussed above, the discussion under this topic heading focuses on: safety considerations relating to AWE Burghfield; the need to minimise the negative impacts of housing growth on existing communities; and the need to support Gypsy and Traveller communities within the Borough. The appraisal serves to highlight spatial strategy options involving a focus of growth at Grazeley as performing relatively well, as there would be the potential to deliver a thriving new community and also avoid impacts to existing communities to a large extent. At the other end of the spectrum, there are concerns regarding impacts to existing communities associated with expansion to the east of Twyford/Ruscombe (in particular given impacts to Ruscombe) and expansion of the Shinfield Parish SDL (where committed growth needs time to 'bed in', including from an infrastructure capacity perspective).
- **Economy** - spatial strategy options involving a focus of growth at Grazeley stand-out as performing well, as the scheme would deliver targeted new employment floorspace as part of a mixed use new community; however, it is possible to conclude only a modest significant positive effect as there is understood to be limited need for new employment land locally. Other spatial strategy options would not facilitate delivery of significant new employment land, although all options would concentrate housing in locations close to existing and committed employment growth locations, e.g. Thames Valley Science Park at Shinfield.

- **Historic environment** - spatial strategy options involving strategic expansion to the east of Twyford/Ruscombe perform relatively poorly, as there would inevitably be impacts to the landscape setting of the Ruscombe Conservation Area, and there is also a degree of concern associated with Barkham Square due to the proximity of Arborfield Cross Conservation Area. There are also a range of other, potentially less significant, concerns associated with other growth locations, both those that are a variable across the alternatives and those that are a constant, hence it is appropriate to flag the risk of significant negative effects under all of the alternatives.
- **Housing** - whilst there are spatial distribution and site specific considerations, an overriding consideration is the need to allocate sites with a total yield that suitably exceeds ('buffers') the established (or, at least, agreed) LHN figure. As such, the reasonable spatial strategy alternatives are placed in an order of preference according to total housing quantum, with one exception. Specifically, Option 7 is judged to perform equally as well as Option 8, despite involving the allocation of sites with a lower total yield, as there would be a good mix of sites and, in turn, reduced risk of unanticipated delays to delivery.

With regards to effect significance, it is possible to conclude that Options 1 to 3 would lead to significant negative effects, on the assumption that LHN would be used as the basis for setting the Local Plan housing target and that the requirement would be for this target to be achieved via a steady trajectory over the plan period. This is on the basis that the total quantum of homes provided for through committed/allocated sites would *at best* exceed LHN by 7%, which is a small buffer to account for the risk of delays to delivery. Options 4 to 6, would also give rise to a risk that housing supply would fall below the required trajectory at some point. Options 7 and 8 are associated with a good degree of confidence regarding the potential to meet the required housing supply trajectory, although there remains a degree of risk. Finally, Option 9 performs very well, and it could potentially even be the case that there is capacity for Wokingham Borough to provide for unmet needs arising from elsewhere.

- **Land, soils and natural resources** – whilst there is uncertainty in the absence of consistent data on agricultural land quality, it is appropriate to highlight spatial strategy options involving expansion east of Twyford/Ruscombe as performing relatively poorly (the national low resolution/accuracy dataset shows the Borough's highest quality agricultural land to be concentrated in this area), and also to flag a degree of concern associated with spatial strategy options involving a focus of growth at Grazeley and Shinfield Parish SDL. These are the 'variable' sites that are known to be associated with best and most versatile agricultural land, although there are also a number of 'constant' sites that are also subject to this constraint, hence significant negative effects are predicted for all of the spatial strategy alternatives.
- **Landscape** - there is some reason to suggest that a strategic expansion to the east of Twyford/Ruscombe stands out as giving rise to particular concerns, particularly given the Green Belt constraint; however, there is no certainty given the available evidence / ahead of further detailed work to consider the possibility of establishing a robust Green Belt boundary (and also offset impacts through compensatory improvements to the environmental quality and accessibility of remaining Green Belt land, as per NPPF requirements).
- **Transportation** - spatial strategy options involving a focus of growth at either Grazeley or East of Twyford/Ruscombe perform relatively well. There is much uncertainty ahead of further detailed work; however, a focus of growth at either location would represent a significant opportunity to deliver growth in such a way that minimises need to travel and car dependency, and hence ultimately minimises per capita greenhouse gas emissions from transport and also traffic congestion. It is also appropriate to flag a concern associated with Option 9 as a high growth option, given traffic congestion issues ahead of detailed transport modelling.
- **Water** - the Water Cycle Study (WCS, 2019) serves to generate confidence in the ability to deliver any reasonable spatial strategy option without risking significant negative effects to the water environment, but does not enable confident differentiation between the sites that are a variable across the spatial strategy alternatives. Growth loading pressure on Wargrave WwTW and (in particular) Arborfield WwTW potentially leads to a degree of concern, and it is also noted that the Twyford Brook stands-out as the only watercourse in the Borough that is assigned 'poor' status under the Water Framework Directive; however, there will be good potential to deliver upgrades to WwTWs and also high quality SuDS.

7. Developing the preferred approach

Introduction

7.1 The aim of this Chapter is to present the response of Wokingham Borough Council to the alternatives appraisal or, in other words, the Council's reasons for developing the preferred approach in-light of the alternatives appraisal. The preferred option is Option 8, as explained below.

7.2 The following text has been provided by the Council:

The Council's reasons

7.3 The Council's current planning policies are contained in the Core Strategy (adopted 2010) and Managing Development Delivery (MDD) (adopted 2014) local plans. The strategy established by our existing local plans focus the majority of development in the four Strategic Development Locations (SDL) (North and South Wokingham, Arborfield Garrison and Shinfield/Spencers Wood/Three Mile Cross), with a lesser level of development supported within towns and villages subject to consideration of accessibility and impacts. This approach has enabled significant new infrastructure to be delivered alongside new homes so helping to mitigate impacts and allowing us opportunity to retain the character of our towns and villages through actions such as the retention of gardens. It is important for the Council to continue to support the delivery of these commitments.

7.4 The four SDLs will continue to make a significant contribution to meeting housing and other development needs going forward, however further land is required to help meet the longer term needs and to address a new government requirement that a proportion of new housing is delivered on small sites.

7.5 The Council's preferred approach to meeting further development needs is the creation of a garden town at Grazeley (Option 8). This is the most sustainable and suitable option to meet the majority of additional housing needs in the plan period to 2036 and beyond into the 2050s. It offers the opportunity to create new community, well supported by infrastructure so limiting the need to travel by car for everyday journeys, and with rail link to both Reading and Basingstoke, and dedicated public transport routes into Reading, providing a viable alternative to the car.

7.6 The creation of the garden town has been investigated jointly with West Berkshire District Council and Reading Borough Council. To achieve the upfront delivery of key infrastructure, a joint bid to the government's Housing Infrastructure Fund (HIF) has been made for £252m. A successful outcome will enable a wide package of infrastructure including measures designed to mitigate traffic effects.

7.7 The delivery of a garden town at Grazeley supplements the location of existing SDLs. It also provide economic benefits with the scale providing opportunity to plan employment as part of the new community.

7.8 The Council considers that the potential weakness of flood risk at Grazeley can be managed to avoid impacts to the proposed development and the land beyond. This will be addressed in detail through detailed masterplanning.

7.9 Whilst the creation of a garden town at Grazeley means that fewer new opportunities for new building are required elsewhere in the borough, the Council recognises that the four SDL provide significant existing opportunity for buying or renting housing across the majority of the borough. Notwithstanding, the Council preferred approach supports limited development across a range of settlements, including those in the northern parishes where there is no existing SDL.

7.10 In summary, taking both the positive and negative effects into account, the Council considers Option 8 to be, at present, the most sustainable basis for its spatial strategy for the emerging LPU. The other reasonable alternatives have various merits, however all are assessed as having less positive and more negative effects.

Part 2: What are the appraisal findings at this stage?

8. Introduction to Part 2

8.1 The aim of this part of the report is to present an appraisal of the Draft Local Plan Update (LPU).

8.2 This introductory section presents an overview of the Draft LPU and then discusses appraisal methodology.

Overview of the Draft LPU

8.3 The Draft LPU is structured as follows:

- 14 Spatial Strategy (SS) policies
- 64 development management policies grouped under seven thematic headings.

8.4 The proposed spatial strategy is introduced in the **Table 8.1**. N.B. the location of proposed allocations is presented according to town/parish, which differs to the approach taken to discussing sites in Part 1. Also, note that the extent of proposed allocations does not always align with the full extent of HELAA sites.

Table 8.1: The proposed spatial strategy

Town / Parish	Site ref.	Site name	Proposed use	Capacity
Barkham	5BA012	Reading FC Training Ground, Hogwood Park	Housing	140 homes
	5BA013	Woodlands Farm, Wood Lane	GRT	15 pitches
Charvil	5CV001	Land East of Park View Drive North	Housing	85 homes
	5CV002	Land West of Park Lane		75 homes
Finchampstead	5FI024	Jovike, Lower Wokingham Road	Housing	15 homes
	5FI001	Tintagel Farm, Sandhurst Road	GRT	5 pitches
	5FI015	Land to the rear of 166 Nine Mile Ride		4 pitches
Hurst	5HU002	Land adjacent to Whistley Green Cottage, Whistley Green	Housing	3 homes
	5HU030	Land north-west of Hogmoor Lane		12 homes
Ruscombe	5RU007	Land to the rear of 9-17 Northbury Lane	Housing	7 homes
	5RU008	Land between 39-53 New Road		13 homes
Shinfield	5SH011	Lane End House, Shinfield Road	Housing	5 homes
	5SH031	Rustlings, The Spring and Land to rear of Cushendall, Shinfield Road		10 homes
	5SH029/40/41/47/48	Grazeley garden town	15,000 (3,750 to 2036) homes plus employment (Wokingham and West Berks)	
	5SH020/50	Thames Valley Science Park expansion for 18,500 sqm floor space		
Twyford	5TW010/05/09	Land at Bridge Farm	Housing	150 homes
Winnersh	5WI008	Winnersh Plant Hire, Reading Road	Housing	20 homes
	5WI009	Land on North West Side of Old Forest Road		35 homes
	5WI004/06/10	Winnersh Farms		250 homes
Wokingham	5WK002	Ashridge Farm	Housing	150 homes
	5WK006	Land south of Gipsy Lane		17 homes
	5WK012	54-58 Reading Road		9 homes
	5WK029	Station Industrial Estate, Oxford Road		92 homes
	N/A	Land east of Toutley Depot		100 homes

Appraisal methodology

- 8.5 The appraisal identifies and evaluates ‘likely significant effects’ of the plan, as a whole, on the baseline situation in respect of the sustainability topics/objectives that comprise the SA framework (see Table 3.1).
- 8.6 Every effort is made to predict effects accurately; however, this is inherently challenging given the high level nature of the policies under consideration, and an understanding of the baseline (now and in the future under a ‘no plan’ scenario) that is inevitably limited. Given uncertainties there is a need to make assumptions, e.g. in relation to plan implementation and aspects of the baseline that might be impacted. Assumptions are made cautiously and explained within the text (with the aim to strike a balance between comprehensiveness and conciseness/ accessibility to the non-specialist). In many instances, given reasonable assumptions, it is not possible to predict ‘significant effects’, but it is nonetheless possible and helpful to comment on merits (or otherwise) of the Draft Local Plan in more general terms.
- 8.7 Finally, it is important to note that effects are predicted taking account of the criteria presented within Schedule 1 of the Environmental Assessment of Plans and Programmes Regulations (2004). So, for example, account is taken of the duration, frequency and reversibility of effects as far as possible. Cumulative effects are also considered, i.e. the potential for the LPU to impact on the baseline when implemented alongside other plans, programmes and projects that are ‘in the pipeline’. These effect ‘characteristics’ are described within the appraisal as appropriate.

Adding structure to the appraisal

- 8.8 Whilst the aim is essentially to present an appraisal of the Draft LPU ‘as a whole’, it is appropriate to also give consideration to individual elements of the plan in isolation. As such, each of the topic-specific appraisal narratives is broken-down under sub-headings – see Table 8.1.

Table 8.1: Structure of each topic-specific appraisal narrative

Sub-heading	Aims of the narrative
Commentary on the spatial strategy	Discuss the preferred spatial strategy option taking account of site specific proposals / development management policy.
Commentary on other policies	Discuss the generic/borough-wide development management policies.
Appraisal on the plan as a whole	Predict and evaluate significant effects in respect of the Draft Local Plan and make recommendations.

N.B. Specific policies are referred to only as necessary within the narratives below. It is not necessary to give systematic consideration to the merits of every plan policy in terms of every sustainability topic/objective.

A note on screening policies

- 8.9 Policy SS2 (Settlement Hierarchy and scale and location of development proposals) is not discussed as part of the appraisal, i.e. it is ‘screened-out’. The policy places settlements across the Borough into three tiers, taking into account the range of services and facilities and other factors including the functional relationship with the surrounding area, based on the finding of the Settlement Hierarchy Assessment (2018). The hierarchy provides a framework for considering the levels of new development to be directed through the development management process, and will help to set the context for decisions on planning applications; however, setting the hierarchy is an objective technical exercise more so than a policy exercise.
- 8.10 There is also limited or no potential to appraise Policies SS4 to SS7, which deal with each of the four existing SDLs in turn, essentially rolling forward the existing policy. The effect of the policies will not be to significantly alter the baseline situation, hence there is limited or no potential to predict effects (on the baseline).

9. Appraisal of the Draft LPU

Introduction

- 9.1 The aim of this chapter is to present an appraisal of the Draft LPU under the 13 SA topics, drawing on the issues and objectives established through scoping (see Table 3.1).

Accessibility

- 9.2 Sustainability objectives:

- Improve accessibility to services, amenities and facilities in particular by safe walking and cycling routes
- Raise educational attainment, skills and training opportunities

Commentary on the spatial strategy

- 9.3 A focus of growth at **Grazeley garden town** is supported as the scheme will benefit from economies of scale that lead to funds being made available to deliver community infrastructure. It is anticipated that a 15,000 home new settlement at Grazeley would deliver a new town centre, two secondary schools, seven primary schools, a health care hub and what the site promoters describe as “the largest park in south east England since the London Olympic Park”. This is over-and above the extensive ‘grey’ infrastructure that would be delivered as part of the scheme, which is discussed further below. The effect of delivering extensive new community infrastructure alongside new homes will be that new residents benefit from excellent ‘accessibility’ and also that additional pressure on existing facilities in the Borough, and in Reading, will be minimised. It is also fair to say that residents of any new settlement at Grazeley would have very good access to higher order community services and facilities in Reading, via high quality transport connections, as discussed below.

- 9.4 With regards to the **site-specific policy** for Grazeley garden town, the first point to note is that the Local Plan Update; Policy SS3 (Grazeley garden town) begins with the following statement:

“A new garden town that delivers a minimum of 15,000 dwellings (a minimum of 10,000 dwellings within Wokingham Borough and 5,000 dwellings within West Berkshire District) is allocated on the border of Wokingham Borough Council, West Berkshire District Council and Reading Borough, at Grazeley. The delivery of Grazeley garden town is subject to the support of timely and early delivery of commensurate levels of essential infrastructure, identified in the Housing Infrastructure Fund (HIF) Bid to accelerate delivery. The opportunity for this forward funding will continue to be jointly monitored and pursued...”

- 9.5 The policy goes on to commit to the preparation of a Masterplan and Infrastructure Delivery Plan SPD with a focus including:

“Structure the new community to create sociable, vibrant and walkable neighbourhoods around a vibrant town centre, and district and local centres. This includes access for all to a range of local employment opportunities and community services and facilities, including health/wellbeing, education, retail, culture, civic spaces, multi-functional open space, sports and leisure facilities that are well integrated and connected to public transport to support well-being and social cohesion.”

- 9.6 A range of further policy is proposed relating to community infrastructure provision at Grazeley. Perhaps most notably, Policy SS3 supports a comprehensive walking and cycling network to enhance permeability within the site and connect to existing Greenways network and National Cycle Network routes, to enable access to community infrastructure locally and within neighbouring settlements in the area (including Reading town centre).

- 9.7 With regards to the **wider spatial strategy**, the first point to note is the continued support for growth targeted at three of the four existing SDLs. Most notably, Policy SS5 (North Wokingham SDL) allocates two additional sites within the SDL which together will deliver 250 homes. Also, Policy SS6 (South of the M4 SDL) seeks to deliver a small additional site for 5 homes (Lane End House, Shinfield Road) and Policy SS7 (South Wokingham SDL) seeks to deliver a small additional site for 17 homes (Land south of Gypsy Lane). In each instance, these sites have been selected for allocation on the basis that delivery of additional homes in these locations can be accommodated by existing or committed infrastructure.

9.8 Finally, with regards to the remaining proposed allocations, namely the package of 18 allocations proposed by Policy H2 to deliver 940 homes in total (including 24 Gypsy and Traveller pitches), it is not clear that any will support delivery of significant new or upgraded community infrastructure, but none of the proposed sites stand-out as highly problematic. The following are three notable considerations:

- **Charvil** – a relatively high growth strategy is proposed, involving 85 homes on the northern edge of the village (Land East of Park View Drive North) and 75 homes at the southern edge of the village (Land West of Park Lane, Charvil), which would extend an existing committed site. Charvil is a tier three settlement in the settlement hierarchy, with a primary school and two secondary schools in good proximity; however, there are limited facilities in that part of the village to the north of the A4 (where there is only a community hall and recreation ground). The northern site would benefit from good access to a convenience store / post office immediately to the south of the A4, via a pedestrian crossing with central island, but would be over 800m from the primary school at the southern extent of the village (which is adjacent to the southern proposed allocation). Charvil also benefits from excellent access to the string of country parks associated with the River Loddon; however, access from the northern proposed allocation involves crossing the A4 at a location without a pedestrian crossing. It is **recommended** that further consideration be given to facilitating improved access to community and green infrastructure at Charvil.
- **Twyford** - Land at Bridge Farm is proposed to deliver 150 homes in a location that should prove to be within reasonable walking distance (under c.800m) of Twyford town centre to the south, on the assumption that it will be possible for pedestrians and cyclists to make use of the existing bridge over the railway. The site is also well located in terms of accessing a regular bus service to Reading town centre.
- **Winnersh** - Winnersh Farms is proposed to deliver 250 homes at the eastern extent of Winnersh in a location that is further (relative to the Twyford site discussed above) from the bulk of the district centre, but at a distance that should still prove walkable for many residents. Also, the site is within walking/cycling distance of Winnersh train station and Winnersh Triangle Business Park. However, this scheme would extend an existing area characterised by numerous residential roads, and so there will be a need to give careful consideration to ensuring direct and safe pedestrian and cycle travel.

Commentary on other policies

- 9.9 In terms of improving accessibility to services and facilities, the ‘Connections’ Policies (**C1 - C8**) perform well, supporting sustainable patterns of development which maximise opportunities for undertaking trips by walking, cycling and public transport. Policy **C1** (Active and Sustainable Travel) promotes the use of active and sustainable transport modes, and is supplemented by Policies **C2 - C4**; requiring that walking and cycling routes that are coherent, direct, safe, comfortable and attractive. This reflects guidance documents Manual for Streets (DfT, 2007c) and Manual for Streets 2 (CIHT, 2010) and the Living Streets: A Highways Guide for Developers in Wokingham, which describe walking neighbourhoods of a maximum of 10 min walk being sustainable and those that would encourage people to walk and cycle. More detailed guidance on the core design considerations of routes is contained within the Local Walking and Cycling Infrastructure Plan (LCWIP) guidance and will be further refined as the LTP4 is developed.
- 9.10 Policy SS8 (Climate Change) similarly aims to minimise the need to travel and support a modal shift towards walking, cycling and use of public transport, in particular through criteria a to e.
- 9.11 ‘Accessibility’ in this respect is also supported through Policies **DH1** and **DH2**, which encourage high quality design; Policies **ER6 - ER9** which support functional retail centres; Policies **HC1** and **HC2** which encourage healthy and safe communities; and Policies **NE4 - NE6**, which are supportive of green and blue infrastructure objectives.
- 9.12 Also of note are Policies **SS11** (Safeguarded Routes) and **SS12** (Improvements to Transport Routes) also support improvements to the walking and cycling network and public transport services; however, other than Grazeley related proposals (discussed above) the majority of proposals are existing (such that the Local Plan is confirming support), as opposed to new proposals being facilitated by Local Plan proposed growth. One headline proposed scheme is a new Thames Crossing from Thames Valley Park Drive/A3290 to South Oxfordshire, for which a major application for Government funding was recently submitted.¹⁹

¹⁹ See <https://www.henleystandard.co.uk/news/traffic/148027/divided-over-bridge-plan.html>

- 9.13 Finally, Policy **SS13** (Development in the Countryside) is of note as it seeks to maximise opportunities to improve public access to the countryside. Notably, it makes provision for “*provision of essential community facilities which cannot be located within settlement limits.*”

Appraisal on the plan as a whole

- 9.14 The proposed concentration of growth at Grazeley enables a conclusion to be reached that the proposed spatial strategy would lead to **significant positive effects**, and the proposed development management policies are supportive of this conclusion, albeit there remains the potential to further strengthen the requirements that will apply to Grazeley and other proposed sites, taking account of development viability. Aside from Grazeley, the proposed package of smaller allocations is broadly supported, although a recommendation is made in respect of ensuring that the strategy for Charvil, which can be described as relatively high growth, is in-line with objectives relating to accessibility to community infrastructure.

Air and wider environmental quality

- 9.15 Sustainability objective:

- Minimise impacts arising from pollution and improve and prevent where possible

Commentary on the spatial strategy

- 9.16 A key consideration here is the need to avoid worsening of air quality - and ideally achieve improvements to air quality - within the three key air pollution hotspots locally, namely Reading (where an AQMA covers the town centre and beyond), Wokingham (where an AQMA follows the main roads through the town centre) and Twyford (where an AQMA is associated with the town centre crossroads).
- 9.17 In this light, a potentially headline consideration is the proposed support for a relatively high growth strategy in the north of the Borough, which could lead to increased traffic through the **Twyford** town centre AQMA. Specifically, allocations are proposed at Twyford (one site for 150 homes), Ruscombe (two sites for 20 homes) and Charvil (two sites for 160 homes) and Hurst (two sites for 15 homes). The Twyford site should benefit from good accessibility to the town centre by walking and cycling, and to Reading by rail and bus, but the other sites potentially perform less well, in the sense of car trips generated that pass through the AQMA. The need for measures to reduce levels of traffic through the Twyford town centre cross roads has long been discussed, and it is **recommended** that detailed work is completed to ensure that the Local Plan will not exacerbate the situation, and that all reasonable steps are being taken to improve the situation.
- 9.18 With regards to the **wider spatial strategy**, it is more challenging to identify the potential for proposed allocations to result in significant implications for air quality within known hotspot areas. The scale of growth proposed at **Grazeley garden town** certainly gives rise to a risk of high volumes of traffic travelling north along the A33 towards the Reading AQMA; however, there is an excellent opportunity to deliver high quality public transport (as discussed below) and an extensive range of services and facilities as part of the scheme (as discussed above), thereby minimising car movements towards the AQMA (commuting patterns are also a consideration – see discussion below). It is also noted that Policy SS3 (Grazeley garden town) seeks to introduce a “*step change in integrated and sustainable transport systems for Grazeley / edge of Reading area*” and deliver “*a highly attractive and accessible movement network to encourage and incentivise more sustainable active travel patterns within the development and to the surrounding area*”.
- 9.19 Finally, with regards to other ‘environmental quality’ matters, it is important to note the proposal to allocate four sites in proximity to either a main road or a railway line, could potentially give rise to air quality issues (although in practice air pollution decreases rapidly as distance from source increases) but, potentially more significantly, could give rise to concerns in respect of **noise pollution**. In all cases, there should be the potential to ensure a suitable landscape buffer and/or deliver other noise mitigation measures; however, some residual concerns remain. Specifically:
- Winnersh Farms, Winnersh is proposed to deliver 250 homes adjacent to the M4;
 - Toutley Depot, Wokingham is proposed to deliver 150 homes adjacent to the A329(M), with that part of the site furthest from the road constrained by flood risk;
 - Land on North West Side of Old Forest Road, Winnersh is proposed to deliver 35 homes in fairly close proximity to the M4; and

- Land south of Gipsy Lane is proposed to deliver 17 homes adjacent to the railway line, with that part of the site furthest from the railway constrained by flood risk.

N.B. a further important matter relates to the proximity of Grazeley to AWE Burghfield; however, this is a focus of discussion below, under 'Communities'.

Commentary on other policies

- 9.20 Firstly, there is a need to state that all policies discussed under the 'Accessibility' heading, above, as being supportive of efforts to minimise need to travel and car dependency are equally supportive of efforts to address air pollution. One policy discussed above is Policy **SS8** (Climate change) which also seeks to: *"Facilitate and encourage the use of electric vehicles through the provision of charging infrastructure."* A shift to electric vehicles will help to address problems of poor air quality nationally, although such vehicles are still associated with some air pollution, e.g. from brakes and tyres.
- 9.21 Having made this initial point, the following bullet points focus on the policies within the plan that deal explicitly with minimising pollution:
- Policy **DH2** (Safeguarding Amenity) requires that negative effects on amenity are minimised and highlights a number of ways that amenity can be compromised by new development, including through: loss of daylight and sunlight; loss of privacy; noise and disturbance; dust and fumes; odour; and vibration. This supplements Policy **DH1** (Place Making and Quality Design), the council's Design Guide SPD (2012) and the National Design Guide (2019) which require that development provide acceptable standards of amenity.²⁰ Furthermore these two policies seek to address matters such as hours of operation of businesses, and effects of traffic movements. Also of note is the Policy DH2 requirement that: *"Development proposals that would generate regular movements of HGVs and commercial traffic in residential areas should demonstrate that the impacts on the amenity of the local residents, by reason of noise and disturbance are minimised."*
 - Policy **HC5** (Environmental Protection) seeks to protect : human health, wellbeing or safety; residential amenity; environmental quality or landscapes; and "other sensitive receptors". The supporting text explains that: *"Examples of pollution may include but are not limited to; noise, vibration, light, air quality, radiation, gas emission or the degradation of soil and water resources from their natural state."*
 - Policy **HC6** (Air Pollution and Air Quality) sets out measures to ensure development proposals likely to have an impact on air quality, including those located in proximity to an existing or potential AQMA, are appropriately designed and mitigated. An Air Quality Assessment will be required, where the site is within an AQMA; within proximity to a source of air pollution which could present risk to human health; or where the proposal is of a type that would mean its occupiers would be particularly sensitive to air pollution.
 - Policy **HC7** (Light Pollution) sets out measures to ensure that development involving external lighting is appropriately designed and located, recognising that light can be seen as a form of pollution. Policy criteria includes requiring that *"consideration has been given to the tranquillity of the borough, with a clear distinction between what is suitable within rural and urban environments"*. As an authority with large rural areas Wokingham Borough is highly sensitive to this form of pollution, which can affect the perceptual landscape of the countryside including its tranquillity and dark skies.
 - Policy **HC8** (Noise Pollution) seeks to ensure that development proposals set out an appropriate scheme of mitigation, where noise-generating development would otherwise result in an unacceptable impact on noise sensitive receptors (both existing and proposed). Noise and associated vibration can have an adverse impact on environmental amenity, health and biodiversity. Sources of noise pollution include road traffic, trains, aircraft, commercial uses and entertainment premises.
 - Policy **NE9** (Sustainable Drainage) and Policy **NE10** (River Corridors) seek to ensure that development proposals incorporate Sustainable Drainage Systems (SuDS) to achieve wider environmental benefits and contribute towards water quality treatment in line with the Water Framework Directive (WFD, Thames River Basin Management Plan and other relevant catchment management plans. See further discussion below, under the 'Water' topic heading.

²⁰ Ministry of Housing, Communities & Local Government (2019) National Design Guide [online] available at: <https://www.gov.uk/government/publications/national-design-guide>

Appraisal on the plan as a whole

- 9.22 The appraisal raises certain concerns regarding the proposal to allocate seven sites for a total of 345 homes in proximity to the Twyford town centre AQMA, and also the proposal to allocate four sites in proximity to a motorway grade road or a railway line; however, on balance it is not clear that there is the potential to conclude the likelihood of 'significant' negative effects, taking account of proposed development management policy. There will be a need for further detailed work ahead of plan finalisation. **Significant effects are not predicted** at the current time, either positive or negative.

Biodiversity

- 9.23 Sustainability objective:

- Conserve and enhance biodiversity, including wildlife and river corridors and networks and to maximise opportunities for building in beneficial features for biodiversity including limiting the impact of climate change

Commentary on the spatial strategy

- 9.24 A focus of growth at **Grazeley garden town** is supported as the site does not stand-out as notably constrained from a biodiversity perspective and, as a very large scheme, there will be excellent potential to take a strategic and comprehensive approach to the delivery of green and blue infrastructure and wider habitat enhancement and creation. However, that is not to suggest that the site is without its sensitivities. A defining feature of the site is the floodplain of the Foudry Brook, which passes north/south through the centre of the site; however, the brook is not associated with any wetland priority habitat within the site (there is a notable patch to the south of the site). With regards to woodland, this broad area is associated with a relatively low density of ancient woodland and deciduous woodland priority habitat; however, there is a large area of Wood Pasture and Parkland priority habitat within the northern part of the site, and also a significant cluster of ancient woodland to the north of AWE Burghfield (which falls within the Kennet Valley BOA). The former would likely be impacted by development, whilst impacts to the latter would be avoided, given a need to ensure no development within the AWE Burghfield emergency planning zones.
- 9.25 With regards to **site-specific policy** for Grazeley garden town, the first point to note is that Policy SS3 (Grazeley garden town) sets out the need to: *“Enhance the natural environment, through a comprehensive strategic landscape, drainage and connectivity strategy and comprehensive network of multi-functional green and blue infrastructure by creating ecological networks and habitats to support a minimum 10% net gain in biodiversity, including high levels of connectivity to existing local and long-distance corridors and networks and supporting opportunities for formal / informal recreation.”* Also, the policy requires a 'landscape-led' approach, involving: *“A comprehensive network of multi-functional green and blue infrastructure and walking and cycling routes will be provided within the garden community incorporating key elements of the existing green assets within the site, including Foudry Brook corridor. It will include Suitable Alternative Natural Greenspace (SANG) as part of mitigating impacts upon the Thames Basin Heaths Special Protection Area, community parks, allotments and a new country park (easily accessible from the town centre and beyond). Sustainable drainage methods will be required throughout the site, in accordance with the SuDS Strategy, to mitigate flood risk and provide biodiversity enhancements to achieve an overall minimum net gain of 10%.”* Moving forward, it is **recommended** that work is completed to understand the degree to which Grazeley represents a locational opportunity, both in terms of delivering on-site new and enhanced habitat and directly funding nearby offsite enhancements and, in turn, confirm the potential to achieve biodiversity net gain at an appropriate scale.
- 9.26 With regards to the **wider spatial strategy**, the proposed approach to growth in two areas gives rise to some degree of concern:
- **Charvil/Twyford** - one of the proposed allocations stands out as notably constrained, namely Land West of Park Lane, Charvil (75 homes), which falls within a Biodiversity Opportunity Area (BOA) and would extend an existing permitted site as far as a small ancient woodland, which is designated as a Local Wildlife Site (LWS). It is also noted that nearby Land East of Park View Drive North, Charvil (85 homes) and Land at Bridge Farm, Twyford (150 homes) would extend the built form of Charvil and Twyford respectively as far as the floodplain grazing marsh priority habitat associated with the River Loddon (also forms part of the BOA), which is one of just two significant areas of this habitat in the Borough. It is **recommended** that the scale of the scheme be examined in order to ensure no adverse impact to the woodland, and ideally deliver an enhancement to the functioning of the woodland and the wider BOA.

- **Arborfield / Nine mile ride area** – the proposed allocation at the Reading FC Training Ground site (140 homes) is c.400m from Longmoor Bog SSSI and, as such, development could lead to a degree of recreational pressure on the site; however, given that the development will be adjacent to the existing SDL there will be very good access to a network of green infrastructure including an extensive area of Suitable Alternative Natural Greenspace (SANG) nearby to the south. It is also noted that the SSSI is closely associated with California Country Park. Also, two of the three proposed allocations in the Nine Mile Ride area (Land to the rear of 166 Nine Mile Ride, Finchampstead; Tintagel Farm, Sandhurst Road, Finchampstead) comprise priority woodland habitat, although both are very small sites.

Commentary on other policies

- 9.27 Policy **NE1** (Biodiversity and Nature Conservation) is the overarching policy for biodiversity, requiring development to take a holistic approach to conservation and enhancement opportunities as part of new development. Policy NE1 seeks to protect the natural environment, recognising the importance of designated biodiversity sites to maintain and enhance biodiversity levels and quality of life. Policy NE1 is supplemented by Policy **NE2** (Thames Basin Heath Special Protection Area), which specifically seeks to ensure the integrity of Thames Basin Heath SPA is maintained, and the impact of any development proposals is effectively mitigated; following a Habitat Regulations Assessment.
- 9.28 Policy NE1 also places focus on enhancing the quality of biodiversity throughout the Borough, requiring that *“proposals across sites of all sizes achieve a minimum 10% net gain for biodiversity.”* The achievement of biodiversity net gain is supported throughout the proposed policy framework, including Policy **SS1** (Spatial Strategy), Policy **SS3** (Grazeley Garden Town), Policy **SS8** (Climate change), Policy **DH1** (Place Making and Quality Design), and Policy **NE5** (Landscape and Design). In accordance with Policy NE5 development should maximise opportunities for net gains in biodiversity and *“promote green infrastructure with associated planting to improve ecological connectivity”*. There is a clear ambition; however, it is **recommended** that strategic spatial principles are developed to guide planning for net gain, specific to Wokingham Borough.
- 9.29 Policy **C8** (Green and Blue Infrastructure and Public Rights of Way), Policy **NE6** (Landscape Character, Value and Green Routes), and Policy **NE10** (River Corridors) further ensure that development proposals demonstrate that they have been designed to retain and, where possible, enhance existing green infrastructure (GI); providing mitigation for any unavoidable impacts. Where appropriate development proposals will also be expected to contribute to the improvement of Green Routes through landscape and tree planting schemes. Policy C8 (Green and Blue Infrastructure and Public Rights of Way) notably sets out to *“avoid the loss, fragmentation, isolation or other adverse impacts on existing green and blue infrastructure”*. The policy also supports development proposals to *“provide opportunities for, or contribute towards, improvements and enhancements to the quality and quantity of the wider multi-functional green and blue infrastructure network and other open spaces”* and proposals that improve or contribute towards *“opportunities for improvements for green infrastructure to minimise flood risk and urban heat island effect”*.
- 9.30 Also, along similar lines, the plan proposes eight areas of **Local Green Space**, which will help to secure these areas from development, potentially leading to climate change mitigation benefits where the greenspaces are suited to tree planting.
- 9.31 Policy **NE3** (Trees, Woodland and Hedgerows) and Policy **NE4** (Development and Existing Trees, Woodland and Hedgerows) provide further protection. Policy NE3 identifies that *“development proposals that would result in the loss or deterioration of woodland, ancient woodland and ancient or veteran trees will only be permitted if there are wholly exceptional reasons and a suitable compensation strategy exists.”* This is supplemented by Policy **DH1** (Place Making and Quality Design) which requires that development *“retain and protect existing trees, hedgerows and other vegetation worthy of retention”*.
- 9.32 Further to this, Policy **HC7** (Light Pollution) seeks to reduce the impact of light pollution, including a criterion for all development proposals for external lighting to ensure that *“Any potential impacts on sensitive receptors can be avoided or comprehensively mitigated where avoidances is not possible.”* Sensitive receptors in this respect include insects, avian, aquatic, riparian and nocturnal wildlife. This will minimise the impacts in terms of disturbance to species; e.g. the effect of light, both directly impacting, and as a result of reflections off of manmade and natural surfaces.
- 9.33 Finally, Policy **H14** (Development of Private Residential Gardens) notably requires *“biodiversity net gain wherever possible, and would not have an adverse impact on biodiversity through the fragmentation of blocks of gardens, which together, or in association with adjacent green space are deemed to make an important contribution to biodiversity and the wider green infrastructure network.”*

Appraisal on the plan as a whole

- 9.34 The proposed spatial strategy seeks to direct the majority of growth to areas with limited sensitivity, from a biodiversity perspective, although the appraisal identifies a degree of concern in respect of the proposed strategy at Charvil/Twyford and in the Arborfield/Nine Mile Ride area. A focus of growth at Grazeley is tentatively supported; however, that is not to suggest that the site is without its sensitivities, recognising that a defining feature of the site is the floodplain of the Foudry Brook and also noting a large area of priority habitat. There will be a need for detailed work to confirm that the spatial strategy is conducive to achieving a suitable gain in biodiversity at the Wokingham scale or (ideally) all affected functional landscape scales. **Significant effects are not predicted** at the current time, either positive or negative.

Climate change adaptation

- 9.35 Sustainability objective:

- Reduce the risk of flooding and the resulting detriment to public well-being, the economy and the environment by ensuring no inappropriate development in any areas at risk of flooding and use sustainable drainage solutions and other solutions in line with advice from the Environment Agency where necessary.

Commentary on the spatial strategy

- 9.36 The key consideration here is the need to avoid development - in particular residential - encroaching on fluvial flood risk zones, noting the possibility of expanded flood risk zones under climate change scenarios. A secondary consideration is the need to avoid surface water flood risk zones, noting that it is often possible to deal effectively with surface water flood risk through masterplanning and design measures, namely sustainable drainage systems (SuDS). Another consideration is development impacts (either positive or negative) to water flows and, in turn, down-hill / down-stream flood risk; however, it is difficult to identify issues at the strategic level.
- 9.37 A stand-out consideration here is the extent of fluvial flood risk within the **Grazeley garden town** site which, as discussed above, is associated with the shallow valley of the Foudry Brook. It is fair to assume that a starting point for masterplanning will be the need to avoid the defined fluvial flood zones; however, a precautionary approach could involve additionally avoiding a buffer zone to account for climate change risks and also the large area of surface water flood risk to the west of the railway line at the southern extent of the site, associated with a small stream without a defined fluvial flood zone. Initial work has already been completed to identify means of delivering a successful new settlement whilst avoiding flood risk zones.
- 9.38 With regards to **site-specific policy** for Grazeley garden town, the first point to note is that Policy SS3 (Grazeley garden town) sets out the need to: *“Secure a comprehensively planned smart and sustainable approach that champions climate resilience and adaptation through design and construction methods... Grazeley garden town will... ensure the new garden community is resilient to climate change...”* Also, there is a focus on biodiversity net gain (discussed above), water efficiency (discussed below) the policy requires a ‘landscape-led’ approach, involving: *“A comprehensive network of multi-functional green and blue infrastructure and walking and cycling routes will be provided within the garden community incorporating key elements of the existing green assets within the site, including Foudry Brook corridor...”* This reference to the Foudry Brook corridor is welcomed, and it is also noted that Policy **C8** (Green and Blue Infrastructure and Public Rights of Way) *requires “a linear ‘canal corridor’ at Grazeley garden town to integrate the existing Foudry Brook”*. It is **recommended** that work is completed to prepare a conceptual masterplan for the garden town that clearly shows the relationship between areas of built development and areas of flood risk, both fluvial and surface water. It is also **recommended** that efforts are made to clarify all discussions of climate change to ensure a clear focus on either mitigation or adaptation/resilience.
- 9.39 With regards to the **wider spatial strategy**, the first point to note is the one site (Winnersh Plant Hire, Reading Road, Winnersh; 20 homes) that falls entirely within flood risk zone 2; however, as a brownfield site located in proximity to Winnersh district centre, it may prove that there is an exceptional case for development, alongside suitable mitigation measures (e.g. non-residential uses on the ground floor). The second point to note is that several allocations intersect flood risk zone 2 to a small extent. In each case it is fair to assume that land within the flood zone will be left undeveloped; however, there is nonetheless potentially a concern that a significant number of new homes might be delivered in very close proximity to the existing fluvial flood zone, which could potentially expand under climate change scenarios. Specifically, the following sites intersect fluvial flood risk zone 2:

- Land East of Park View Drive North, Charvil (85 homes)
 - Land at Bridge Farm, Twyford (150 homes)
 - Winnersh Farms, Winnersh (250 homes)
 - Land east of Toutley Depot (150 homes)
 - Ashridge Farm (100 homes)
 - Land south of Gipsy Lane (17 homes)
- 9.40 Finally, it is noted that one site proposed for Gypsy and Traveller pitches (Land to the rear of 166 Nine Mile Ride) falls almost entirely within a surface water flood zone. It is the low risk zone that covers most of the site (1 in 1000 year); however, a narrow band of land subject to high risk (1 in 30 year) passes through the centre of the site.

Commentary on other policies

- 9.41 Policy **SS8** (Climate Change) presents an overarching policy to address climate change through the Local Plan, recognising climate change as a strategic priority to be actioned, in accordance with national commitments and targets. This also reflects the council's declaration of climate emergency in July 2019. Policy SS8 is supplemented by Policy **SS9** (Climate Change Adaptation) which sets out adaptation measures required to be built into new developments. Proposals will be supported where they demonstrate how they have been designed to maximise resistance and resilience to climate change, for example by including measures such as solar shading, thermal mass, heating and ventilation of the building and appropriately coloured building materials, green and brown roofs, green walls, etc.
- 9.42 Also of importance are the following natural environment policies:
- Policy **NE8** (Development and Flood Risk (from all sources)) seeks to ensure that development proposals avoid areas of flood risk and do not increase the risk of flooding elsewhere. The overall aim is to guide new development into Flood Zone 1 as far as possible. The policy ensures development proposals are supported by a site-specific Flood Risk Assessment (FRA) where necessary, which should "*take account impact of surface water flooding and drainage, groundwater and other sources of flood risk*".
 - Policy **NE9** (Sustainable Drainage) seeks to ensure that all development schemes manage and reduce surface water run-off, including through Sustainable Drainage Systems (SuDS).
 - Policy **NE10** (River Corridors) seeks to protect the function of all river corridors in the Borough, recognising the importance of securing natural flood management.

Appraisal on the plan as a whole

- 9.43 Grazeley is strongly associated with the valley of the Foudry Brook, and hence there is a degree of concern ahead of detailed work to confirm the potential to deliver a successful new town whilst avoiding flood risk from all sources; however, initial work has been undertaken, and the findings are reflected in the proposed site specific policy, which serves to reduce concerns. Nevertheless, there is a need to flag the risk of an **uncertain significant negative effect** associated with the Local Plan as a whole, given that a significant proportion of the package of smaller allocations intersect a flood risk zone. There will be good potential to avoid and mitigate risk through development management, and policies are proposed through the plan to ensure that this is the case; however, an element of residual risk remains at the current time.

Climate change mitigation

9.44 Sustainability objective:

- Increase energy efficiency and the proportion of energy generated from renewable sources in the Borough

Commentary on the spatial strategy

- 9.45 Matters relating to per capita greenhouse gas emissions are a focus of discussion below, under the ‘transport’ heading, and it follows that the focus of discussion here is the need to minimise per capita greenhouse gas emissions from the built environment. In practice, this means that there is a need to favour schemes with greatest potential to deliver decentralised heat and/or power generation from renewable or low carbon sources and deliver development to high standards of ‘sustainable design and construction’.
- 9.46 In practice, it is appropriate to highlight larger schemes as preferable on the assumption that the economies of scale will lead to funding availability. It follows that it is appropriate to flag the potential for significant positive effects to result from development of a very large (15,000 home) garden town at **Grazeley**. This would be a flagship scheme of national note, hence it is fair to assume development of a scheme that prioritises the achievement of climate change mitigation objectives in line with the national climate emergency (and there are also significant locational opportunities in respect of minimising per capita emissions from transport, as discussed below).
- 9.47 However, there is much uncertainty at this stage, with low carbon infrastructure not having been a focus of work completed to date. There is an established commitment for the scheme to be ‘carbon neutral’, which will likely necessitate decentralised renewable or low carbon heat/power generation; however, there remains much uncertainty regarding what might be feasible and deliverable in this respect. In particular, delivery of a ‘Grazeley-wide’ district heating network could prove challenging if there is a need to favour a dispersed / polycentric scheme, which will likely be the case due to the need to avoid flood risk zones.
- 9.48 With regards to **site-specific policy** for Grazeley garden town, the primary point to note is that Policy SS3 (Grazeley garden town) states: *“The garden town will be a holistically and comprehensively planned, self-contained new community with a distinct identity and character within its context. Development will secure high quality and innovative sustainable design and construction that promotes sustainable, attractive places to live for its new residents and champions climate resilience and adaptation to achieve a ‘carbon neutral’ garden town.”* However, there is no discussion of particular constraints or opportunities in respect of delivering low carbon heat and/power infrastructure. It is **recommended** that this is remedied as part of plan-making, as opposed to leaving matters to the planning application stage, noting recent experience of delivering ambitious low carbon infrastructure as part of major development schemes locally.

Commentary on other policies

- 9.49 Policy **SS8** (Climate Change) presents an overarching policy to address climate change through the Local Plan, recognising climate change as a strategic priority to be actioned, in accordance with national commitments and targets. In terms of climate change mitigation, Policy SS8 sets out the Council’s priorities of a) minimising the need to travel by private car and b) to improve the energy efficiency of buildings.
- 9.50 A central aim, as set out in Policy SS8, is requiring *“all new major residential developments to be carbon neutral”*. A *“Carbon Offset Fund”* will be established to support a range of projects and schemes across the Borough to improve energy efficiency and reduce carbon emissions. Policy SS8 sets out a number of actions to support sustainable travel and reduce car reliance, encouraging more people to live and work where journeys can be undertaken by walking, cycling and public transport.
- 9.51 A number of the wider policies proposed through the Local Plan will also support climate change mitigation, and mitigation for the negative effects emerging as a result of the delivery of development to meet identified needs. Eight ‘Connections’ policies are proposed (Policies **C1 - C8**) seeking to address the topics of accessible development, sustainable transport, the provision of electric charging facilities, vehicle parking standards, new transport infrastructure or measures and green and blue infrastructure (see discussion under the ‘Accessibility’ and ‘Transport’ SA themes). This is supported by policies which guide infrastructure delivery (Policy **SS10**) and the delivery of high quality communications infrastructure and superfast broadband (Policy **C6**); as well as design policies (Policies **DH1 - DH10**) requiring high quality design, sustainable design and construction, minimal carbon dioxide emissions and highly energy efficient buildings.

Appraisal on the plan as a whole

- 9.52 In conclusion, the proposal to focus growth at Grazeley is strongly supported, as the economies of scale associated with a scheme of this scale should lead to an excellent opportunity to deliver decentralised heat and/or power generation from renewable or low carbon sources and deliver development to high standards of 'sustainable design and construction'; however, there is a need for further details regarding the particular constraints/opportunities associated with the site. With regards to effect significance, there is inherently no potential to conclude highly significant effects as climate change mitigation is a global issue, such that local actions can have only a very limited effect; however, on the other hand, a national climate emergency has been declared, which serves to highlight the urgency of departing from the status quo. Having made these points, it is fair to conclude **moderate/uncertain significant positive effects**.

Communities

- 9.53 Sustainability objectives:

- Create and sustain vibrant and locally distinctive communities
- Reduce poverty and social exclusion
- Safe and secure environment
- Improve the health and wellbeing of the population

Commentary on the spatial strategy

- 9.54 The matter of accessibility to community infrastructure has already been discussed above, under the 'accessibility' heading; however, there remain a range of other community-related matters for discussion.

- 9.55 Potentially an overriding consideration is a need to ensure the safety of new residents of a garden town at **Grazeley** given proximity to AWE (Atomic Weapons Establishment) Burghfield, with the northwest part of the site subject to the AWE Detailed Emergency Planning Zone (DEPZ). However, it is fair to assume that all masterplanning options considered will be fully in alignment with AWE Burghfield safety considerations. Policy SS3 (Grazeley garden town) states:

"The development of a new garden community is not located within the DEPZ around AWE Burghfield. In the event this changes, the council will work with West Berkshire Council (as the lead authority for emergency planning for AWE Burghfield) and partners to mitigate risk and ensure that an adequate off-site emergency plan is in place."

- 9.56 Maintaining a focus on Grazeley, it is also fair to highlight the opportunity to deliver a high quality development that not only includes an excellent range of community infrastructure (as discussed above), but also achieves high standards in respect of the public realm and built environment, with the site promoters describing *"a high quality series of neighbourhoods set in a network of open spaces."*

- 9.57 A further key consideration here (which might alternatively be considered below, under 'housing') relates to the matter of supporting **Gypsy and Traveller** communities within the Borough. The proposed response to the recent Gypsy and Traveller Accommodation Assessment (GTAA) is to allocate three small sites for pitches in a similar broad area within the south of the Borough. There will be a need to scrutinise the suitability of this proposed strategy in light of consultation responses received, although at the current time one point to note is that one of the sites (Land to the rear of 166 Nine Mile Ride) is shown by the nationally available dataset to be affected by surface water flood risk, as discussed above. This site is also notable for comprising woodland priority habitat and for being in close proximity to California Crossroads local centre at Finchampstead North. It is also appropriate to highlight Grazeley as representing an opportunity to deliver new Gypsy and Traveller provision.

Commentary on other policies

- 9.58 A large number of policies in the Plan will affect this theme in some way, either directly or indirectly, through promoting equality, diversity and inclusion, and supporting healthy and safe environments to live in. The policies of particular relevance are identified below.

9.59 Policy **HC1** (Promoting Healthy Communities) and Policy **HC2** (Community Infrastructure) set out the broad requirements for development in terms of positively improving quality of life, recognising that new development presents a valuable opportunity to plan new spaces and places that promote and integrate healthy behaviours. As set out in Policy HC1 and HC2, strong and vibrant communities will be promoted through a high quality environment with local services to support health, social and cultural wellbeing and reduce inequalities. Policy HC1 also requires major development proposals to submit a Health Impact Assessment (HIA) to “*identify the likely health impacts of development, and to set out measures to improve health outcomes and address any potential negative effects and inequalities*”. Further detail in this respect is provided through a number of the Plan policies, as set out below.

9.60 The following policies are of note in terms of promoting equality, diversity and inclusion:

- Policy **H5** (Affordable Housing) further addresses the housing needs of the community as set out in Policy H1, and discussed further under the ‘housing’ theme below. Policy H5 sets out the requirements for the provision of affordable homes and ensuring that all new homes will be designed and constructed to accessible and adaptable home standards. Policy H6 (Rural Exception Sites) supports small-scale affordable housing schemes within settlements subject to a number of criteria. The provision of affordable housing should have positive impacts for younger people and those from lower income economic groups.
- Specialist housing will also be accessible and adaptable in line with the threshold and criteria as set out in Policy **H9** (Accommodation for Older People and Vulnerable Communities). Policy **H3** (Housing mix, density and standards) supplements this, seeking to create inclusive and mixed communities by ensuring the internal space of housing is delivered to the nationally prescribed space standards and accessible and adaptable standards in line with M4(2) and M4(3) of Building Regulations; thus reducing the potential risk of overcrowding, improving living conditions and reducing social isolation (consistent with the council’s Health and Wellbeing Strategy). This policy supports the needs of the community, including the needs of older people and the disabled, as identified through a Local Housing Needs Assessment (LHNA) (2020).
- Policy **H7** (Rural Workers’ Dwellings) sets out the Council’s approach to enabling rural workers’ dwellings to support rural businesses. Rural housing is important from a perspective of wishing to maintain the vitality of rural settlements and businesses, and in turn avoid issues of rural deprivation.
- Policy **H11** (Gypsies and Travellers and Travelling Showpeople provision) and Policy **H12** (Traveller Sites) seek to meet the accommodation needs of Gypsies and Travellers and Travelling Showpeople. Policy H11 allocates three sites to help meet the need identified through the Gypsy and Traveller and Travelling Showpeople Accommodation Needs Assessment (GTAA) (2017), with any additional requirement being put forward in planning applications.
- The support for employment and skills plans (Policy **ER5**) in new development proposals will help to provide opportunities for training, apprenticeships or vocational initiatives to develop local employability skills and may assist in reducing unemployment and deprivation in communities.

9.61 The following policies are of note in terms of promoting a safe and secure environment:

- Policy **DH1** (Place Making and Quality Design) includes several criteria relating to safe and secure environments, in particular:
 - “create safe environments that are designed to discourage crime and disorder through appropriate levels of natural surveillance and spaces that promote positive social interaction
 - deliver safe, easy access and movement for pedestrians, cyclists, cars and service vehicles; and
 - provide sufficient levels of high quality, usable private and public amenity space which is clearly delineated through the incorporation of high quality soft and hard boundary treatments as appropriate”.
- Policy **DH2** (Safeguarding Amenity) requires that negative effects on amenity be minimised as they can impact on quality of life. Policy DH2 highlights a number of ways that amenity can be compromised by new development, including through: loss of privacy; noise and disturbance; dust and fumes and crime and safety.

- Policy **HC10** (Development in the vicinity of Atomic Weapons Establishment [AWE], Burghfield) states that “development proposals in the land use planning consultation zones surrounding AWE Burghfield will be managed in the interests of public safety, emergency response, defence and security”. Development proposals should have regard to their proposed use, scale, location and impact on the function and operation of the emergency plan, through consultation with relevant bodies responsible for West Berkshire Council’s AWE Off-Site Emergency Plan to reduce any potential impact on the public of any accident arising from the site’s operations.

9.62 The following policies are of note in terms of access to open space and support for active lifestyles:

- Policy **HC3** (Open Space, Sports, Recreation and Play Facilities) requires that development protect, maintain and enhance the quality and capacity of facilities valued by the community; allowing for relocation and replacement of facilities where there will be a net gain in terms of quality. Further to this, new development must include the open space, sport and recreation and play facilities required to meet the needs of both existing and future communities in accordance with The Open Space, Sport and Recreation Facilities Assessment and Standards (2010-12). This positively reflects national policy, which emphasises the need for local authorities to plan for healthy and inclusive communities (NPPF (2019) Section 8: Promoting healthy communities).
- Policy **HC4** (Local Green Space) designates eight areas within the Borough as Local Green Space, recognising that these areas are of particular importance to local communities. Policy HC4 provides guidance for new development in relation to Local Green Space, ensuring continued protection to their integrity. Additionally, development proposals which improve accessibility to, or enhance the use of Local Green Space will be supported.
- Policy **NE7** (Sites of Urban Landscape Value) (SULVs) designates six open and undeveloped areas within settlements that make an important contribution to local character, amenity and landscape. Four SULVs were previously designated in the existing MDD local plan, with additional assessment undertaken that has resulted in two further SULVs. Together these areas provide important opportunities for formal and informal recreation, and form part of the setting and identity of settlements.

9.63 The protection and enhancement of green space is further supported by Policy **C8** (Green and Blue Infrastructure and Public Rights of Way) which seeks to protect and enhance the Borough’s green and blue infrastructure for its “*biodiversity, recreational, amenity, health and townscape and landscape value, and contribution towards mitigating and adapting to climate change.*” This is further supplemented by Policy **NE10** (River Corridors) which requires that watercourses are positively integrated in the design of new development from the outset. By considering watercourses in the design process from the start, it is possible to make the most of attractive riverside settings, and maximise green infrastructure and ecosystem service benefits.

9.64 Additionally, Policy C8 supports new Public Rights of Way (PRoW) where consistent with the prioritised routes identified in the Council’s Rights of Way Improvement Plan (ROWIP). Specifically, in accordance with Policy C8, development at Grazeley garden town will include the establishment of a linear ‘canal corridor’ to integrate the existing Foudry Brook with development to provide informal recreation for all users and to facilitate access to Reading and Green Park.

9.65 Policy **DH1** (Place Making and Quality Design) sets out a number of criteria for development to support healthy communities; supplementing detailed policy requirements established above. Specifically, Policy DH1 requires that all development:

- “Incorporate appropriate innovation in design to improve the quality of an area and the way it functions;
- Provide sufficient levels of high quality, usable private and public amenity space which is clearly delineated through the incorporation of high quality soft and hard boundary treatments as appropriate;
- Include an appropriate mix of uses to the scale and location of the development; and
- Be accessible to all, including people of all ages and with disabilities and other vulnerable members of the community through carefully designed access features and be capable of adaptation to meet future needs”.

Appraisal on the plan as a whole

- 9.66 The proposal to focus growth at Grazeley is broadly supported, as there would be the potential to deliver a thriving new community and also minimise impacts on existing communities (although it is important to recall that the site is constrained by proximity to AWE Burghfield). The proposed package of smaller site allocations is also broadly supported, in particular noting that these sites were identified as suitable for allocation following engagement with town and parish councils. It is fair to conclude **uncertain significant positive effects** overall, recognising that detailed site-specific proposals are emerging at this stage. Ahead of consultation there also remains a degree of uncertainty regarding the suitability of the proposed strategy for meeting Gypsy and Traveller accommodation needs.

Economy

- 9.67 Sustainability objectives:

- Ensure high and stable levels of employment
- Encourage 'smart' economic growth'
- Maintaining a buoyant and competitive economy with a range of jobs without adversely affecting the quality of life

Commentary on the spatial strategy

- 9.68 The available evidence indicates that existing and committed employment sites will ensure that there is sufficient employment floorspace in the Borough to meet demand over the plan period, at least in broad quantitative terms (there is also a need to factor-in qualitative considerations relating to various different types of employment floorspace). However, projections of employment land demand/supply balance are inevitably associated with a degree of uncertainty, given potential fluctuations in the national economy and changing business needs. It follows that there is merit to supporting mixed-used schemes that deliver targeted new employment floorspace.
- 9.69 In turn, there is merit in the proposal to focus growth at **Grazeley garden town** which, according to the site promoters, would deliver *“a range of employment spaces to nurture new ventures as well as providing bespoke space for companies supporting the economic growth of the Thames Valley.”* In accordance with this proposal, Policy SS3 (Grazeley garden town) sets out the need to: *“Provide and promote appropriate opportunities for local and small-scale employment for new and existing residents, both within and outside the new garden community, to support and enhance the overall economic viability of Grazeley garden town.”* Also of note is the policy support for:
- *“a wide range of jobs, skills and training opportunities associated with town, district and local centres”. New settlements location near Thames Valley Corridor provides an opportunity to deliver employment uses (associated with Central Thames Valley Growth Hub) and other employment in area”* and
 - *“walking, cycling and public transport network to facilitate accessible link to Reading and railway stations at Mortimer and Green Park and other key towns and settlements, to access local employment opportunities.”*
- 9.70 None of the other proposed site allocations would deliver new employment floorspace, although the plan is supportive of expansion of the **Thames Valley Science Park** through Policy ER1 and Policy SS5 (South of the M4 Strategic Development Location), which supports *“expansion... for approximately 18,500 sqm of floorspace.”*
- 9.71 Allocation of **Land east of Toutley Depot** (100 homes) is of note as the site is an existing employment allocation; however, employment uses have not come forward on the site, such that it is appropriate to make best use of the land through development for housing. N.B. Toutley Industrial Estate continues to be retained as a Core Employment Area in line with Policy ER1 and, indeed, the site can accommodate further employment floorspace through the reconfiguration of the site within its existing boundaries.
- 9.72 Another consideration is supporting existing centres of employment and economic activity by ensuring that new housing is located in close proximity, and in this respect the proposed spatial strategy is broadly supported, noting:

- **Grazeley** is well located in respect of accessing key employment locations including Green Park to the north and the Thames Valley Science Park to the east;
- **Twyford, Ruscombe and Charvil** can all be considered locations that are relatively well connected to Thames Valley Park and Reading to the west (also Maidenhead) by rail and/or the A4; and
- **North Wokingham SDL** – residents will have good access to Wokingham and employment centres further afield to the west and east via road and rail, and Toutley Industrial Estate is within the SDL.
- **Reading FC Training Ground**, Hogwood Park, Barkham (140 homes) - at the southern extent of the existing Arborfield Garrison SDL, is adjacent to Hogwood Industrial Estate, which is a Core Employment Area with scope for expansion and intensification; however, the site performs less well in terms of links to other major employment centres.

Commentary on other policies

- 9.73 Policy **ER1** (Meeting Employment Needs) and Policy **ER2** (Core Employment Areas) seek to safeguard the ten (listed) Core Employment Areas within the Borough, encouraging and facilitating their ongoing evolution in accordance with economic needs. Expansion and intensification of uses will be supported where proposals meet criteria set out in Policy ER2; and for those outside of the Core Employment Areas, Policy **ER3** (Employment Uses Outside of Employment Areas). To retain existing buildings in employment use and allocated employment land, both Policy ER2 and Policy ER3 require evidence to demonstrate how property or land cannot be used for its existing or designated employment use, through a marketing process.
- 9.74 In addition to safeguarding existing employment, Policy ER1 also supports new employment uses, particularly within town centres. This is supplemented by a suite of policies; including Policy **ER6** (The Hierarchy of Centres), Policy **ER7** (Town, District & Local Centres and Shopping Parades), Policy **ER8** (Strengthening the Role of Centres), and Policy **ER9** (Wokingham Town Centre). Policies ER6 - ER9 recognise the important role of different parts of the Borough in providing retail and associated services, supporting the change of use from retail to other uses, while also recognising the need for a criteria based approach to account for a range of potential impacts. Specifically, Wokingham town centre acts as the major retail location in the Borough and provides a mixture of convenience and comparison retail, alongside other services and facilities. Any development proposals within or in nearby to Wokingham town centre will therefore be required to “*promote and enhance its role, vitality and viability*” through “*protecting, enhancing or diversifying retail activity, and retaining prominent shopfronts within the primary shopping area*”. All proposals within Wokingham town centre must also be consistent with the on-going objectives set out in the Wokingham Town Centre Masterplan SPD (2010) or any successor document. Policy ER6 also recognises the important role small town and district centres in providing wide variety of services and facilities.
- 9.75 Further considerations are as follows:
- Policy **ER2** (Core Employment Areas) supports proposals that include “*a range of type and size of units, including flexible business space to meet current and future employment needs*” in order reflect the inevitability of changing business needs over time.
 - The safeguarding and enhancement of rural businesses and jobs is supported through Policy **ER4** (Supporting the Rural Economy), where they are of an appropriate scale to their location and in accordance with local character.
 - Access to skills and training opportunities will be primarily delivered through Policy **ER5** (Employment and Skills Plan). In accordance with Policy ER5 major development will be required to contribute to employment, education and skills initiatives. Development proposals for 10 or more dwellings or 1,000m² of non-residential floorspace will be accompanied by an Employment and Skills Plan to show how the proposal provides opportunities for training, apprenticeships or other vocational initiatives to develop local employability skills required by developers, contractors or end users of the proposal.
 - Policy **ER10** (Whiteknights Campus) sets out how the Council will continue to work proactively with the University of Reading and Reading Borough Council to support the continued development of Whiteknights Campus as a focus for the University of Reading. Policy ER10 ensures Whiteknights Campus continues to positively contribute to: the area as a whole; the wider national interest; and to meet the University’s longer-term business needs for educational and academic uses as set out in their Whiteknights Campus Development Plan, Accommodation Strategy and Campus Capacity Study.

Appraisal on the plan as a whole

- 9.76 The proposal to focus growth at Grazeley performs well as the scheme would deliver targeted new employment floorspace, and there is also support for expansion of Thames Valley Science Park. These proposals are in line with the economic evidence-base, which suggests limited need for new employment space in the Borough, given the pipeline of committed supply. The proposed suite of development management policies is also strongly supported, with these policies having an important role to play in a number of respects, e.g. ensuring protection of existing employment land and supporting thriving town centres. Taking the plan as a whole, i.e. spatial strategy and development management policy, it is possible to conclude the likelihood of **significant positive effects**.

Historic environment

- 9.77 Sustainability objective:

- Protect and enhance the historic environment, ensuring new development makes a positive contribution, or leads to no material harm, taking into account the setting of assets and links with the wider landscape

Commentary on the spatial strategy

- 9.78 There is notably no designated conservation area (at least within Wokingham Borough) in the vicinity of **Grazeley garden town**, such that concerns relate mostly to avoiding impacts to the setting of sporadic Grade 2 listed buildings. Also, it is noted that Grazeley may be associated with non-designated archaeological constraint, reflecting the surface geology which is partially one of easily worked alluvium soils, with the Wokingham Landscape Character Assessment (LCA, 2004) stating: *“This area has considerable evidence of very early agricultural exploitation. A concentration of cropmarks found across this area indicate possible clearance, cultivation and settlement through the prehistoric and Romano-British periods, probably focussed on the Foudry Brook...”* Also, there is a series of World War II pillboxes along the Foudry Brook as part of the defensive General Headquarters (GHQ) line. With regards to Policy **SS3** (Grazeley garden town), this does not currently reference any historic environment constraint or opportunity, although it does require “a distinct and unique identity”. Also, it is noted that the policy seeks to protect and retain the physical and visual sense of separation between settlements, including Shinfield, Spencers Wood and Three Mile Cross. It is **recommended** that the potential to integrate the historic environment as part of the proposed ‘landscape-led strategy’ is explored.

- 9.79 With regards to the **wider spatial strategy**, the proposed approach to growth in three parts of the Borough gives rise to a degree of concern:

- Allocation of **Ashridge Farm** within the North Wokingham SDL (150 homes) will likely impact on the setting of the cluster of four listed buildings/structures at the site's southern extent, which a Grade II* listed farmhouse. The adopted masterplan for the SDL identifies this area as ‘potential open greenspace’; however, the setting of the listed buildings may be impacted by the committed Northern Distributor Road.
- Expansion to the north of **Charvil** is constrained by a river valley landscape associated with a high density of scheduled monuments, likely reflecting soils that supported early settlement; however, the extent of the proposed allocation has been reduced (from the extent of the HELAA site) to reflect this very constraint.
- The proposed allocations at **Hurst** are in proximity to a cluster of listed buildings; however, once again, the extent of the proposed allocation has been significantly reduced in comparison to the submitted HELAA site and, indeed, the proposal is to support a ‘frontage only’ scheme in keeping with local character.

Commentary on other policies

- 9.80 Policy **DH5** (The Historic Environment) sets out the Council's approach to conserve and enhance heritage assets in the Borough, in the context of the social, environmental, cultural and economic significance of the assets. The supporting text highlights the importance of appropriate references such as, for designated assets, the National Heritage List for England (maintained by Historic England) and, for non-designated assets, the Berkshire Historic Environment Record, the Berkshire Historic Landscape Character Assessment (maintained by Berkshire Archaeology) or other relevant information held in a public records office. In addition, developers should refer to the Historic Environment Record (HER), and where relevant, Conservation Area Appraisals. Development proposals should also take into account the principles set out in the Council's Design Guide SPD.

- 9.81 Policy **DH6** (Archaeology) sets out the Council's approach to the conservation and enhancement of scheduled monuments, areas defined as Areas of High Archaeological Potential, or locations where archaeological remains are known or suspected. Where proposals have the potential to lead to adverse effects in this respect, proposals will need to be accompanied with a detailed assessment of the impact of the development upon archaeological remains and their significance. This should be in the form of an appropriate desk-based assessment using suitable references such as the HER and, where necessary, a field evaluation. Depending on the outcome of this assessment, applicants may be required to provide for the excavation, recording and archiving of remains.
- 9.82 Policies that relate to high quality design have the potential for positive effects on the historic environment. Notably, Policy **DH1** (Place Making and Quality Design) requires that all development *“Reinforce or create a positive sense of place and local distinctiveness through design that respects the local natural and historic character of the area, paying particular attention to urban grain, layout, rhythm, density, scale, bulk, massing, proportions, detailing and trees.”* Historic character is further protected through landscape policies discussed below under the Landscape SA theme; including Policy **NE5 - NE7**.
- 9.83 In addition to landscape focused policies, policies **DH9, DH10, NE1, NE3, NE4, NE10, HC2 - HC4, and C8**, all seek to protect the natural environment, open spaces, woodland and trees, and the countryside which support the wider historic environment and heritage settings.
- 9.84 Finally, it is noted that Policy **DH7** (Energy) supports proposals for sensitive retrofitting of energy efficiency measures and use of micro renewables in historic buildings. This could potentially lead to tensions with historic environment objectives, although there is a policy proviso that schemes will only be allowed *“provided the special characteristics of the heritage assets are protected”*.

Appraisal on the plan as a whole

- 9.85 In conclusion, whilst the proposed focus of growth at Grazeley is broadly supported (subject to policy being formulated in respect of appropriately integrating historic environment considerations), other elements of the proposed strategy give rise to a degree of concern, perhaps most notably the proposed allocation of Ashridge Farm within the North Wokingham SDL. A robust framework of development management policies is proposed, but a degree of residual concern remains, hence it is appropriate to flag **uncertain/moderate significant negative** effects at this stage.

Housing

- 9.86 Sustainability objective:
- Make provision for local housing needs by ensuring that everyone has the opportunity to live in a decent sustainably constructed and affordable home

Commentary on the spatial strategy

- 9.87 The first point to note is that the proposed spatial strategy (Policies H1 and H2) involves providing for **Local Housing Needs** (LHN; see discussion in Section 5 of this report) and seeks to ensure a steady trajectory of housing supply across the plan period, which in practice means allocating a good mix of sites with a total anticipated housing yield over-and-above LHN.

- 9.88 Development of a new garden town at **Grazeley** would give rise to an excellent opportunity to deliver the full mix of required housing types and tenures, including different tenures of affordable housing to help meet the high need that exists locally. There are arguments that, as a very large and complex site requiring major infrastructure upgrades, there is an inherent risk of delays to delivery of housing at Grazeley – i.e. a risk of delivery falling below the trajectory that is required by the adopted plan, thereby creating a risk that, at some point in the plan period, Wokingham Borough will be unable to demonstrate a five year housing land supply and/or fail the Housing Delivery Test. However, there are counter arguments in respect of delivery, notably reflecting the pending Government decision on whether to assign funding through the Housing Infrastructure Fund (HIF), and the Council's commitment to taking an active role in bringing the site forward.²¹ The Homes for the Future consultation response received from the site promoters stated that they “*welcome the chance to explore ideas and opportunities with Wokingham DC on how best to bring forward Grazeley at the earliest possibility. This could be achieved through [for example]... submission of an early planning application for an exemplar first phase, ahead of adoption of Local Plan.*”

Commentary on other policies

- 9.89 The clear need for affordable housing in Wokingham Borough, is considered sufficient justification to depart from government planning policy and require a pro-rata contribution from schemes of 9 or less dwellings. Policy **H5** seeks a contribution towards affordable housing from development proposals providing 5 or more dwellings, or a site size of 0.16 ha and above. The targets are consistent with Policy CP5 of the Core Strategy local plan which has been applied successfully without negatively impacting housing viability or deliverability. Notwithstanding, the council will be sensitive to exceptional costs of bringing a site to market such as for reasons of expensive reclamation or infrastructure costs.
- 9.90 The housing section of the Plan (Policies **H2 - H13**) seek to ensure that an appropriate mix of housing and accommodation types is provided to meet the needs likely to be generated in the Borough during the Plan period. This includes delivering development that meet Internal Space Standards (Policy H2), while also supporting proposals for housing specifically designed to meet the identified needs of older people and vulnerable communities (Policy H9), specialist accommodation and self-build/ custom build housing (Policy H8). Further key policies include Policy H4, which ensures existing homes are protected from being lost to other uses, unless there is clear justification for such loss, and Policy H6, which supports limited affordable housing in rural areas to meet local needs.
- 9.91 Policy H8 (Self Build and Custom Housebuilding) sets out the Council's approach to supporting the provision of self and custom build homes. National policy places a strong emphasis on supporting self-build and custom housebuilding through planning, encouraging Councils to plan proactively to encourage growth in this area. The Council recognises through Policy H8 that the custom and self-build sector can make a valuable contribution to housing delivery and the diversity of new homes; requiring that “development proposals for 100 dwellings or more will provide at least 5% of dwellings as serviced plots for self and custom build.” Policy H8 further makes it clear that delivery of market serviced self-build plots will be in addition to, and not in lieu of, an affordable housing provision requirement (Policy H5).

Appraisal on the plan as a whole

- 9.92 An overriding consideration is the need to allocate sites with a total yield that suitably exceeds ('buffers') the established (or, at least, agreed) LHN figure, and to allocate a good mix of sites conducive to ensuring a steady trajectory of housing supply across the plan period. In this respect the proposed spatial strategy is broadly supported, although there is inherently a degree of risk associated with a focus of growth at a new settlement, namely Grazeley. The proposed framework of development management policies is also broadly supported, including Policy H5 which relates to the crucial matter of requiring provision of affordable housing alongside market housing. With regards to effect significance, it is appropriate to predict **uncertain significant positive effects** at this relatively early stage in the plan-making process, recognising that further evidence regarding housing delivery timescales and plan viability may come to light through consultation.

²¹ See <https://news.wokingham.gov.uk/housing-funding-infrastructure-bid/>

Land, soils and natural resources

9.93 Sustainability objectives:

- Improve efficiency in land use through the re-use of previously developed land, existing buildings, including the re-use of resources and remediation of previously developed land
- Sustainably use resources (including renewable and non-renewable resources)
- Maintain and where appropriate improve soil quality, and to ensure land affected by contamination is remediated to a condition suitable for use
- Address waste by reducing and minimising waste as a priority and then managing waste in accordance with the waste hierarchy

Commentary on the spatial strategy

- 9.94 A foremost consideration is the need to avoid the loss of agricultural land classed as ‘best and most versatile’ (BMV), which the NPPF defines as that which is grade 1 (highest quality), grade 2 or grade 3a. The nationally available agricultural land quality dataset shows variation in agricultural land quality across the Borough; however, this dataset has low accuracy (indeed, it does not differentiate between grades 3a and 3b) and low spatial resolution (e.g. to the extent that smaller villages are not recognised as urban land) such that it must be used with caution.
- 9.95 Another dataset is available showing agricultural land quality with a much higher degree of resolution and accuracy, on the basis that it reflects the findings of field surveys, namely the “Post 1988” dataset; however, this dataset is very patchy, and covers only a small part of the Borough (see Appendix III).
- 9.96 Detailed survey data is available for the majority (the northern circa 2/3) of the **Grazeley garden town** site which shows a complex mix of grade 3a (i.e. BMV) and grade 3b (i.e. non-BMV). Detailed survey data is also available for Land West of Park Lane, **Charvil** (75 homes), showing this site to comprise grade 3a (i.e. BMV) quality land, and it also noted that detailed survey data for land adjacent to the other site at Charvil (Land East of Park View Drive North, Charvil; 85 homes) is shown to comprise grade 2 quality land (although the adjacent land is associated with the River Loddon floodplain, which could serve to suggest a different surface geology / soil type). No survey data is available for land in the vicinity of the final larger allocation in this area (i.e. the A4 corridor), namely Land at Bridge Farm; however, it is important to note that the low resolution national dataset shows this part of the Borough to be associated with a significant concentration of grade 2 quality land (as well as land of grade 3 and grade 4 quality).

Commentary on other policies

- 9.97 Policy **DH1** (Place Making and Quality Design) provides a robust and comprehensive set of criteria, specifying the quality of development that will be expected for the Borough. In the context of the Land, Soils and Natural Resources SA theme, **Policy DH1** requires that all development:
- “Make most efficient use of land and make best use of existing buildings while also designing in the adaptability of use into new buildings wherever possible to allow for flexibility in their usage over time;
 - Maximise opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land; and
 - Optimise the density of all developments, with higher densities provided in town centres.”
- 9.98 Policy **HC9** (Contaminated Land and Water) will be used by the Council to assess development proposals subject to existing contamination, to prevent unacceptable risk from pollution in the future. Where development is proposed on or adjacent to land that is suspected, or known to be contaminated, proposals should be accompanied by a preliminary assessment which notably includes: an assessment of the potential risks to human health, property, nature conservation, water quality or other receptors; and any preventative, mitigation or remedial measures and supporting assessments.

- 9.99 Policy **MW1** (Sustainable Waste Management) requires all new development that generates waste to make on-site provision for recycling and composting waste management facilities. The Council will work to support the government's ambition of zero avoidable waste by 2050²² through policies set out in the Joint Central and Eastern Berkshire Minerals and Waste Plan and the Wokingham Borough Local Plan. The longer-term waste needs of the Borough, including any shortfall in capacity, should therefore be considered as part of providing new waste management facilities. Policy **MW1** also ensures development proposals for waste management "maximise the management of waste through the Waste Hierarchy".
- 9.100 Policy **MW2** (Minerals Resource and Infrastructure) sets out how finite mineral resources should be protected from sterilisation from non-minerals development in order to contribute towards the supply of aggregates. Development proposals for non-mineral development are therefore required to submit a Minerals Resource Assessment to "identify the quality, quantity and extent of resources within the Mineral Safeguarding Area".
- 9.101 The sustainable use of resources (renewable and non-renewable resources) is discussed under the 'Climate Change Mitigation' SA theme. Policy **SS8** (Climate Change) sets out the Council's support for improving energy efficiency through new development, and is supplemented by design policies (**Policies DH1 - DH10**); which require high quality design, sustainable design and construction, minimal carbon dioxide emissions and highly energy efficient buildings. New development proposals (residential and non-residential) are required to submit a Sustainability Statement to demonstrate compliance with the standards set out in Policy **DH7** and Policy **DH8**.
- 9.102 Water efficiency is discussed under the 'Water' SA theme; however, in brief, the Wokingham Borough Council Water Cycle Study – Phase 1 Scoping Study (WCS) (2019) identifies that Wokingham Borough is classified as an area of serious water stress. Policy **DH8** (Environmental standards for non-residential development) ensures non-residential development proposals "*meet or exceed water conservation measures so that predicted per capita consumption does not exceed the appropriate levels set out in the applicable BREEAM standards*". For residential development, Policy **DH9** (Environmental standards for residential development) sets a higher optional standard for water efficiency of 110 litres per person per day, as justified in the WCS – Phase 1 Scoping Study (2019).

Appraisal on the plan as a whole

- 9.103 A primary consideration relates to the performance of the proposed spatial strategy in respect of avoiding the loss of best and most versatile agricultural land. In this respect, there is a degree of concern associated with the focus of growth at Grazeley and also at Charvil/Twyford. It seems likely that there will be a significant loss of best and most versatile agricultural land, hence there is a need to predict **significant negative effects**.

Landscape

- 9.104 Sustainability objective:

- Protect and enhance valued landscapes and the integrity of established character areas, ensuring new development makes a positive contribution, or leads to no material harm, also recalling links with the historic environment

Commentary on the spatial strategy

- 9.105 Evidence is available in the form of the Wokingham Landscape Character Assessment (LCA, 2004); however, this evidence explores the sensitivity/capacity of broad areas only, such that it is a challenge to reach conclusions in respect of the impacts likely to result from the proposed spatial strategy. Having made this initial point, the following bullet points give initial consideration to a selection of sites that give rise to a degree of concern in respect of landscape impacts:

²² Department for Business, Energy & Industrial Strategy (Policy 40)
<https://www.gov.uk/government/publications/clean-growth-strategy>

- The **Grazeley garden town** site comprises virtually the entirety of the Grazeley Farmed Clay Lowland character area, which has ‘moderate’ quality and sensitivity. The LCA describes a “*highly rural landscape*” and a “*simple flat landform, enclosed to the east by the prominent clay ridge of Spencers Wood*” and goes on to make a range of statements regarding quality, condition and sensitivity, including: “*The strong character is attributed to the distinctive flat landform and presence of the numerous streams including the course of the tranquil Foudry Brook. Also important is the mixed working farmland set within neatly clipped hedges, distinct rural settlement pattern of scattered farmsteads and hamlets and strong overriding rural character. The wayside commons and pattern of winding sunken lanes contribute to this rural character.*” The LCA also notably describes the hamlets of Grazeley and Poundgreen as being associated with a built form “*distinctive for its half-hipped roofs and use of traditional red brick with weatherboarding on agricultural buildings. The use of clay tiles, along with the soft red brick, also adds a warmth to the landscape. Thatch is also a feature of this area, reflecting its association with the Kennet and proximity to reed beds.*” Policy SS3 (Grazeley garden town) sets out the need for a ‘landscape-led strategy’, stating:

“A comprehensive network of multi-functional green and blue infrastructure and walking and cycling routes will be provided within the garden community incorporating key elements of the existing green assets within the site, including Foudry Brook corridor. It will include Suitable Alternative Natural Greenspace (SANG) as part of mitigating impacts upon the Thames Basin Heaths Special Protection Area, community parks, allotments and a new country park (easily accessible from the town centre and beyond). Sustainable drainage methods will be required throughout the site, in accordance with the SuDS Strategy, to mitigate flood risk and provide biodiversity enhancements to achieve an overall minimum net gain of 10%.

The delivery of permanent and protected multi-functional open spaces, green spaces and routes should make for distinct areas of separation between the new development and the urban edge of Reading, Grazeley garden town and existing settlements, including Shinfield, Spencers Wood and Three Mile Cross.

Sports provision and play areas with associated facilities, informal open spaces, allotments and community parks located to maximise use and meet the leisure and recreational needs of the new garden community, informed by the council’s local standards for open space, sport, recreation and play facilities.”

- Land East of Park View Drive North, **Charvil** (85 homes) – land surrounding Charvil, to the north of the A4, is associated with a distinctive wide river valley landscape where the River Loddon braids before reaching the River Thames, and there is a nearby (although not adjacent) circular footpath that that is likely to be well used by walkers and anglers (this area is popular for fishing). The LCA states: “*In some parts such as around Charvil, access to the floodplain is limited, creating a locally strong sense of remoteness. Views of parklands and manor houses associated with the adjoining valley sides also create an impression of settlement and are important features of the landscape.*” The LCA concludes that the ‘Loddon Valley with Open Water’ character area has only ‘moderate’ value and sensitivity; however, it is noted that this conclusion is reached on the basis that the area has been affected by extraction activities, which is thought not to apply to the Charvil area.
- Land at Bridge Farm, **Twyford** – there is no evidence available to suggest that this site is associated with any particular landscape sensitivity (although one consideration may relate to views across the site from the adjacent railway line); however, there is potentially a need to consider the possibility of an alternative green infrastructure use for this land, noting proximity to the River Loddon to the west, beyond which is Charvil Country Park.
- **Ashridge Farm** (150 homes) within the North Wokingham SDL has already been discussed above, under ‘Historic Environment’. There is a need to confirm that this land is not better suited to delivering green infrastructure noting the cluster of listed buildings at the southern extent of the site.

Commentary on other policies

- 9.106 Policy **DH1** (Place Making and Quality Design) supports the delivery of high quality design in development that will contribute to mitigating the potential negative effects arising as a result of the implementation of the Local Plan and its spatial strategy. Development is required to “*integrate appropriate new landscaping and green infrastructure as an integral part of the scheme*”. This is supplemented by Policy **NE5** (Landscape and Design) which requires development to adopt a landscape led approach, using the most up-to-date landscape studies, including the Borough-wide Landscape Character Assessment (LCA).

- 9.107 Criteria set out within Policy NE5 requires strategic tree planting in all types of development, reinforcing existing vegetative boundaries and corridors with new planting, and any replacement and mitigation planting to compensate for tree removal as detailed in Policy **NE4** (Development and Existing Trees, Woodland and Hedgerows). This is complemented by Policy **NE3** (Trees, Woodland and Hedgerows).
- 9.108 Policy **NE6** (Landscape Character, Value and Green Routes) seeks to ensure development “takes into account key characteristics and sensitivities of the landscape” to safeguard its intrinsic character, scenic beauty and perceptual qualities and is supported by a borough-wide Landscape Character Assessment. Valued landscapes are also identified in Policy NE6 and the Policies Map, following an individual assessment²³. Additionally, development proposals will be subject to a set of criteria to ensure that they “protect and enhance features that contribute to the attributes and quality of valued landscapes”. This includes criteria from the Landscape Institute’s “Guidance for Landscape and Visual Impact Assessment”.
- 9.109 Sites of Urban Landscape Value (SULV) are identified in Policy **NE7** (Sites of Urban Landscape Value) and the Policies Map, following an individual assessment,²⁴ Policy NE7 ensures development within or affecting these areas demonstrate that they have satisfied three key criteria, including taking into account their special landscape features and qualities, visual impact and capacity for informal recreation.
- 9.110 The protection and enhancement of the landscape, its character and setting is also provided through Local Plan policies relating to green infrastructure, open space and amenity. This includes policies **C8**, **HC4**, and **NE1 - NE2**.
- 9.111 A number of policies including Policy **H6** (Rural Exception Sites), Policy **H7** (Rural Workers Dwellings) and Policy **H12** (Traveller Sites) deal with types of development in the open countryside. Policy H7 supports proposals in the countryside subject to criteria, including landscape related. Proposals must demonstrate that the dwelling is “appropriately designed and landscaped to avoid harmful impact on the countryside character.”
- 9.112 Furthermore, Policy **SS13** (Development in the Countryside) ensures development proposals recognise the intrinsic beauty and character of the countryside. The policy is supported by a sub-set of criteria for development to “not lead to the physical, visual or perceived coalescence of existing settlements”.
- 9.113 Other policies with landscape (or townscape) implications are those that deal with amenity and the public realm, including:
- Policy **HC7** (Light Pollution), which sets out measures to ensure that development involving external lighting is appropriately designed and located, where development should seek to avoid and reduce light pollution, including control of lighting schemes that threaten the integrity of the night skies;
 - Policy **DH2** (Safeguarding Amenity), which sets out measures to minimise the impact of development on the amenity of existing properties;
 - Policy **DH3** (Shopfronts) which sets out measures to ensure that development proposals for new shopfronts or alterations to existing shopfronts is appropriately designed and located; and
 - Policy **DH4** (Advertisements and Signage), which sets out measures to ensure that development involving advertisements and signage is appropriately designed and located.
- 9.114 Finally, it is important to note Policy **SS14** (Development in the Green Belt), which applies to land extending to the east and north of Twyford. The main aim of Green Belt is to prevent urban sprawl by keeping land permanently open, but like all countryside, it also provides opportunities for people to access a rural environment, protects land for agriculture, forestry and similar land uses, and for nature conservation. Government planning policy restricts the types of development allowed in the Green Belt to a number of appropriate forms, and the aim of the policy is to clarify these requirements in light of local circumstances, including in respect of agriculture and forestry workers dwellings, replacement buildings, extensions and alterations to existing buildings, and re-use or conversion of buildings. Appraisal on the plan as a whole

²³ Add reference to Valued Landscapes Topic Paper

²⁴ Add reference to Site of Urban Landscape Value Topic Paper

Appraisal on the plan as a whole

- 9.115 The proposed spatial strategy seeks to direct the great majority of growth to areas with limited sensitivity, from a landscape perspective, noting that sites have been selected following engagement with town and parish councils, although the appraisal identifies a degree of concern in respect of the proposed expansion to the north of Charvil (85 homes). A focus of growth at Grazeley is tentatively supported; however, that is not to suggest that the site is without its sensitivities, given the description of a “highly rural landscape” presented within the Landscape Character Assessment. On balance, at this relatively early stage in the plan-making process, **uncertain significant negative effects** are predicted given the potential to avoid and mitigate impacts through masterplanning and design.

Transportation

- 9.116 Sustainability objective:

- Reduce road congestion on the local and strategic road network (SRN), and minimise air pollution and greenhouse gas emissions from transport, by improving carefully locating new development, minimising the need to travel and supporting ‘sustainable transport’ modes including safe walking and cycling routes and public transport

Commentary on the spatial strategy

- 9.117 From a ‘transport’ perspective there is merit to favouring large mixed use schemes that will support a degree of self-containment, i.e. a situation whereby residents’ need to travel beyond the local area is minimised. Such schemes can also support good access to high quality transport infrastructure (with capacity), in particular public transport infrastructure, such that longer trips (in particular commuting trips at peak times) can be made in such a way that per capita greenhouse gas emissions and traffic congestion (with associated pollution and impacts to economic productivity) are both minimised.
- 9.118 As such, the proposed focus of growth at **Grazeley garden town** is supported. As discussed above, under the ‘accessibility’ heading, the scale of the scheme would lead to an economy of scale - and resulting ability to deliver infrastructure upgrades as well as a full mix of uses (i.e. uses other than residential, which deliver lower financial returns) - that is of national note. Focusing on transport infrastructure upgrades, whilst there is no certainty at this early stage (including on the basis that a Government decision on HIF funding is pending), the scheme could potentially deliver, or enable delivery of significant infrastructure, including:
- a bridge over the M4 to connect to Green Park;
 - improvements to the A33 and Junction 11 of the M4;
 - an extension to the existing Mere oak park and ride and a new park and ride facility;
 - extension of the Reading rapid public transport network and a high-quality public transport network to facilitate access to Green Park and Mortimer stations and, in turn, Reading town centre; and
 - a potential new rail station (subject to further analysis and assessment).
- 9.119 More generally, it is fair to highlight the merit of growth in close proximity to the intersection of two strategic transport corridors, namely the M4 and A33, albeit it is recognised that M4 J11 is under pressure from growth at the nearby SDLs and in Reading Borough. It is also recognised that there are climate change mitigation arguments for not locating growth in proximity to the strategic road network.
- 9.120 With regards to **site-specific policy**, Policy SS3 (Grazeley garden town) states: *“The garden town will be of a sufficient scale to incorporate a proportionately sized town centre with proportionate retail and service components, a range of homes, employment, education and community facilities, civic and green spaces and other uses to enable residents to meet the majority of their day-to-day needs, reducing the need for outward travel and commuting.”* The policy goes on to commit to preparation of a Masterplan and Infrastructure Delivery Plan SPD with a focus including:

“... a step change in integrated and sustainable transport systems for Grazeley / edge of Reading area. Walking, cycling, rail and rapid public transit networks and connections will be at the heart of growth in the area by establishing a highly legible, attractive and accessible movement network to encourage and incentivise more sustainable active travel patterns both within the development and to the surrounding area, particularly Reading. The garden town will also identify measures to mitigate the transport impacts (including longer term) of the proposed development on the strategic and local road network.”

9.121 The policy goes on to support:

“... a new railway station on site; the extension and integration of a high-quality rapid public transit and public transport network to facilitate an attractive and accessible link to Reading and railway stations at Mortimer and Green Park; Park and Ride facilities; upgrades to the A33 and Junction 11, and other effective integrated measures to mitigate the transport impacts of the proposed development on the strategic and local road network.

9.122 However, delivery of a railway station is not yet, certain, with the policy stating:

“Support and not prejudice the provision of a new railway station to facilitate longer-term growth at the new garden community. The councils will continue to support a railway station at Grazeley garden town and will work with Network Rail, railway operators and other partners to develop and implement a strategy for its future delivery and ensure opportunities to do so are fully explored and maximised.”

9.123 With regards to the **wider spatial strategy**, matters relating to accessibility to community infrastructure and key employment locations have already been discussed above, under the ‘Accessibility’ and ‘Employment’ topic headings. A degree of growth focused on the A4 corridor is potentially broadly supported, on the basis that this area is relatively well connected by road and rail, and distant from existing major growth locations, namely the SDLs, and also distant from the proposed future focus of growth at Grazeley.

Commentary on other policies

9.124 The Council’s Local Transport Plan 3 (LTP3) contains the transport policy for the Borough which reflects the overarching principles of national policy and guidance as well as local priorities. Further work is underway to update the LTP. It is anticipated that LTP4 will be adopted alongside the LPU.

9.125 The ‘Connections’ Policies (**C1-C8**) follow LTP guidance; ensuring that development and transport planning will be co-ordinated to reduce the need to travel by car, increase public transport use, cycling and walking, and improve accessibility and safety in the Borough. This will be achieved by improving strategic road and rail connections, promoting transport choice through improvements to public transport services and infrastructure as well as promoting improved, safe access to sustainable transport modes by all forms of transport.

9.126 The Council seek to prioritise active travel through Policy C3 (Cycling and Walking) and C8 (Green and Blue Infrastructure and Public Rights of Way), strengthening the pedestrian environment and supporting walking and cycling improvements (provision of signage, access and facilities), such as through *“promoting accessibility, linkages and permeability between and within existing green corridors.....and connecting settlements to the countryside via a network of Greenways, green routes etc.”*. This is reiterated through a number of other Local Plan policies, supporting sustainable connectivity throughout the Borough. Also of note is Policy C4, which seeks to enhance opportunities for cycle parking.

9.127 Other policies notably supportive of the ‘Transport’ objectives include: Policies **DH1** and **DH2**, which encourage high quality design through *“safe, easy access and movement for pedestrians, cyclists etc.”* and *“maximising opportunities for and prioritisation of walking, cycling and other sustainable modes of transport”*; Policies **ER6 - ER9** which support functional retail centres; Policies **HC1** and **HC2** which encourage healthy and safe communities; and Policies **NE4 - NE6**, which are supportive of green and blue infrastructure objectives.

9.128 Furthermore, Policy **C5** (Technology and Innovation in Transport) sets out the Council’s support for innovative transport provision; recognising that the UK is already a leader in Europe in terms of electric vehicle manufacture and uptake with 1 in every 8 zero emission cars bought in Europe in 2017 being built in the UK, and the commitment to the sale of new petrol and diesel cars being banned by 2040 (Road to Zero Strategy (2018)). New developments are therefore required to provide and retain electric vehicle charging facilities in accordance with adopted standards. Where major development is proposed, in line with the Council’s Local Validation List, an Electric Vehicle Charging Strategy will be required.

- 9.129 Final considerations relate to Policies **SS10, 11 and 12**, which seek to ensure the impact of development can be mitigated, including through the safeguarding of routes for new infrastructure. In this respect it is important to note that strategic scale transport modelling has been undertaken to assess the possible future impact of development on the road network.

Appraisal on the plan as a whole

- 9.130 A focus of growth at Grazeley is supported as a major new settlement in this location, representing a significant opportunity to deliver growth in such a way that minimises need to travel and car dependency, and hence ultimately minimises per capita greenhouse gas emissions from transport and also traffic congestion; however, there is much uncertainty ahead of further detailed work. **Significant effects are not predicted** at the current time, either positive or negative.

Water

- 9.131 Sustainability objective:

- Maintain, and, where appropriate improve water quality (including groundwater and surface water) and to achieve sustainable water resource management of both surface and groundwater flows

Commentary on the spatial strategy

- 9.132 With flooding already having been a focus of discussion above, there is a remaining need to consider: water resources; water supply infrastructure; wastewater collection infrastructure; wastewater treatment capacity; water quality; flood risk from additional foul flow; odour from WwTW; and environmental constraints. Issues are explored in detail through the Wokingham Borough Water Cycle Study (WCS) Scoping Report (January 2019), and are discussed, with reference to spatial strategy options, within both Appendices IV and VI. In brief, the WCS serves to highlight limited concerns.

- 9.133 With regards to **Grazeley garden town**, there is much uncertainty at the current time, although it is noted that the representation received from the site promoters through the Homes for the Future Consultation (2018) suggested the potential for “*major water and utility infrastructure improvements*”. The proposed **site specific policy** (SS3) includes a focus on water efficiency, stating a need to: “*Secure a comprehensively planned smart and sustainable approach that champions climate resilience and adaptation through design and construction methods... [and] deliver high standards of energy efficiency and water efficiency (with the aim of being water neutral in areas of serious water stress)...*” However, the policy does not discuss wastewater infrastructure. It is **recommended** that detailed work to confirm the situation is undertaken ahead of plan finalisation.

Commentary on other policies

- 9.134 Adequate water and wastewater infrastructure is needed in order to support sustainable development, and this is made clear in national policy and guidance. In accordance with Policy **C7** (Utilities) development proposals will need to demonstrate that there is either enough infrastructure capacity or that this can be readily provided as part of any scheme. For example, Policy **H13** (Houseboat Moorings) states that development proposals for new residential moorings will only be supported where “*the site is connected or is capable of being connected to suitable utilities and on site services including water supply, electricity and disposal facilities for sewage and waste, as far as is practicable.*”
- 9.135 The Council seeks to increase water efficiency through Policy **DH8** (Environmental Standards for Non-residential Development) and Policy **DH9** (Environmental Standards for Residential Development). Policies DH8 and DH9 recognise that water is a valuable resource for all types of development, and therefore seek to ensure that the highest possible standards of water efficiency are in place. The Wokingham Borough Council Water Cycle Study – Phase 1 Scoping Study (WCS) (2019) identifies that Wokingham Borough is classified as an area of serious water stress²⁵. In order to address this issue, the higher water efficiency standard in Regulation 36 of the Building Regulations is required (optional standard for water efficiency of 110 litres per person per day).

²⁵ Environment Agency and National Resources Wales’s study Water Stressed Areas - Final Classification (2013)

9.136 Policy **NE9** (Sustainable Drainage) and Policy **NE10** (River Corridors) seek to ensure that development proposals incorporate Sustainable Drainage Systems (SuDS) to achieve wider environmental benefits and contribute towards water quality treatment in line with the Water Framework Directive (WFD, Thames River Basin Management Plan and other relevant catchment management plans. Policy NE9 is supported by a Sustainable Drainage Systems strategy, which contains guidance and technical requirements for SuDS. The SuDS Strategy has identified that surface water bodies and groundwater bodies in the Borough are currently achieving either 'poor' or 'moderate' overall status in line with the WFD (with the exception of Farnborough Bagshot Beds), and none are achieving 'good' status. The Strategic Flood Risk Assessment (SFRA) provides further information regarding flood risk, including historic flood events and surface water flooding.

Appraisal on the plan as a whole

9.137 The Water Cycle Study does not serve to highlight any major constraints to growth; however, there remains considerable uncertainty, in respect of risks to the water environment, ahead of further work, perhaps most notably in respect of waste water treatment capacity to serve Grazeley garden town. Having said this, concerns are reduced by the proposal to (paraphrasing) "champion climate resilience and adaptation through design and construction methods and deliver high standards of water efficiency with the aim of being water neutral in areas of serious water stress." **Significant effects are not predicted** at the current time, either positive or negative, recognising good potential to address water environment issues/impacts at the development management stage; however, there is some uncertainty.

Overall conclusions on the Draft LPU

9.138 The appraisal predicts strongly positive effects in respect of one sustainability topic, namely **Accessibility** reflecting the opportunity associated with a new garden town at Grazeley garden town (henceforth 'Grazeley'), and the **Economy** in particular given the potential to deliver targeted new employment land at Grazeley. Also, uncertain or moderate positive effects are predicted in respect of the following topics:

- **Climate change mitigation** – the proposal to focus growth at Grazeley is strongly supported, as the economies of scale associated with a scheme of this scale should lead to an excellent opportunity to deliver decentralised heat and/or power generation from renewable or low carbon sources and deliver development to high standards of 'sustainable design and construction'; however, there is a need for further details regarding the particular constraints/opportunities associated with the site.
- **Communities** – the proposal to focus growth at Grazeley is broadly supported, as is the proposed package of smaller site allocations is also broadly supported; however, there naturally remains uncertainty ahead of further details regarding site-specific proposals. There also remains a degree of uncertainty regarding the suitability of the proposed strategy for meeting Gypsy and Traveller accommodation needs.
- **Housing** – the proposed spatial strategy is broadly supported, although there is inherently a degree of risk associated with a focus of growth at a new settlement, namely Grazeley, in respect of ensuring that annual housing delivery targets are met across the entirety of the plan period.

9.139 Also, a broadly neutral conclusion is reached in respect of several topics, namely:

- **Air quality** - the appraisal raises certain concerns regarding the proposal to allocate seven sites for a total of 345 homes in relatively close proximity to the Twyford town centre AQMA, and also the proposal to allocate four sites in notably close proximity to a motorway grade road or a railway line; however, on balance it is not clear that there is the potential to conclude the likelihood of 'significant' negative effects.
- **Biodiversity** - the proposed spatial strategy seeks to direct the great majority of growth to areas with limited sensitivity, from a biodiversity perspective, although the appraisal identifies a degree of concern in respect of the proposed strategy at Charvil/Twyford, the Arborfield Garrison SDL and Nine Mile Ride. A focus of growth at Grazeley is tentatively supported; however, that is not to suggest that the site is without its sensitivities, and there is a need for further work to confirm 'net gain' potential.
- **Transport** - a focus of growth at Grazeley is supported as a major new settlement in this location represents a significant opportunity to deliver growth in such a way that minimises need to travel and car dependency, and hence ultimately minimises per capita greenhouse gas emissions from transport and also traffic congestion; however, there is much uncertainty ahead of further detailed work.

- **Water** - the Water Cycle Study does not serve to highlight any major constraints to growth; however, there remains considerable uncertainty, perhaps most notably in respect of waste water treatment capacity. Having said this, concerns are reduced by the proposal to 'champion' high standards of water efficiency.

9.140 However, the appraisal flags the risk of negative effects in respect of the following topics:

- **Climate change adaptation** - Grazeley is strongly associated with the valley of the Foudry Brook, and a significant proportion of the package of smaller allocations intersect a flood risk zone. There will be much potential to take steps to avoid and mitigate flood risk prior to plan finalisation, but at the current time it is appropriate to flag the risk of significant negative effects.
- **Historic environment** - whilst the proposed focus of growth at Grazeley is broadly supported (subject to policy being formulated in respect of appropriately integrating historic environment considerations), other elements of the proposed strategy give rise to a degree of concern. A robust framework of development management policies is proposed, but a degree of residual concern remains.
- **Landscape** - the proposed spatial strategy seeks to direct the great majority of growth to areas with limited sensitivity, from a landscape perspective, noting that sites have been selected in consultation with town and parish councils, although the appraisal identifies a degree of concern in respect of the proposed expansion to the north of Charvil (85 homes). A focus of growth at Grazeley is tentatively supported; however, that is not to suggest that the site is without its sensitivities, as a "highly rural landscape".
- **Land, soils and natural resources** – there is a need to conclude the inevitability of significant negative effects as the proposed spatial strategy would lead to significant loss of best and most versatile agricultural land, although it is recognised that reasonable spatial strategy alternatives perform worse (see Part 1).

9.141 The Council should look to address impacts and uncertainties highlighted through the appraisal head of plan finalisation, and also take account of the detailed recommendations that have been made (a total of ten); however, it is recognised that there is a need for plan-making expediency and proportionality, and that many issues/impacts can be appropriately addressed through development management.

Cumulative effects

9.142 The SEA Regulations, which underpin the SA process, indicate that stand-alone consideration should be given to 'cumulative effects', i.e. effects of the Local Plan in combination with other plans, programmes and projects that can be reasonably foreseen. In practice, this is an opportunity to discuss potential 'larger than local' effects. The following bullet points cover some key considerations:

- **Grazeley** – a new garden town at Grazeley will primarily 'look towards' Reading for higher order services and facilities, employment and retail, and will also be very well connected to Basingstoke to the south. Furthermore, approximately 1/3 of the proposed scheme would be delivered within West Berkshire District. As such, there will be a need to take careful account of planned and proposed schemes within these areas, and also to take careful account of the forthcoming plans for AWE Burghfield.
- **Transport infrastructure** – the Council will need to work with neighbouring authorities and Highways England in order to avoid 'severe' (see NPPF paragraph 109) traffic congestion, including along the A33, and capacity on the rail network is a further consideration. Also, the Council will need to be mindful of any emerging 'Reading-centric' or sub-regional objectives in respect of major infrastructure upgrades.
- **Employment** – the Employment Land Needs Study has explored strategic considerations and concluded limited need for new employment land in the Borough; however, this situation will need to be kept under review, including through liaison with the Thames Valley Berkshire Local Enterprise Partnership (LEP).
- **Thames Basin Heath SPA** – the matter of in-combination impacts to the SPA is a focus of a stand-alone Habitats Regulations Assessment (HRA), noting that eleven authorities are involved in the formal partnership to manage the SPA.
- **Landscape scale net gain** – there is a need to focus efforts on achieving conservation and 'net gain' objectives, in respect of biodiversity and wider ecosystem services, at functional landscape scales, including those discussed within the Wokingham LCA (also catchment scales). For example, the north of the Borough links to chalk influenced landscapes to the east and plays a role in respect of achieving objectives for the River Thames, including relating to its role as a National Trail.

Part 3: What are the next steps?

10. Plan finalisation

Publication of the Proposed Submission LPU

- 10.1 Subsequent to the current consultation it is the intention to prepare the proposed submission version of the LPU for publication in-line with Regulation 19 of the Local Planning Regulations 2012. The Proposed Submission LPU will be that which the Council believes is 'sound' and intends to submit for Examination. Preparation of the Proposed Submission LPU will be informed by the findings of this Interim SA Report, responses to the current consultation, further evidence gathering and further appraisal work.
- 10.2 The SA Report will be published alongside the Proposed Submission LPU. It will provide all the information required by the SEA Regulations 2004.

Submission, examination and adoption

- 10.3 Once the period for representations on the Proposed Submission LPU / SA Report has finished the main issues raised will be identified and summarised by the Council, who will then consider whether the LPU can still be deemed 'sound'. If this is the case, the LPU will be submitted for Examination, alongside a statement setting out the main issues raised during the consultation. The Council will also submit the SA Report.
- 10.4 At Examination the Inspector will consider representations (alongside the SA Report) before then either reporting back on soundness or identifying the need for modifications. If the Inspector identifies the need for modifications to the LPU these will be prepared (alongside SA if necessary) and then subjected to consultation (with an SA Report Addendum published alongside if necessary).
- 10.5 Once found to be 'sound' the LPU will be formally adopted by the Council. At the time of adoption a 'Statement' must be published that sets out (amongst other things) 'the measures decided concerning monitoring'.

11. Monitoring

- 11.1 The SA Report must present 'measures envisaged concerning monitoring'.
- 11.2 At the current time, in-light of the appraisal findings presented in Part 2 (i.e. predicted effects and uncertainties), it is suggested that monitoring efforts might focus on:
 - Air quality – the Council might review how air quality monitoring efforts are targeted in light of the Local Plan, including with a view to both understanding how air quality is changing over time within AQMAs and identifying problem areas outside of the existing designated AQMAs.
 - Biodiversity – the Council might look into updating the Biodiversity Monitoring Report, which has not been updated since 2016. There will also be a need to develop a framework for ensuring that individual developments deliver a biodiversity net gain in combination at landscape / functional scales.
 - Climate change adaptation – the Council might monitor housing in close proximity to a fluvial flood zone and also homes intersecting the 1 in 30 year surface water flood zone.
 - Climate change mitigation – there will be a need to monitor the proportion of new homes that come forward at sites linked to a district heating network, or which benefit from decentralised heat or power generation in some way, and also the proportion of homes delivered to standards of sustainable design and construction that exceed building regulations.
 - Housing – the Council already monitors numerous housing delivery related matters through the Annual Monitoring Report, and the list of indicators should be kept under review.²⁶
 - Transport – at Grazeley garden town there will be merit to monitoring the travel behaviours of residents in detail, in order to test the hypothesis that per capita emissions from transport can be minimised through a focus of growth at major growth locations.

²⁶ See <https://www.wokingham.gov.uk/planning-policy/planning-policy-information/planning-policy-supporting-information/>

Appendix I: Regulatory requirements

As discussed in Chapter 1, Schedule 2 of the Environmental Assessment of Plans Regulations 2004 explains the information that must be contained in the SA Report (N.B. this current report is not the SA Report, but aims to present the information required of the SA Report nonetheless); however, interpretation of Schedule 2 is not straightforward. Table A links the structure of this report to an interpretation of Schedule 2 requirements, whilst Table B explains this interpretation.

Table A: Questions answered by this SA Report, in-line with an interpretation of regulatory requirements

		Questions answered	As per regulations... the SA Report must include...
Introduction		What's the plan seeking to achieve?	<ul style="list-style-type: none"> An outline of the contents, main objectives of the plan and relationship with other relevant plans and programmes
		What's the sustainability 'context'?	<ul style="list-style-type: none"> Relevant environmental protection objectives, established at international or national level Any existing environmental problems which are relevant to the plan including those relating to any areas of a particular environmental importance
	What's the SA scope?	What's the sustainability 'baseline'?	<ul style="list-style-type: none"> Relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan The environmental characteristics of areas likely to be significantly affected Any existing environmental problems which are relevant to the plan including those relating to any areas of a particular environmental importance
		What are the key issues and objectives that should be a focus?	<ul style="list-style-type: none"> Key environmental problems / issues and objectives that should be a focus of (i.e. provide a 'framework' for) assessment
Part 1	What has plan-making / SA involved up to this point?		<ul style="list-style-type: none"> Outline reasons for selecting the alternatives dealt with (and thus an explanation of the 'reasonableness' of the approach) The likely significant effects associated with alternatives Outline reasons for selecting the preferred approach in-light of alternatives assessment / a description of how environmental objectives and considerations are reflected in the draft plan
Part 2	What are the SA findings at this current stage?		<ul style="list-style-type: none"> The likely significant effects associated with the draft plan The measures envisaged to prevent, reduce and offset any significant adverse effects of implementing the draft plan
Part 3	What happens next?		<ul style="list-style-type: none"> A description of the monitoring measures envisaged

Table B: Questions answered by this SA Report, in-line with regulatory requirements

<u>Schedule 2</u>	<u>Interpretation of Schedule 2</u>	
<i>The report must include...</i>	<i>The report must include...</i>	
(a) an outline of the contents, main objectives of the plan and relationship with other relevant plans and programmes;	An outline of the contents, main objectives of the plan and relationship with other relevant plans and programmes	i.e. answer - <i>What's the plan seeking to achieve?</i>
(b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan	Any existing environmental problems which are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance The relevant environmental protection objectives, established at international or national level	i.e. answer - <i>What's the 'context'?</i>
(c) the environmental characteristics of areas likely to be significantly affected;		
(d) any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;	The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan'	i.e. answer - <i>What's the 'baseline'?</i>
(e) the environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan and the way those objectives and any environmental considerations have been taken into account during its preparation;	The environmental characteristics of areas likely to be significantly affected	
(f) the likely significant effects on the environment including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;	Any existing environmental problems which are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance	i.e. answer - <i>What are the key issues & objectives?</i>
(g) the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan;	Key environmental problems / issues and objectives that should be a focus of appraisal	
(h) an outline of the reasons for selecting the alternatives dealt with and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information	An outline of the reasons for selecting the alternatives dealt with (i.e. an explanation of the 'reasonableness of the approach')	i.e. answer - <i>What has Plan-making / SA involved up to this point?</i> [Part 1 of the Report]
(i) a description of the measures envisaged concerning monitoring.	The likely significant effects associated with alternatives, including on issues such as... ... and an outline of the reasons for selecting the preferred approach in light of the alternatives considered / a description of how environmental objectives and considerations are reflected in the draft plan.	
	The likely significant effects associated with the draft plan	i.e. answer - <i>What are the assessment findings at this current stage?</i> [Part 2 of the Report]
	The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects of implementing the draft plan	
	A description of the measures envisaged concerning monitoring	i.e. answer - <i>What happens next?</i> [Part 3 of the Report]

i.e. answer - *What's the scope of the SA?*

Table C presents a discussion of more precisely how the information within this report reflects the SA Report requirements (N.B. to reiterate this report is not the SA Report).

Table C: 'Checklist' of how and where (within this report) regulatory requirements are reflected.

Regulatory requirement	Information presented in this report
Schedule 2 of the regulations lists the information to be provided within the SA Report	
a) An outline of the contents, main objectives of the plan or programme, and relationship with other relevant plans and programmes;	Section 2 ('What's the plan seeking to achieve') presents this information.
b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;	These matters were considered in detail at the scoping stage, which included consultation on a Scoping Report, which was updated post consultation and is now available on the website.
c) The environmental characteristics of areas likely to be significantly affected;	The outcome of scoping was an 'SA framework', and this is presented – in an updated form - within Section 3 ('What's the scope of the SA').
d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance...;	Messages highlighted through context and baseline review are also presented within Appendix III.
e) The environmental protection, objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental, considerations have been taken into account during its preparation;	<p>The Scoping Report presents a detailed context review and explains how key messages from the context review (and baseline review) were then refined in order to establish an 'SA framework'.</p> <p>The SA framework is presented within Section 3. Also, messages from context review are presented within Appendix III.</p> <p>With regards to explaining "<i>how... considerations have been taken into account</i>", Section 7 explains the Council's 'reasons for supporting the preferred approach', i.e. explains how/why the preferred approach is justified in-light of alternatives appraisal (and other factors).</p>
f) The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.	Section 6 presents alternatives appraisal findings (in relation to the spatial strategy, which is the 'stand-out' plan issue and hence that which should be the focus of alternatives appraisal/consultation), whilst Section 9 presents an appraisal of the Draft Plan. All appraisal work naturally involved giving consideration to the SA scope, and the need to consider the potential for various effect characteristics/dimensions.
g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	A range of recommendations are made as part of the draft plan appraisal presented in Section 9.

Regulatory requirement	Information presented in this report
<p>h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;</p>	<p>Sections 4 and 5 deal with ‘reasons for selecting the alternatives dealt with’, with an explanation of reasons for focusing on certain issues / options. Also, Section 7 explains the Council’s ‘reasons for selecting the preferred option’.</p> <p>Methodology is discussed at various places, ahead of presenting appraisal findings.</p>
<p>i) description of measures envisaged concerning monitoring in accordance with Art. 10;</p>	<p>Section 11 presents measures envisaged concerning monitoring.</p>
<p>j) a non-technical summary of the information provided under the above headings</p>	<p>The NTS is a separate document.</p>
<p>The SA Report must be published alongside the draft plan, in-line with the following regulations</p>	
<p>authorities with environmental responsibility and the public, shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme (Art. 6.1, 6.2)</p>	<p>This Interim SA Report is published alongside the Draft Plan, in order to inform the current consultation and next steps.</p>
<p>The SA Report must be taken into account, alongside consultation responses, when finalising the plan.</p>	
<p>The environmental report prepared pursuant to Article 5, the opinions expressed pursuant to Article 6 and the results of any transboundary consultations entered into pursuant to Article 7 shall be taken into account during the preparation of the plan or programme and before its adoption or submission to the legislative procedure.</p>	<p>This Interim SA Report will be taken into account when preparing the Proposed Submission Plan, alongside consultation responses received on the Draft Plan and this Interim SA Report.</p>

Appendix II: Maps of the plan area

The appendix presents the maps referenced in Section 5, and specifically under the discussion of ‘Broad issues / options’ that served as one of the inputs to the establishment of reasonable spatial strategy alternatives.

Figure A: Core Strategy Development Locations

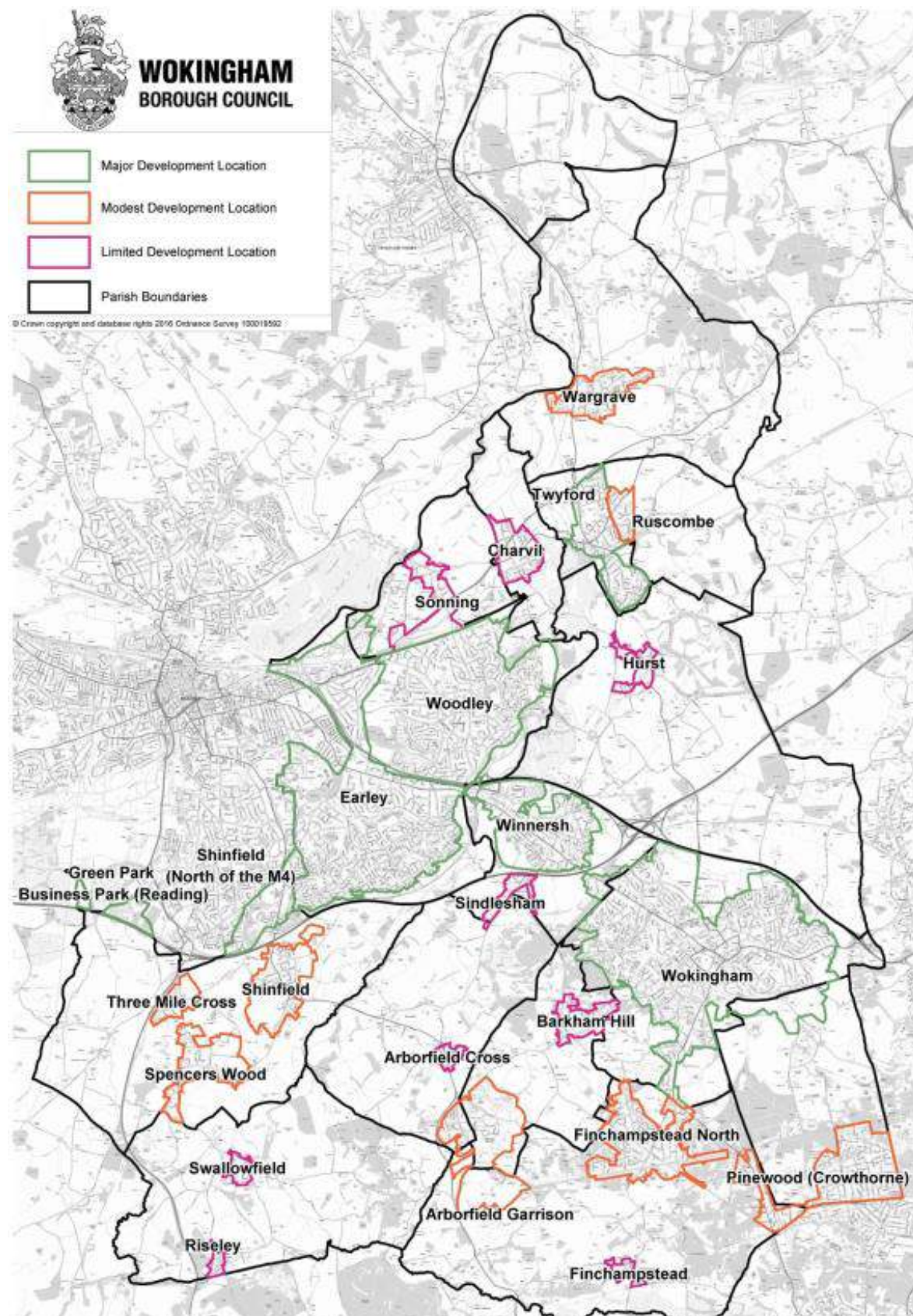
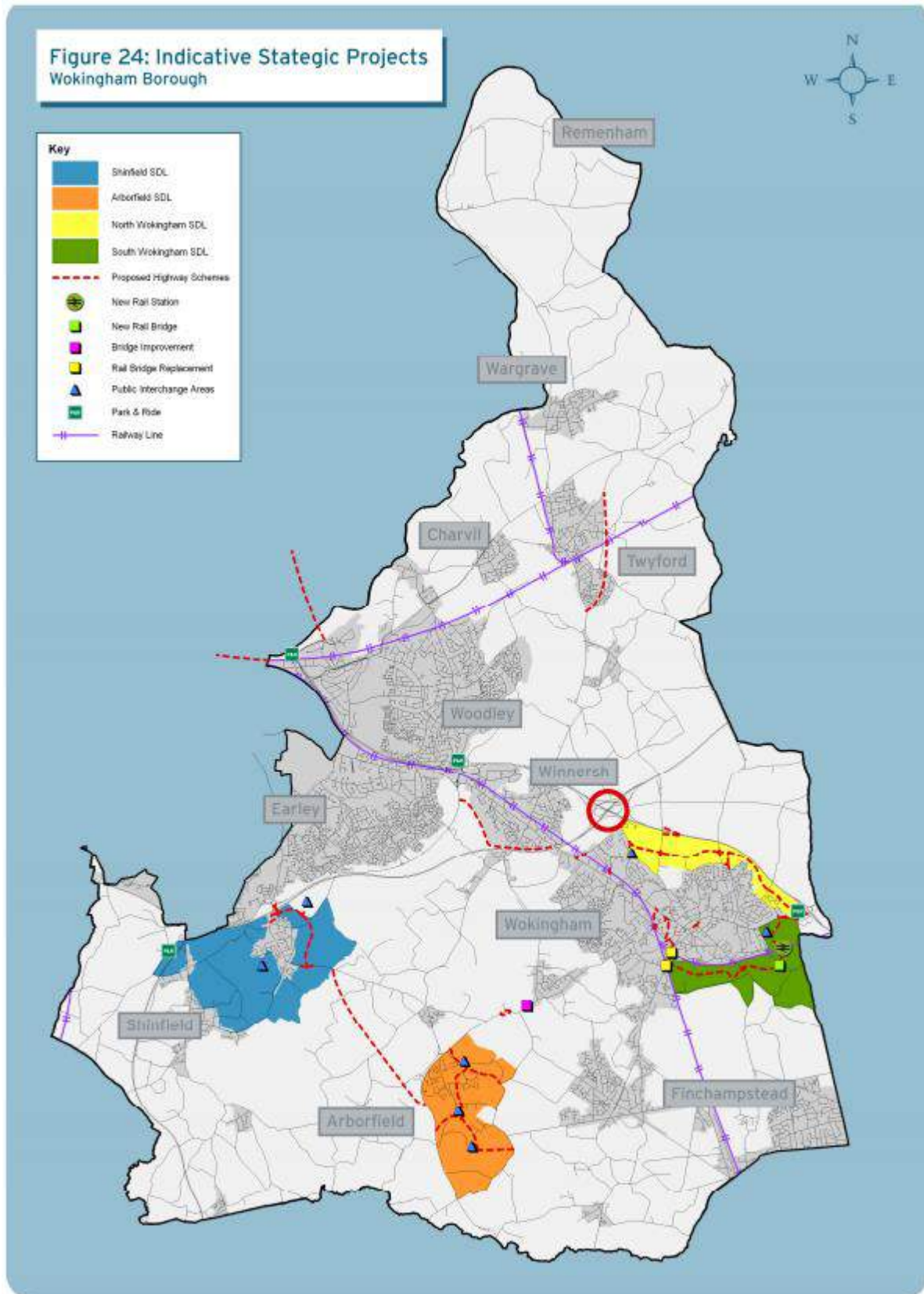


Figure B: Core Strategy Strategic Development Locations²⁷



²⁷ Also see <https://www.wokingham.gov.uk/major-developments/overview-of-major-developments>

Figure C: Findings of the Settlement Hierarchy Assessment (2018)

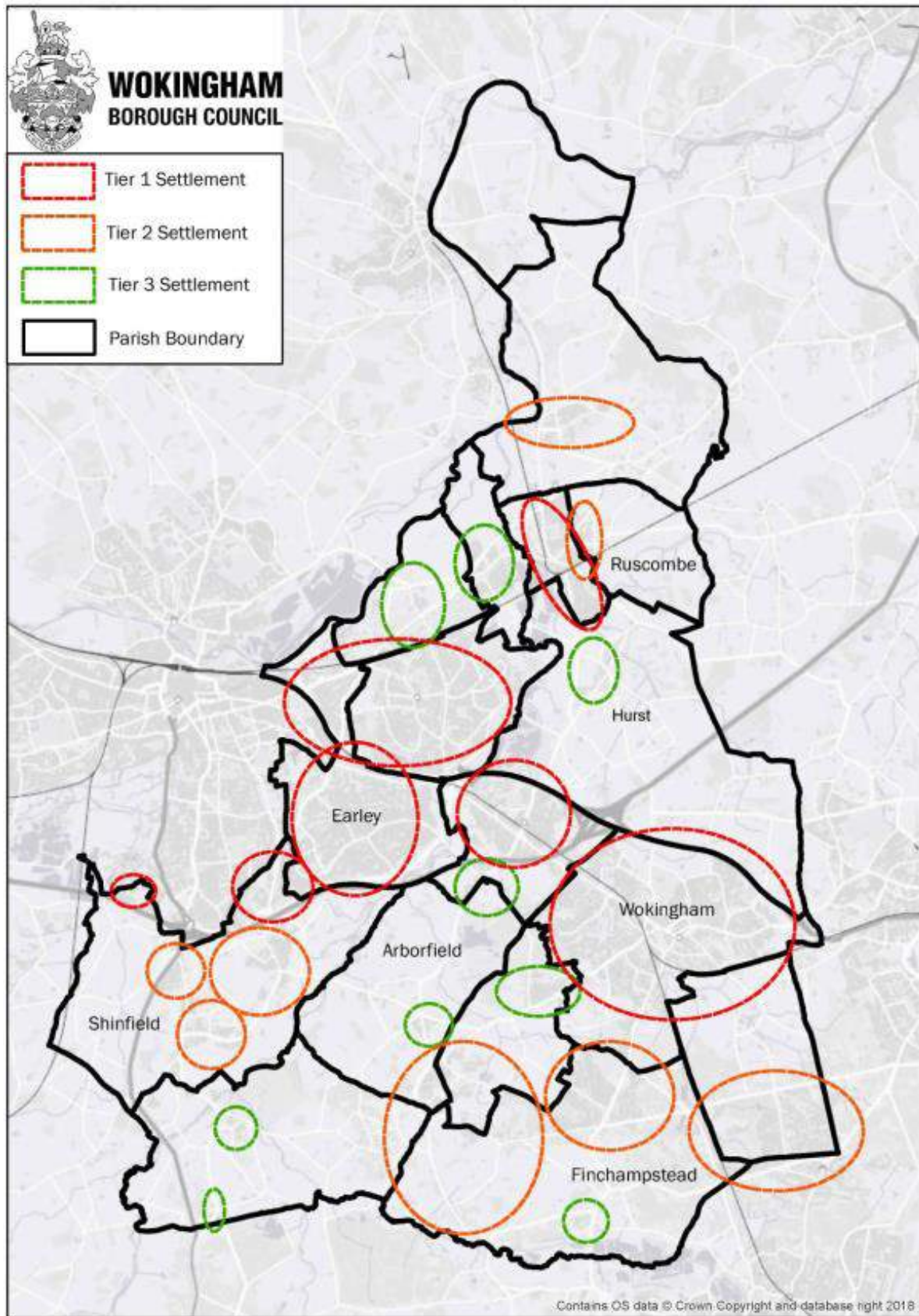


Figure D: West Berkshire Strategic Planning Framework key diagram (extract)

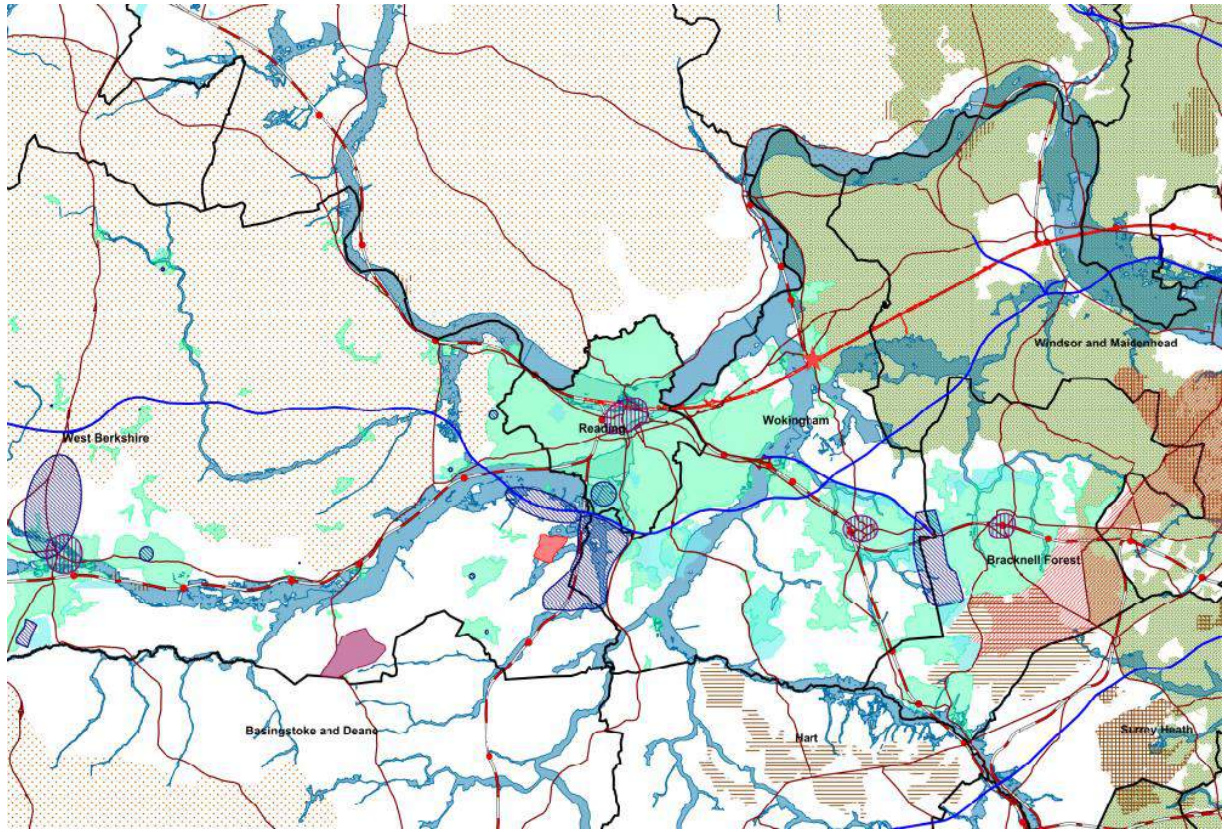
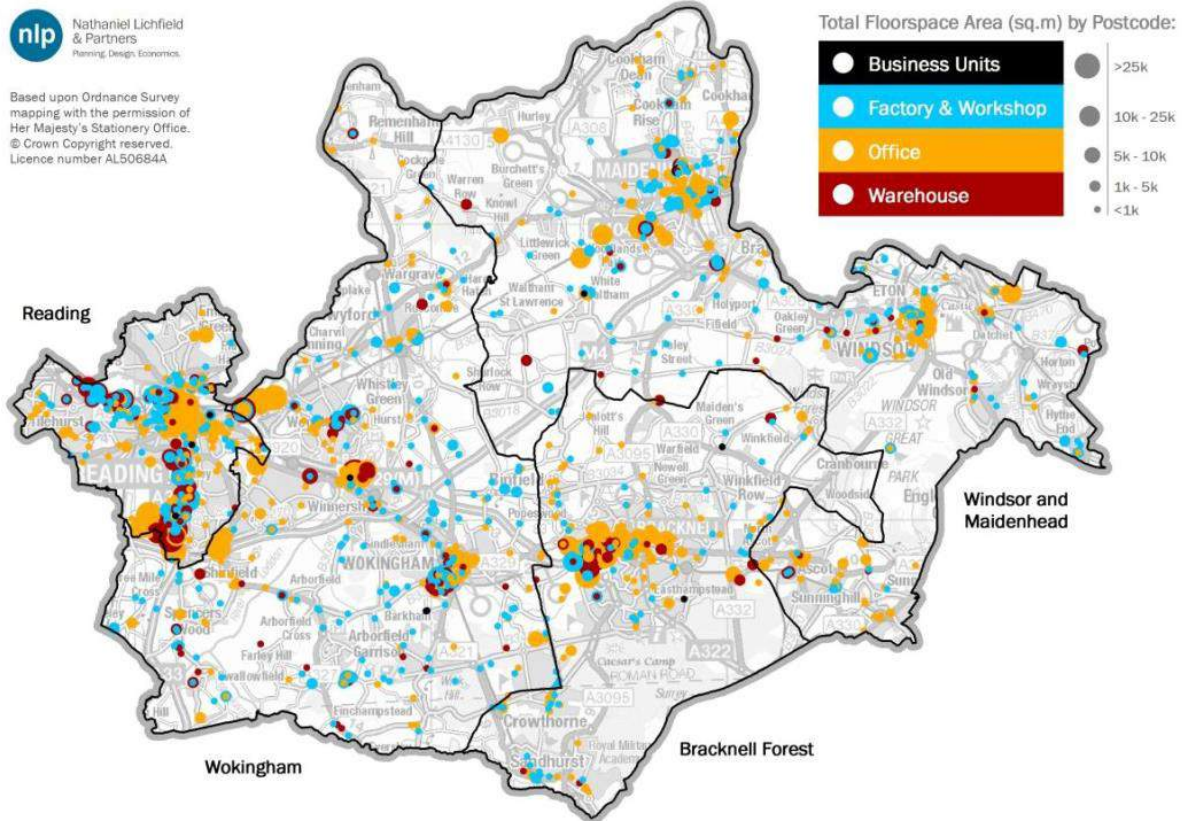


Figure E: Employment floorspace 2010



Source: VOA 2010 / NLP analysis

Appendix III: The SA Scope

This appendix supplements Section 3 by presenting a high-level discussion of key issues and opportunities under each of the SA topic headings that comprise the back-bone of the SA framework.

Accessibility

Community infrastructure

Community facilities provide an important service to the local community. The ability to access meeting places, healthcare, libraries, local shops, cultural buildings, public houses, places of worship, sports venues and youth provision, forms a vital part of the quality of life for residents. There are a variety of community facilities across the Borough, that form an essential part of local settlements and centres to meet day to day needs and support sustainable, cohesive and integrated communities. For example, Finchampstead Baptist Church Centre is used by the church, youth groups, and a variety of other classes, with facilities including a sports hall, library and café.

National policy provides strong protection for community facilities, and local planning policies will have an important role to play ensuring that community facilities are provided in an effective and accessible way. Existing services must be protected as much as possible, whilst making sure that they are 'fit for purpose'. It is important that facilities keep pace with new development so that both existing and new communities have good access to community facilities. New development can put additional pressure on infrastructure and may create the need for new facilities and local services, so appropriate developer contributions will be important to fund delivery.

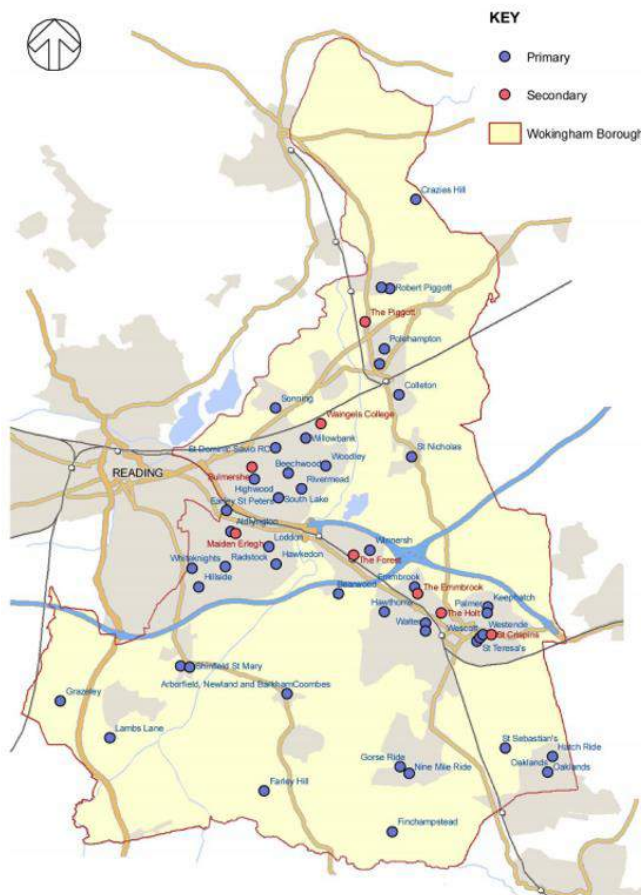
Although the retention of existing community uses is strongly supported, there may be situations where the community use is no longer required/viable. The nomination of a facility as an Asset of Community Value (ACV) is one way of identifying a building or land use that is important to the social wellbeing or interests of the local community. Once listed as an ACV the local community will be informed if listed for sale within a five-year period, allowing the community to enact a Community Right to Bid, and a period of six months to determine whether they can raise the finance to purchase the asset. A list of ACVs is available on the council website.

Open space, sports, recreation and play facilities

National policy recognises the importance of access to high quality open spaces and opportunities for sports and recreation, to the health and well-being of all. Wokingham Borough has a wealth of open space and outdoor recreation facilities, including additional provision delivered through new developments. New developments can provide opportunities to provide, protect and enhance new and existing public open, indoor and outdoor play, sport and recreational facilities, either through on-site measures or by contributing to off-site facilities.

Outdoor play space has a valuable role to enliven, inspire and educate our children and young people. The Play Space Design Guide (2018) supports the Borough Design Guide and Open Space, Sport and Recreation Strategy by providing guidance and specific requirements for the design of play spaces within the Borough, to help raise the quality of playable space.

Figure A: School locations (source: LTP3, 2011)



Air and wider env quality

The planning system has an important role in directing the location of development that may give rise to pollution or other hazards. Pollution can be anything that affects the quality of land (including soils and the subsurface), air or water and that may have an adverse impact on human health, the natural environment or public amenity. Examples of pollution may include but are not limited to; noise, vibration, light, air quality, radiation, gas emission or the degradation of soil and water resources from their natural state.

Pollution, both new and historic, can have a considerable impact on the local environment and on the health, well-being and quality of life enjoyed by individuals and communities within the Borough. The impact of both new and existing sources of pollution must be taken into consideration when locating new development.

Air pollution

National policy highlights the importance of planning policies in helping to sustain and contribute towards compliance with air quality objectives. Pollution in Wokingham primarily relates to pollutants emitted from road transport vehicles, along with other pollutants as specified within the UK Air Quality Strategy. Local Authorities have a duty to declare Air Quality Management Areas (AQMAs) and work towards achieving national air quality objectives in areas where residents are exposed to pollutants in excess of the objectives.

There are three declared AQMAs in the Borough. The Wokingham AQMA covers an area along the M4, as it transects Wokingham encompassing adjacent properties and part of the A329 where it passes under the M4. The two other AQMAs relate to two specific urban areas, the crossroads in Twyford and Wokingham Town Centre.

Noise pollution

Excess noise and vibration can have a harmful impact on sensitive receptors and lead to a loss of amenity in the immediate area of the source of noise pollution. Noise pollution must be a consideration where development sites are affected by a non-steady noise source, commercial or industrial noise, or noise that does not follow a typical diurnal pattern.

Light pollution

Artificial lighting is capable of providing a safe secure environment where it is used appropriately; however, it is critical that there is no significant adverse impact on the amenity of the surrounding location. National planning policy states that that planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

Excessive light levels, ill-considered design schemes or poorly located light sources can all result in significant issues to sensitive receptors. These issues associated with light pollution include but are not limited to sky glow, glare and light spill/trespass. As an authority with a significant rural areas Wokingham Borough is highly sensitive to this form of pollution, which can affect the perceptual landscape of the countryside including its tranquillity and dark skies. Light pollution can disturb residents resulting in sleep deprivation and associated health problems.

Biodiversity

Wokingham Borough has a range of landscapes, as outlined in the Landscape Character Assessment (LCA), ranging from elevated chalk plateaus and open and settled clay farmlands, to coniferous plantations and heathland. Three notable watercourses flow through the Borough with the River Thames defining the northern boundary and the River Blackwater the southern boundary. The Blackwater is a tributary of the River Loddon which flows through the Borough to its confluence with the River Thames near Wargrave. During the medieval period much of the Borough was part of the Windsor Forest, one of the great royal hunting grounds of England. The historically forested nature of the Borough is reflected in the place names with many of the principle settlements names such as Woodley, Whistley Green and Riseley containing the 'leah' sound associated with woodland clearings. The Borough contains 7 Biodiversity Opportunity Areas, which have been identified as areas with the highest density of existing assets where there is the greatest opportunity to deliver strategic benefits through habitat creation and restoration.

There are a four nationally designated Sites of Special Scientific Interest (SSSIs), Stanford End Mill and River Loddon SSSI, Longmoor Bog SSSI, Heath Lake SSSI and the Lodge Wood & Sandford Mill SSSI. At a local level there are over 100 Local Wildlife Sites (LWS) with a further seven sites currently proposed for LWS status. The Borough is home to a large number of important species including European designated 'Notable and Protected' species such as European Otters.

Green infrastructure is a network of multi-functional green space and other green features, both urban and rural, which are essential for providing quality of life, wellbeing and environmental benefits for communities. Green infrastructure networks include, but are not limited to: countryside; open spaces; river valleys, corridors and wetlands; Sites of Urban Landscape Value (SULVs); Sustainable Drainage Systems (SuDS); landscape features; 'green' corridors, including ecological corridors; Suitable Alternative Natural Greenspace (SANG); allotments; amenity areas within developments; informal recreation areas; green routes and green route enhancement areas; country parks and public rights of way. Blue infrastructure is more specifically linked to water, including main rivers, pools, ponds, ordinary watercourses and SuDs, which often work in tandem with green infrastructure.

The Borough has a wide variety of green corridors, mainly associated with the three low land river valleys in the Borough: Thames Valley, Loddon Valley and the Blackwater Valley. They make a significant contribution to the character of the landscape and form an important part of the Borough's network of green and blue infrastructure, connected by a series of Greenways and Green Routes. In addition, the Borough also contains a wealth of parks and gardens, riverside paths, woodlands, allotments, common land and designated sites of nature importance, which provide vital ecosystem services and provide green spaces for informal / formal recreation.

The council's Greenways Strategy sets out the network of traffic free commuting and leisure routes connecting existing and new settlements, with a particular focus on the four existing Strategic Development Locations. Wherever possible, Greenways will have a hard, permeable surface which ensures accessibility for all users, including people with visual and physical impairments. A number of these routes have been delivered, which consist of existing public footpaths, byways and bridleways, with the aim of creating a network of connected traffic-free routes across the Borough.

This network of routes will be further expanded to ensure future development is well integrated and connected across the Borough. The establishment of the River Loddon Long Distance Path (LDP) will provide informal recreation links in the form of a footpath and bridleway to link the Thames Valley Path at Wargrave to the Blackwater Valley Path at Swallowfield. The River Loddon LDP will also link between many Greenway routes, in particular those greenways connecting to the SDLs at Arborfield Garrison and South of the M4. The establishment of the riverside footpath and cycleway along the Emm Brook will also provide for informal recreation links to connect in with Wokingham Town and Dinton Pastures Country Park at Winnersh.

Biodiversity net gain

Net gains in biodiversity means improvement through habitat creation and enhancement, with the aim of leaving biodiversity in a better state than before. This helps to deliver high quality sustainable development through the plan led system. Government, notably in national planning policy and the 25 Year Environment Plan, support the principle of net gain. DEFRA has recently consulted on making biodiversity net gain a mandatory element of the planning system, which the government intend to include in a forthcoming Environment Bill. This Bill is also likely to include duties for local planning authorities to prepare Local Nature Recovery Strategies (LNRS).

The mitigation hierarchy must be applied as part of any biodiversity accounting process to ensure any potential harm is avoided. If harm cannot be avoided it must be reduced through appropriate mitigation measures. If any residual harm still remains after avoidance and mitigation then compensation can be sought through biodiversity offsetting on-site, or if necessary off-site. Biodiversity net gain does not apply to statutory designated or irreplaceable habitats, where any adverse impacts should be avoided as a general principle.

Habitat and biodiversity networks

National policy is clear that establishing coherent ecological networks that are resilient to current and future pressures can play an active role in enhancing the natural and local environment. Biodiversity cannot be preserved in nature reserves and wildlife sites alone. It is fundamentally reliant on the matrices of habitats across the wider landscape that provide stepping stones and wildlife corridors between them.

A coherent ecological network relies on protection of both key wildlife sites and habitat that provides functional connectivity. Nature recovery networks can be based on general ecological permeability and wildlife corridor principles but can also include a strategic landscape level approach to an individual species or habitat of principal importance.

Nature recovery networks may identify BOAs or Living Landscapes with specific objectives for the creation, restoration, or reconnection of key habitats of principal importance. Wildlife corridors within a network can be in the form of open spaces, residential gardens, grass verges, retained hedgerows, ditches, rivers, or streams.

Thames Basin Heaths SPA

The Thames Basin Heaths Special Protection Area (SPA) is a network of heathland sites that provides a habitat for important species of ground nesting birds. The SPA is designated under European Directive 79/409/EEC and provides a network of heathland sites that provide a habitat for important species of ground nesting birds, including the Dartford Warbler, Nightjar and Woodlark. The SPA sites do not fall or extend into Wokingham Borough, but the five kilometre 'zone of influence' covers a large part of the south of the Borough.

Natural England has advised the Council, along with the other ten local authorities surrounding the SPA that the integrity of the SPA has the potential to be adversely affected by new development, through urbanisation, recreational activity and air pollution. The provision of appropriate avoidance and mitigation measures, Suitable Alternative Natural Greenspace (SANG) together with contributions towards Strategic Access Management and Monitoring (SAMM) would address the recreational disturbance issue to the Thames Basin Heaths SPA. These measures are unlikely to be acceptable unless agreed with Natural England in accordance with South East Plan policy NRM6.

The council has successfully established a network of SANGs across the Borough through previous development strategies, including through the four Strategic Development Locations (SDLs) identified in the Wokingham Borough Core Strategy. The council maintains a live list of SANGs, including their location and capacity, in the Borough which is published on the council website.

Climate change adaptation

Adaptation is about making sure future communities can live, work, rest and play in a comfortable and secure environment in the face of inevitable climate change. Taking action now to help successfully achieve adaptation measures would help to reduce vulnerability for people, businesses, services and infrastructure to climate change. Adaptation measures need to be built into all new developments to ensure the sustainable development of housing, businesses and the economy.

The impacts of climate change are predicted to increase over time, with winters getting warmer and wetter, while summers become hotter and drier. It is expected that there will be more extreme weather leading to impacts including intense rainfall and floods, heatwaves, droughts and increased risk of subsidence. These impacts will affect people's lives, homes and businesses as well as essential services and supplies such as transport, hospitals, water supply and energy. There will also be significant impacts on biodiversity and the natural environment.

Given the anticipated level of growth of the Wokingham Borough over the coming years, it is imperative that this growth takes place in a sustainable manner incorporating climate change adaptation technologies. Buildings, services and infrastructure need to be able to easily cope with the impacts of climate change. Part of this ability to cope relates to ensuring that new development is designed to adapt to more intense rainfall, the possibility of flooding, plus heat waves and droughts. The design of developments, including the use of materials, therefore needs to more carefully consider matters such as shading, insulation and ventilation, surface water runoff and storage and the use of appropriate tree and other planting.

Flood Zones

Flood Zones are the starting point for determining how to consider the implications of flood risk, and the sequential test. The Flood Zones refer to the probability of fluvial (river) flooding only. Flood Zone 2 (Medium Probability) and Flood Zone 3 (High Probability) are shown in Figure B. The Strategic Flood Risk Assessment (SFRA) (2019) sub-delineates Flood Zone 3 into 'high probability' (Zone 3a) and the 'functional flood plain' (Zone 3b).

There is also a need to take into account the impact of surface water flooding and drainage, ground water and other sources of flood risk. National policy is clear that local planning authorities should ensure that when determining planning applications, flood risk is not increased elsewhere.

On and off-site measures can help to reduce flood risk or even improve existing conditions. This can include showing how the proposal retains overland flow routes.

A Flood Risk Strategy for the Borough is in preparation.

Figure B: Fluvial flood zones affecting Wokingham Borough and surrounding areas²⁸



Sustainable drainage

The use of well designed, constructed and maintained Sustainable Drainage Systems (SuDS) ensures a more efficient and resilient drainage system, and also helps to manage flood risk, improve the wider water catchment and improve resilience to the effects of climate change. Sustainable drainage is therefore integral to a development scheme. SuDS should be designed to meet national standards introduced through the Flood and Water Management Act 2010 to ensure the future sustainability of the drainage system.

SuDS can help to reduce the overall amount of rainfall being discharged to the drainage system from new development and help to reduce the Borough's susceptibility to surface water flooding. The approach is consistent with the Strategic Flood Risk Assessment and the Environment Agency Catchment Flood Management Plans. The Water Cycle Study – Phase 1 Scoping Study further supports the use of SuDS to manage water run off effectively.

The adoption and maintenance of SuDS is the responsibility of Wokingham Borough Council as the Lead Local Flood Authority (LLFA) and SuDS approving body. The council's SuDS Strategy (2016) contains guidance for the design and application of SuDS in the Borough, to assist developers designing schemes across varying scales. The Strategy is supported by the SuDS Technical Guide (2016) which sets out the technical requirements and expectations for SuDS in the Borough. Importantly, SuDS can support recreational opportunities and open space/green infrastructure, support climate change resilience through adaptation and mitigation, in addition to environmental benefits, such as water quality and biodiversity enhancements.

Climate change mitigation

Wokingham Borough Council declared a climate emergency on 18th July 2019, committing to playing as full a role as possible – leading by example as well as through encouragement – in achieving a carbon neutral Wokingham Borough by 2030. A corporate action plan is being prepared to set out recommendations to help achieve a carbon neutral Borough.

²⁸ Figure sourced from <https://flood-warning-information.service.gov.uk/long-term-flood-risk/map>

Sustainable design and construction

Given the scale of residential development in Wokingham Borough, achieving the aim of becoming carbon neutral will not be possible without that development having a minimal impact on carbon emissions. A revised Sustainable Design and Construction SPD to be produced in 2020 will contain more detail on achieving this requirement.

The Government has sought to consolidate the wide range of standards required for new housing across the country. The approach has been to rely on minimum requirements in the Building Regulations for most matters, but to set a small number of 'optional' national standards over and above the Building Regulations minima, which local authorities can choose to apply in their areas. These 'optional' standards can only apply where a policy is included in a local plan.

There is support for the use of BREEAM standards. These standards cover a wide range of matters including building fabrics and materials, energy and water use, amenity areas and ecology, waste recycling, the location and accessibility of developments, daylighting, sound insulation etc.

As the current BREEAM standards give high scores in urban areas to using previously developed land that is close to services, amenities and public transport routes, most major developments in Wokingham Borough will naturally score relatively highly before any consideration of the impact of development itself. As such the council believes that development should mitigate effects further by reducing greenhouse gas and other polluting emissions and providing higher energy conservation, hence the requirement for BREEAM 'Excellent' ratings. Minor development proposals will be required to meet BREEAM 'Very Good'

Low carbon and renewable heat and/or power generation

In light of the declared climate emergency the Council must explore options for low carbon and renewable heat and/or power generation. This will involve both exploring opportunities that might be realised independently of the proposed spatial strategy (e.g. wind turbines and solar farms), and options that are dependent on the proposed spatial strategy option that is supported, notably heat networks.

Opportunities that can only be realised through selection of an appropriate spatial strategy are of greatest relevance to the Local Plan. Government guidance describes heat networks as follows:

"A heat network – sometimes called district heating – is a distribution system of insulated pipes that takes heat from a central source and delivers it to a number of domestic or non-domestic buildings. The heat source might be a facility that provides a dedicated supply to the heat network, such as a combined heat and power plant; or heat recovered from industry and urban infrastructure, canals and rivers, or energy from waste plants."

Communities

Vulnerable people

A key issue is the ageing population, with the proportion aged 65+ is projected to increase by 36% from 2020 to 2036. As the population of the Borough increases and ages, the level of disabilities, health issues and mobility problems amongst the older population and vulnerable communities is projected to increase, along with the specialist housing to address their needs.

There is a need to recognise specific and complex housing needs by providing the opportunity for people to remain in their own homes, with the tools to live independently. Whilst some of this need will derive from an ageing population, they also emerge from the fact that many 'vulnerable people' with other existing needs.

Vulnerable people require the assistance of others for a range of reasons, including mental health problems, learning disabilities, physical and sensory needs, drug or alcohol problems, vulnerability due to age (either younger or older people) and domestic abuse. The council's Housing Strategy supports self-reliance and independent living for residents, which can help reduce the likelihood of vulnerable people living in institutional settings, reducing the need for expensive care services and unnecessary admissions to hospital.

Housing in Multiple Occupation

The conversion and sub-division of buildings into dwellings or multiple occupation can provide additional residential accommodation that makes more efficient use of existing properties. Within Wokingham Borough, HMOs comprise only a small portion of the housing stock and are not generally common. Nonetheless, they can, due to being a relatively low cost housing option, make a positive contribution by meeting a particular type of accommodation need e.g. for students, people on low incomes, or for single young professionals.

Whilst the conversion and sub-division of buildings can make a positive contribution, this can only be achieved where the original property is suitable, and where the cumulative impacts on the wider area and its communities are acceptable. An overconcentration of HMOs in has the potential to lead to fundamental and unacceptable changes to an area's established character.

Permitted development allows the conversion of dwellings to smaller HMOs (i.e. to C4 planning use class) and therefore planning permission is not usually required. However, planning permission is necessary to create HMOs of greater than 6 bedrooms or when permitted development rights have been removed.

In addition to setting planning policy, the council reserves the right to use Article 4 directions for specific areas if sufficient evidence emerges that greater controls on HMO conversions are required.

Licenses nuclear installations

Whilst there are no Atomic Weapons Establishments in Wokingham Borough, there are two licensed nuclear installations located in the adjoining local authority West Berkshire District Council. These are the Atomic Weapons Establishment sites in Aldermaston and in Burghfield. The activities within the AWE Burghfield include final assembly, maintenance and decommissioning of warheads.

Regulation of the AWE Burghfield requires the delineation of detailed and outline emergency planning zones to reduce the potential impact on the public of any accident arising from site operations. Planning Practice Guidance (PPG) provides general advice about the need for consultation regarding development proposals in the vicinity of licensed nuclear installations. This is a requirement of longstanding government policy which is administered by the ONR. The consultation thresholds and zones are agreed locally between the local authorities and the ONR and are kept under review.

The ONR's decision to advise against a particular development will be based on the extent to which the Off-Site Emergency Plan can accommodate the additional population.

Economy

The employment rate in the Borough is well above the UK average, with a lower unemployment rate of 2.5% compared with the rest of the South East (3.1%) and Great Britain (4.1%). Employment in Wokingham Borough is largely based around the service sector, located in the centre of the Thames Valley economy, dominated by the IT, communications and pharmaceutical sectors. Many major international companies, such as Microsoft, Oracle, Pepsico and Johnson & Johnson, are located within the Borough. The various town, district, and local centres within the Borough also play an important role.

Wokingham Borough's residents are highly skilled compared to other areas, with 53.7% holding a NVQ Level 4 or above. The highly educated nature of the Borough's workforce coupled with its exceptional digital and locational connectivity helps to attract and retain high profile companies working in a variety of sectors.

Wokingham Borough is located in the heart of the Thames Valley, recognised as the UK's most productive sub-region. Wokingham plays an important role in the continued economic success of the Thames Valley, and is home to a large number of multinational corporations with expertise across the key sectors of digital technology, life sciences and healthcare, and energy and environment, alongside a highly skilled workforce.

For this economic success to continue in the decades to come, it is important to respond to the changing needs of the labour market. This includes the need for affordable, quality housing, flexible workspaces and an integrated and connected Borough that allows businesses to adapt.

The Thames Valley Berkshire Strategic Economic Plan (SEP) (2015/16 – 2020/21) sets out the prospectus for growth across the sub region, by prioritising access to talented people and bright ideas. A wide range of implementation mechanisms will help to achieve this priority, alongside six main objectives in the SEP.

In addition, The Thames Valley Berkshire LEP, alongside partners, consulted in 2019 on the Berkshire Local Industrial Strategy (BLIS), to build on the government's vision to drive productivity improvements. The BLIS sets out the commitment to become the best of global and local, and to capitalise on the locational advantages of the Thames Valley by accelerating the pace of economic growth. This aspiration can be supported by enhancing productivity, forging stronger alliances across all geographies, and building relationships with investors.

To better understand the functional economic geography of the area, the Thames Valley Berkshire Local Enterprise Partnership (TVBLEP) and the six Berkshire authorities commissioned a study to look into the economic relationships, linkages and flows which characterise the sub-regional economy. The Berkshire Functional Economic Market Area Study (FEMA) (2016) defined three core functional economic market areas, based on a 'best fit' to local authority boundaries due to their consistently strong inter-relationships. Wokingham Borough is located in the Central Berkshire Functional Economic Market Area (FEMA) along with the Boroughs of Bracknell Forest, Reading, and part of Windsor and Maidenhead.

A further report was commissioned to consider the objectively assessed economic development needs of the Central Berkshire FEMA. The Economic Development Needs Assessment (EDNA) (2016) considered the quantitative and qualitative floorspace requirements over the period 2013-2036.

To take account of more recent data, an additional study has been undertaken to assess the future employment land and floorspace requirements in Wokingham Borough, based on jobs forecasts and a specific scenario that relates to the calculation of Local Housing Need. The assessment aligns future jobs forecasts with population growth. The study considers net and gross demand, gross supply and the floorspace requirements across office and industrial uses needed to support economic growth in the Borough over the plan period. 'Industrial' refers to both warehousing and industrial (B1(c), B2 and B8) uses because in practice these activities are interchangeable and routinely require/occupy the same type of space. Given the more recent data this study analyses, the outputs from the EDNA (2016) is not being relied upon to inform the Local Plan Update.

When considering the balance between demand and supply, including future commitments, the study found that there is no quantitative requirement for additional office or industrial land/floorspace as gross supply exceeds gross demand.

The hierarchy of centres

National policy encourages local planning authorities to pursue policies which support the vitality and viability of town centres. This recognises that town centres are at the heart of communities, with policies seeking to manage and facilitate growth. However, the retail sector and the role of town centres is changing and facing challenges more recently. Successful town centres are places which are activity based places where the community can gather; places, where not only shops but complementary uses draw people into the centre. As a result, there is reduced emphasis on protecting all A1 retail uses and a shift towards providing complementary mixed use centres. This has been reflected in the removal of primary and secondary frontages.

To better understand the retail and commercial needs of western Berkshire, the four authorities of Reading, Bracknell Forest, West Berkshire and Wokingham commissioned a study to look into the specific needs of each authority. The Western Berkshire Retail and Commercial Leisure Assessment (2016) sets out the need for comparison and convenience floorspace over the period 2016 – 2036 across the four authorities. The assessment was based on qualitative and quantitative methods, including telephone surveys and the impact of recent development. The assessment calculated the 'need' for 5,000m² of comparison goods (non-food stores such as clothing and electronics) and 12,000 m² of convenience goods (food stores) by 2036.

Since the publication of the assessment, there has been significant progress in the rejuvenation of Wokingham Town Centre, which has provided additional floorspace for retail, leisure and entertainment uses. This has diversified the type of uses available in Wokingham Town Centre, and has increased footfall. Recent monitoring data has shown that further larger scale retail allocations are required to meet the need identified.

Historic environment

Wokingham Borough and its settlements have an expansive history dating back through the modern era into the ancient with settlements occupied for over a thousand years. The settlements of Barkham, Earley, Finchampstead, Hartley (Hartley Court Road), Remenham, Shinfield, Sonning, Swallowfield, Warfield, Wargrave and Whistley are all recorded in the Domesday Book.

There are currently 16 designated conservation areas spread across 12 of the Borough's Parishes. These areas are of special historic or architectural interest where additional efforts are in place to preserve their unique characteristics. The Borough is also peppered with listed buildings ranging in size and prominence, all of which have been given protection because of their special architectural or historic interest. Wokingham Borough also contains many nationally and locally designated historic parks and gardens.

It is important to recognise the close links between objectives relating to landscape and the historic environment. The Borough's Landscape Character Assessment (LCA) includes a discussion on the historic environment for each of the defined landscape character areas.

Housing

Affordability

The 2011 census recorded Wokingham Borough as having 62,474 dwellings, with the predominant housing type detached or semi-detached. Since the 2011 census, the total number of dwellings is predicted to have risen to 67,180²⁹ with the majority of this housing being delivered within the four strategic development locations (SDLs) located at North Wokingham, South Wokingham, South of the M4 and on the site of the former Arborfield garrison.

According to the Land Registry³⁰ the average price of a home in the Borough is £416,612, substantially higher than the England average of £234,853. As a result, the affordability of housing remains an important issue, particularly for younger residents.

Housing mix

National Policy requires local authorities to ensure that their forecast housing needs are met through the provision of a range of housing types and sizes. The 2016 Berkshire SHMA distinguishes between the size mix that may be suitable for new market homes and the size mix for new affordable homes. Households who are able to afford market homes are more likely to buy or rent larger properties, to satisfy a preference for more space and this is supported by Census data from 2011 when 70% of households in the market sector had three or more bedrooms, compared to 35% of households in the affordable sector. These differences mean that it is appropriate to deal with issues of housing mix separately for market and affordable homes.

Housing standards

The government has sought to consolidate a wide range of standards required for new housing across the country. The approach relies on minimum requirements in the Building Regulations for most matters, but to set a small number of 'optional' national standards over and above Building Regulations minimums, which local planning authorities can choose to apply. These cover internal space and accessibility.

These 'optional' standards can only apply where a policy is included in a Local Plan. This policy therefore applies those standards in Reading Borough. It should be noted that the standards are only 'optional' for the local planning authority to apply in their areas, but that once applied, compliance in line with the policy is compulsory. Conditions will be applied to relevant planning permissions to ensure compliance with the policy.

Housing standards help to ensure the health and well-being of our residents. Providing the appropriate types of housing can reduce unhealthy living conditions, injuries in the home and social isolation.

There are two levels of options standards for accessibility:

1. M4(2) of the Building Regulations is for accessible and adaptable dwellings.
2. M4(3) relates more specifically to wheelchair user dwellings.

Internal Space Standards

Ensuring sufficient levels of internal space is essential to the quality of life of residents of the Borough, which is a key element of the vision for the Borough. The Council is concerned that a great deal of development has now taken place under permitted development rights that provides inadequate internal space. This cannot be controlled, but, where it is possible to do so, it is important to ensure that there is as much housing with adequate internal space as possible.

All new housing should have sufficient internal space to cater for a variety of different household needs with the aim of promoting high standards of liveability, accessibility and comfort. Sufficient internal space also supports independent living as live circumstances change and support home working to help minimise the need to travel.

²⁹ ONS Live tables on dwelling stock (14 November 2019) www.gov.uk/government/statistical-data-sets/live-tables-on-dwelling-stock-including-vacants

³⁰ Reported figures in section 3 are from the Land Registry for January 2019 (latest available data). <https://www.gov.uk/government/statistical-data-sets/uk-house-price-index-data-downloads-june-2019>

Affordable housing

Affordable housing is subsidised housing, which enabled the asking price or rent to be set at a lower level than the prevailing market cost. This allows people on lower incomes to access housing, with mechanisms ensuring that the housing remains available to others that might need it in the future.

The Local Housing Need Assessment (LHNA) has identified an overall need for affordable housing of 7,255 dwellings over the period 2018-2036, equivalent to 403 dwellings per annum. This figure includes households currently in the private rental sector, but aspiring to become owner-occupiers, and who may be able to afford housing as their income increases over time; alongside those unable to afford housing.

Government planning policy expects developments of 10 or more dwellings to contribute towards meeting the need for affordable housing through a proportion of the new dwellings being affordable housing, or as an exception off site provision or a financial contribution in lieu.

Several tenures of housing fall within the definition of affordable housing set out in national policy. This includes affordable housing for social rent and shared ownership, alongside other tenures including affordable rent, starter homes and discounted market sales housing. The council has a shared ownership model designed to ensure that homes remain affordable for our residents. Further information is contained the council's Affordable Housing SPD.

There is demand for a variety of unit types and sizes across the Borough. The Local Housing Needs Assessment (2019) has highlighted the need for affordable one bedroom flats and two bedroom houses in particular.

Gypsies and travellers

National policy, set out in the Planning Policy for Traveller Sites (PPTS), is aimed at ensuring *“fair and equal treatment for travellers, in a way that facilitates the traditional and nomadic way of life of travellers while respecting the interests of the settled community.”* It requires local planning authorities to assess the accommodation needs of Gypsies and Travellers and Travelling Showpeople, and to set targets to address this.

National policy, set out in the Planning Policy for Traveller Sites (PPTS), sets out the definition of Gypsies and Travellers for the purposes of planning policy. This definition has created a split in policy definition between those who travel, and those who have permanently ceased to travel.

Local planning authorities are required to identify the types of homes required by Travellers who do not meet the PPTS definition. This is consistent with duties under the Housing Act 1985 (as amended by the Housing and Planning Act 2016). This requires consideration of the needs of people living on sites on which caravans can be stationed. This will include Gypsies and Travellers who, though they may have ceased to travel and therefore no longer meet the PPTS definition, nevertheless continue to have a cultural aversion to bricks and mortar accommodation and therefore require specific, culturally relevant accommodation.

For this reason, the Gypsy and Traveller and Travelling Showpeople Accommodation Needs Assessment (GTAA), which was published in September 2017, established a range of need based on 'Cultural Gypsies and Travellers' – i.e. those with a cultural aversion to living in bricks and mortar accommodation – and the subset of those who fall under the PPTS definition.

The council considers that, in reality, the housing needs of both 'cultural' and 'PPTS' travellers will be met through the same provision and there is likely to be a mix on certain sites of those Gypsies and Travellers who meet the PPTS definition and those that do not.

The GTAA found:

- Need for 26 – 90 permanent pitches for Gypsies and Travellers 2017/18 - 2035/36.
- Need for a transit site comprising 5 pitches (each capable of accommodating 2 caravans).
- No need for Travelling Showpeople plots.

Since the GTAA was published planning permission has been granted for 16 pitches. The remaining need is therefore 10-74 pitches.

Land, soils and natural resources

Agricultural land

A foremost consideration is the need to avoid the loss of agricultural land classed as ‘best and most versatile’ (BMV), which the NPPF defines as that which is grade 1 (highest quality), grade 2 or grade 3a. The nationally available agricultural land quality dataset shows variation in agricultural land quality across the Borough; however, this dataset has low accuracy (indeed, it does not differentiate between grades 3a and 3b) and low spatial resolution (e.g. to the extent that smaller villages are not recognised as urban land) such that it must be used with caution.

Another dataset is available showing agricultural land quality with a much higher degree of resolution and accuracy, on the basis that it reflects the findings of field surveys, namely the “Post 1988” dataset; however, this dataset is very patchy, and covers only a small part of the Borough (see Appendix III).

Figure C: Agricultural land quality to the west of London including Wokingham Borough (highlighted) according to the nationally available dataset (grade 1 = dark blue; grade 2 = light blue; grade 3 = green)³¹

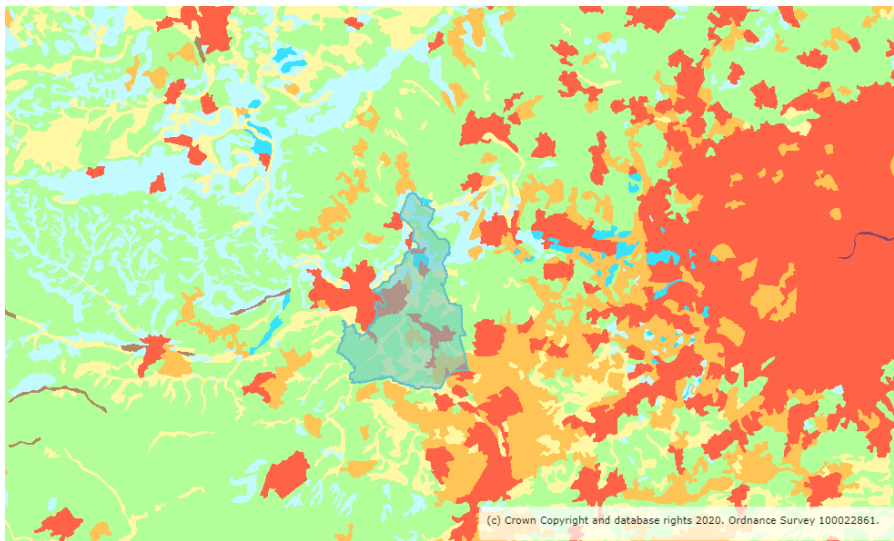
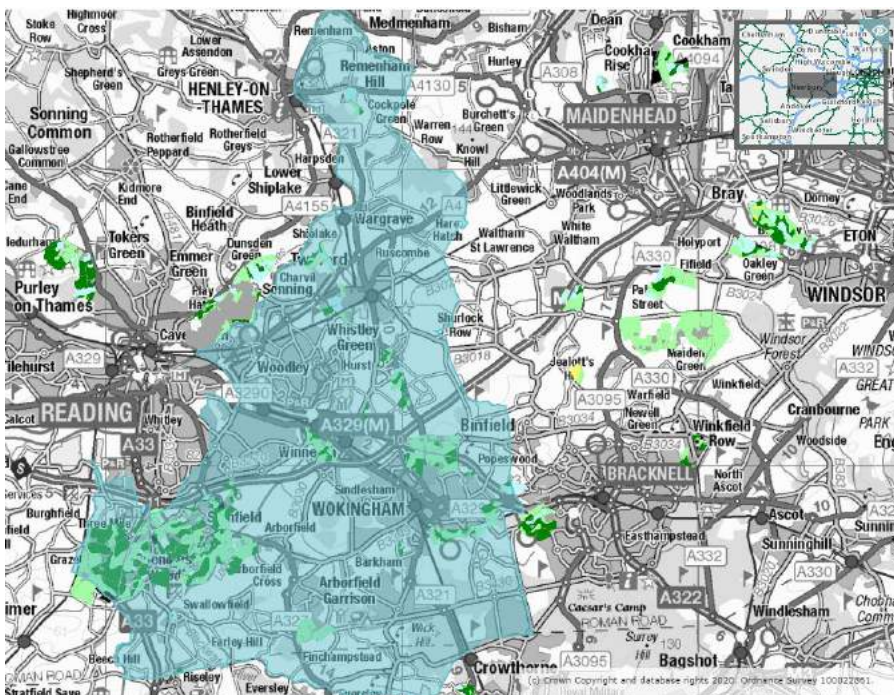


Figure C: Areas of land in Wokingham Borough for which detailed data is available (grade 2 = blue; grade 3a = dark green; grade 3b = light green)



³¹ Figures sourced from www.magic.gov.uk

Waste and minerals

Wokingham Borough Council is working together with Bracknell Forest Council, Reading Borough Council and the Royal Borough of Windsor and Maidenhead to prepare the Joint Central and Eastern Berkshire Minerals and Waste Plan, which will set out the long-term strategy for minerals extraction and waste management across the four authorities. Development proposals relating to aggregate or waste management should therefore meet the requirements of both the Local Plan Update and the Joint Central and Eastern Berkshire Minerals and Waste Plan.

The Joint Minerals and Waste Plan and the Local Plan reflects the government's ambition of zero avoidable waste by 2050. It also aims to support minimisation of waste and management of waste in accordance with the waste hierarchy, which contributes towards the national policy goal of net self-sufficiency within each waste planning authority. New waste facilities delivered as part of new strategic scale development can contribute towards this. New waste facilities may also be suitable on land currently in use for general industry (B2), and storage and distribution (B8). Further information is included in the Joint Minerals and Waste Plan.

Wokingham has a history of mineral extraction with historic aggregate quarries and brick clay works. The principle geological deposits in the Borough are sharp sand and gravel aggregate that are widely used in the construction industry. Minerals are a finite resource that can only be worked where they occur naturally. As a result, to preserve mineral resources it is important to ensure the sterilisation of mineral bearing land through non-mineral developments is avoided. The finite nature of mineral resources is an important consideration when planning for growth, given quantity of materials needed to construct new buildings and infrastructure. Where aggregate is extracted locally, including on development sites, it can reduce vehicle movements.

The Joint Central and Eastern Berkshire Minerals and Waste Plan sets out the position of Mineral Safeguarding Areas (MSAs), as part of Minerals and Waste Safeguarding Areas (MSWA). The location of MSAs are based on data provided by the British Geological Survey (BGS). MSAs indicate the presence of aggregate resources that be taken into consideration from the earliest stage in the planning process. There is no presumption in favour of development proposals for mineral extraction in an MSA, and nor will other development types be precluded.

There is currently no minerals infrastructure in the Borough.

Contaminated Land

National planning policy supports the use of previously developed land, which can enable development in sustainable locations. However, in the presence of contaminated land it is important that the future health and quality of life of existing and future occupiers is not put at risk.

Although Wokingham has never been a heavily industrialised area, there are parts of the Borough with a legacy of potentially contaminated land. Sources of contamination are not restricted to sites where there has been an obvious contaminating land use in the past.

The Wokingham Borough Council Contaminated Land Strategy (2015) sets out how the council intends to manage those sites and the potential risks arising, in order to protect the health of those living and working in the Borough. Following remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act (1990).

Landscape

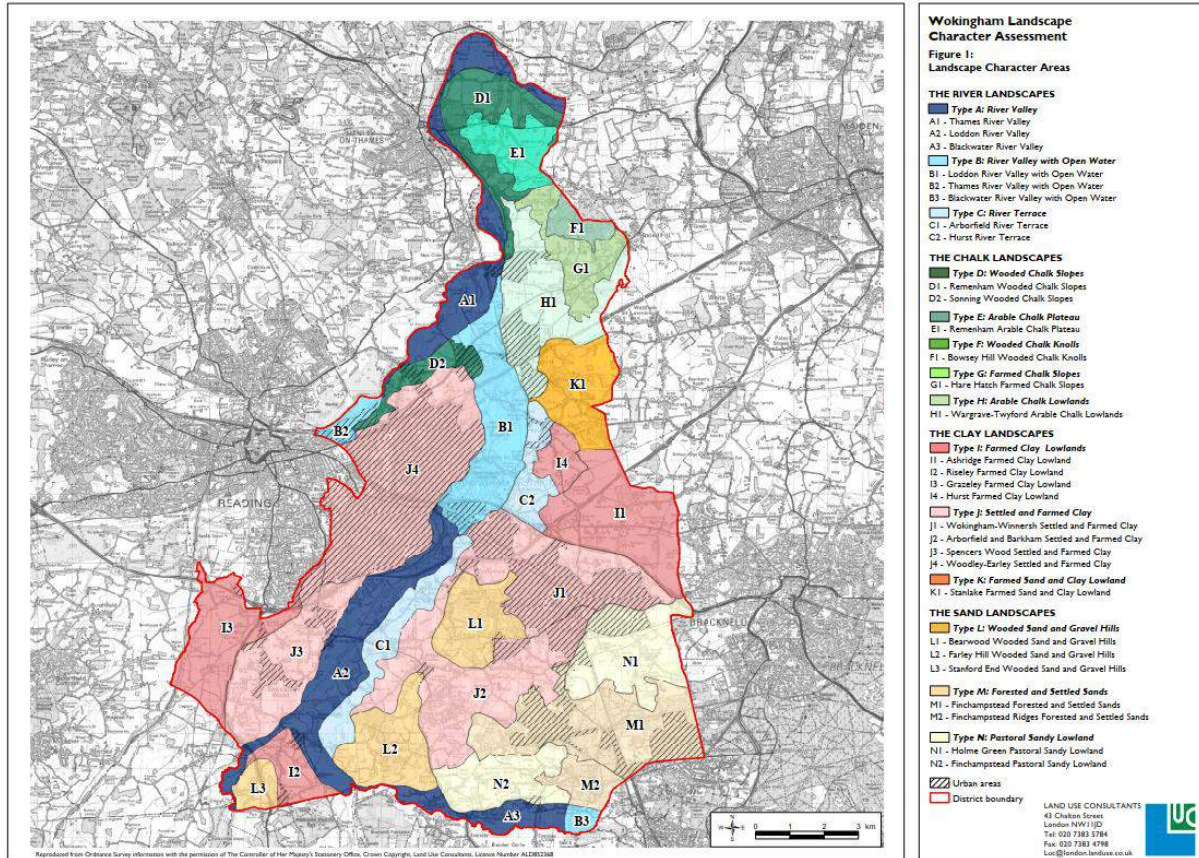
Landscape character

The Landscape Character Assessment (LCA) forms the primary document in relation to the character and valued attributes of the landscape of the Borough, by identifying and describing variations in landscape. The LCA acts as a positive tool to guide land uses and planning, including the management of future change. Figure D presents landscape character areas, highlighting a broad distinction between the following broad landscape types:

- River landscapes
- Clay landscapes
- Chalk landscapes
- Sand landscapes

All landscapes are important, but some will have particular value and exhibit the specific attributes and characteristic landscape features of a specific landscape character area. These landscapes are considered representative of the landscape type or have characteristics that create a strong sense of place. National policy highlights the importance of protecting and enhancing valued landscapes.

Figure D: Landscape character areas in Wokingham Borough



Sites of Urban Landscape Value

Across the Borough, there are a number of open and undeveloped areas within the urban areas of settlements that provide an important contribution to local character, amenity and landscape. Some of these areas also provide an essential role by supporting biodiversity for habitats and species, as well as providing communities with opportunities for informal/formal recreation. These are known as Sites of Urban Landscape Value (SULV). Four SULVs were designated in the Managing Development Delivery Document (MDD) local plan (2014).

The council has reviewed the existing SULVs and considered whether the designation of additional SULVs is justified. The review recommended retaining the existing SULVs. In addition, two other areas of land at Woosehill Meadows and at Cantley Park are recommended for designation.

The SULVs form part of the setting and identity of the settlements of Earley, Wokingham and Woodley. They are primarily open spaces interspersed with and bounded by, mature trees. They also include individual landscape features such as ponds, woodlands and hedgerows. The treed nature of the SULVs provides a softer and semi-rural fringe, which results in some of the built-up areas being barely discernible at both close and distant views.

Watercourses

There are three low land river valleys across the Borough: the Thames, Loddon and Blackwater. They make a significant contribution towards the character of the landscape and form an important part of the Borough's network of green and blue infrastructure, connected by a series of Greenways and Green Routes. They provide vital ecosystem services including in respect of natural flood management and recreation.

The River Thames in particular makes a valuable contribution to the setting and landscape of the Borough, stretching from north east from Thames Valley Park, via Henley-on-Thames towards Remenham. The Thames is a popular location for tourism, recreation and sporting activities, including the annual Henley Regatta, boating activities, and walkers using the popular Thames Path. The Thames Waterway Plan, and Thames River Basin Management Plan, alongside other relevant documents together play an important role in maintaining and enhancing such a valuable natural asset.

The health of all watercourses are under pressure from a variety of issues including abstraction, pollution originating from development, and increased human associated disturbance. The council's latest SuDS Strategy indicates that the assessed surface water bodies and groundwater bodies in the Borough are currently achieving either 'poor' or 'moderate' overall status in line with the WFD (with the exception of Farnborough Bagshot Beds), and none are achieving a 'good' status.

Trees and vegetation

The Borough is fortunate to benefit from areas of mature woodland, including ancient woodland, in addition to trees, ancient or veteran, near veteran trees and hedgerows. This includes several important tree lined routes, a number of which are important historically. Imposing tree lined roads like Wellingtonia Avenue in Finchampstead are an excellent example of the important contribution trees can make to the character of the area. Ancient woodlands, ancient or veteran and near veteran trees cannot be recreated once lost.

Development pressures around areas of woodland have served to highlight the importance of protecting the Borough's existing woodland. Tree Preservation Orders (TPOs) are used to protect specific trees, groups of trees or areas of woodland. Where development may have an impact upon ancient woodland or veteran trees, the Natural England and the Forestry Commission's Standing Advice on Ancient Woodland and Veteran Trees and its associated Assessment Guide applies.

Existing trees and hedgerows can play a vital role in mitigating the impact of climate change, including through shading, carbon storage and a reduction in pollutants. These features can also help to define the landscape and character of the Borough and provide multiple benefits to the urban environment including maintaining and enhancing biodiversity. Trees are an important component of the character of many parts of the Borough, particularly within Conservation Areas and help to reinforce a landscape structure and framework for new development.

Transportation

Benefiting from a large number of desirable transport connections, Wokingham Borough is well connected at both a regional and national level. Train stations in the Borough provide direct services to both London Waterloo and London Paddington via the Reading-Waterloo Line (via Bracknell) and the Great Western Main Line (via Maidenhead and Slough) respectively. Twyford Station will also be a stop for Crossrail, with the Elizabeth Line further linking Wokingham Borough to central London and beyond. Gatwick Airport is also easily accessible via a direct train from Wokingham Station on the North Downs line (via Guildford), and Heathrow Airport is nearby.

The M4 corridor, connecting London with Wales and South West England, runs the width of the Borough, the M3 lies to the south of the Borough and can be reached via the A33, which itself connects Wokingham Borough to Basingstoke. The A4 runs through the Borough connecting it to other centres, such as Reading, Newbury and Maidenhead. The A329M/A3290 also connects Wokingham with both Bracknell and Greater Reading.

As part of the existing developments strategy, the council has been actively investing in strategic infrastructure, including new roads. Infrastructure improvements across the Borough will support development currently underway, or which is expected to be delivered over the longer term. The provision of new roads and transport links will add flexibility to the capacity of our transport network and improve our highways connectivity. Planned improvements to the transport network currently include:

- The Arborfield Cross Relief Road;
- Barkham Bridge Improvements
- Winnersh Relief Road Phase 2
- South Wokingham Distributor Road
- North Wokingham Distributor Road

Additionally the Borough is traversed by a number of Public Rights of Way and both National and Local Cycle Routes furthering the opportunity for active travel, and providing wider health and wellbeing benefits.

Figure E: Strategic transport infrastructure (source: LTP3, 2011)



'Sustainable' transport

To achieve sustainable development it is important that opportunities exist to undertake a higher proportion of travel in ways which have less impact on the environment. The council's Local Transport Plan 3 (LTP3) contains the transport policy for the Borough which reflects the overarching principles of national policy and guidance as well as local priorities. Further work is underway to update the LTP.

There is a need to locate the majority of development where people of all ages can access a wide range of services and facilities by walking and cycling. Manual for Streets (DfT, 2007c) and Manual for Streets 2 (CIHT, 2010) and the Living Streets: A Highways Guide for Developers in Wokingham describe walking neighbourhoods of a maximum of 10 min walk being sustainable and those that would encourage people to walk and cycle. In addition to the consideration of distance to services, the quality of the route to these services is equally important. Walking and cycling routes should be coherent, direct, safe, comfortable and attractive routes otherwise residents will be deterred from walking to these facilities.

Wokingham Borough has one of the highest car ownership rates in England. Delivering developments which offer a range of high quality and easily accessible transport choices is essential to facilitate modal shift and reduce reliance on private cars and associated congestion and environmental impacts. The layout of proposed development should prioritise pedestrians and cyclists and enable them to move easily between places both within and beyond the site. Particular regard should be had to links to train stations and bus stops, local shops and community facilities, and leisure and education facilities.

Enhancement of public transport provision could include increased frequencies and improved integration between bus and rail routes together with the provision of new stops or routes. The council will look towards proposals contributing towards solutions which enhance the sustainability of the site together with the location generally. Good public transport services are those that meet the following requirements:

- a) At least a thirty-minute service frequency during the period 7:00 to 19:00 Monday to Saturday; and
- b) At least an hourly service frequency, but ideally a thirty-minute frequency, on Sundays and outside the above hours.

The council is committed to promoting transport innovations, encompassing varied initiatives and interventions, like autonomous vehicles, electric vehicles and associated charging infrastructure, delivery hubs, bike or car sharing, etc. There will be advances in technology over the course of the plan period and development proposals are encouraged to explore and evidence how new technologies and ideas can contribute to the sustainability of schemes.

Electric vehicles

Technology and innovation is an increasingly important consideration, for example, the UK is already a leader in Europe in terms of electric vehicle manufacture and uptake with 1 in every 8 zero emission cars bought in Europe in 2017 being built in the UK (Road to Zero Strategy (2018)).

Electric and hybrid vehicle ownership is increasing, and likely to become more prevalent over the plan period. One of the principal barriers to increased use of low-emissions vehicles is the lack of supporting infrastructure and in particular, charging facilities at residential properties. It is therefore important that provision of adequate electric vehicle charging facilities is designed into development proposals from the outset, especially residential developments. A number of electric vehicle charging facilities have been installed across the Borough, notably following the regeneration of Wokingham Town Centre.

Where developments propose new car parking, provision of charging facilities will be provided in accordance with the latest standards. The council's Local Validation List requires proposals for all major development to submit an Electric Vehicle Charging Strategy. This should include details relating to on-site infrastructure, installation of charging points and consider the future proofing of the site. This will be considered on a case-by-cases basis, with agreement from the council prior to commencement of development. It is much more cost effective if provision is made from the outset of new development, thereby avoiding costly retrofitting.

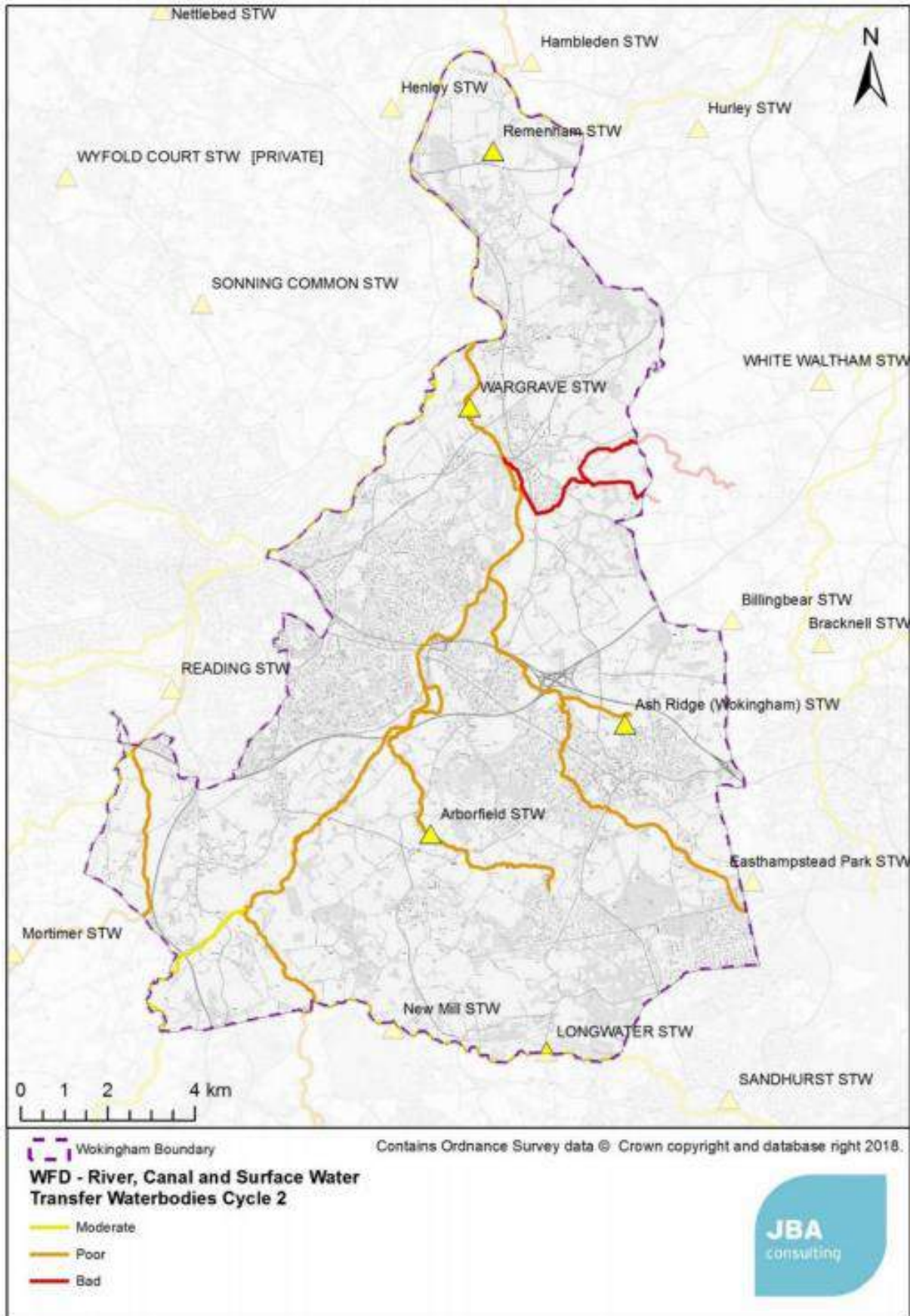
Water

Issues are explored in detail through the Wokingham Borough Water Cycle Study (WCS) Scoping Report (January 2019) under the following headings:

- water resources;
- water supply infrastructure;
- wastewater collection infrastructure;
- wastewater treatment capacity;
- water quality;
- flood risk from additional foul flow;
- odour from WWTW; and
- environmental constraints.

Two primary considerations for the Local Plan relate to enabling and requiring standards of water efficiency in new developments and ensuring that growth is directed to locations where there is waste water treatment capacity, or the potential to deliver upgrades to capacity, such that there is a low risk of capacity breaches, i.e. water pollution events. In respect of water efficiency, the WCS discusses the justification for achieving standards designed to ensure 110 litres of water use per person per day. In respect of wastewater treatment, the WCS discusses the existing capacity and potential for upgrade at all of the wastewater treatment works that serve the Borough – see Figure F, which also identifies one water course within the Borough as failing to meet WFD quality standards.

Figure F: Wastewater treatment works and achievement of WFD water quality standards



Appendix IV: Comparative appraisal of strategic site options

Introduction

This appendix presents a comparative appraisal of the seven strategic site options introduced at paragraph 5.51. The seven strategic site options are introduced in Table A, in order of scale, and across Figures A to K.

Table A: Strategic site options appraised within this appendix

Option	Location	Quantum	Key assumptions
1	Barkham Square	500	Housing plus SANG only – see Figure A .
2		750	Likely to be housing plus SANG only. The Growth Scenarios Report suggests the possibility of a primary school (see Figure B); however, there is uncertainty, and the 2018 consultation response submitted by the site promoters did not mention the possibility of delivering a primary school (see Figure C).
3	Shinfield Parish SDL Expansion	976	As discussed within Chapter 5, strategic expansion of the SDL would comprise: <ul style="list-style-type: none"> A) two small sites within the SDL; B) a cluster of adjacent sites to the south of Shinfield to deliver 178 homes (N.B. site promoters have suggested 220 homes), which would complete the southern expansion of the village as far as Langley Mead SANG and the cluster of three small ancient woodland copses (see Figure D); C) strategic expansion to the west of Spencers Wood to deliver 225 homes comprising land both to the north (see Figure E) and south (see Figure F) of the recently allowed 'Land adjacent to Stanbury House' site; and D) strategic expansion to the west of Spencers Wood to deliver 540 homes (N.B. site promoters have suggested 625 homes) – see Figure G.
4	Hall Farm	1,000	Northern extension to Arborfield; would deliver primary school for Arborfield. The assumption is that the northern part of the site would be left undeveloped, as per Figure H ; however, it is noted that the site promoters stated through their 2018 Homes for the Future consultation response: <i>"The site is capable of accommodating a range of uses including residential and employment."</i>

Option	Location	Quantum	Key assumptions
5	East of Twyford / Ruscombe	c.2,000	Capacity figures are uncertain; however, on balance, it is considered appropriate to appraise: 2,000 homes at land between the A4 and the railway (i.e. north and south of the A302), which would deliver a new relief road; and 3,000 homes at land between the A4 and the railway plus land south of the railway, which would deliver new relief road on a more direct route, also potentially new multi-storey station car park.
6		c.3,000	These figures are lower than those presented in the Growth Scenarios Report, which also counted homes delivered through expansion to the west at Land at Bridge Farm. Also, more generally, the capacity figures reported in the Growth Scenarios Report are considered ambitious. With regards to distribution, the assumption is that the eastern extent of the sites would deliver open / green space, as per the approach shown in Figures I and J ; however, it is noted that the site promoters stated in 2018 (in response to the Growth Scenarios Report; see Homes for the Future consultation response) that “development at Land East of Twyford could most appropriately accommodate approximately 2,700 homes... development would not be located south of the railway line, but instead could be located further east.”
7	Grazeley	15,000	To include a new station, two district centres, two secondary schools and seven primary schools, as shown in Figure K .

Figure A: 500 home strategic scheme at Barkham Square³²



³² Source: Growth Scenarios Study (PBA and David Lock Associates 2018)

Figure B: 750 home strategic scheme at Barkham Square³²



Figure C: Masterplan submitted for Barkham Square, also showing Arborfield Garrison SDL

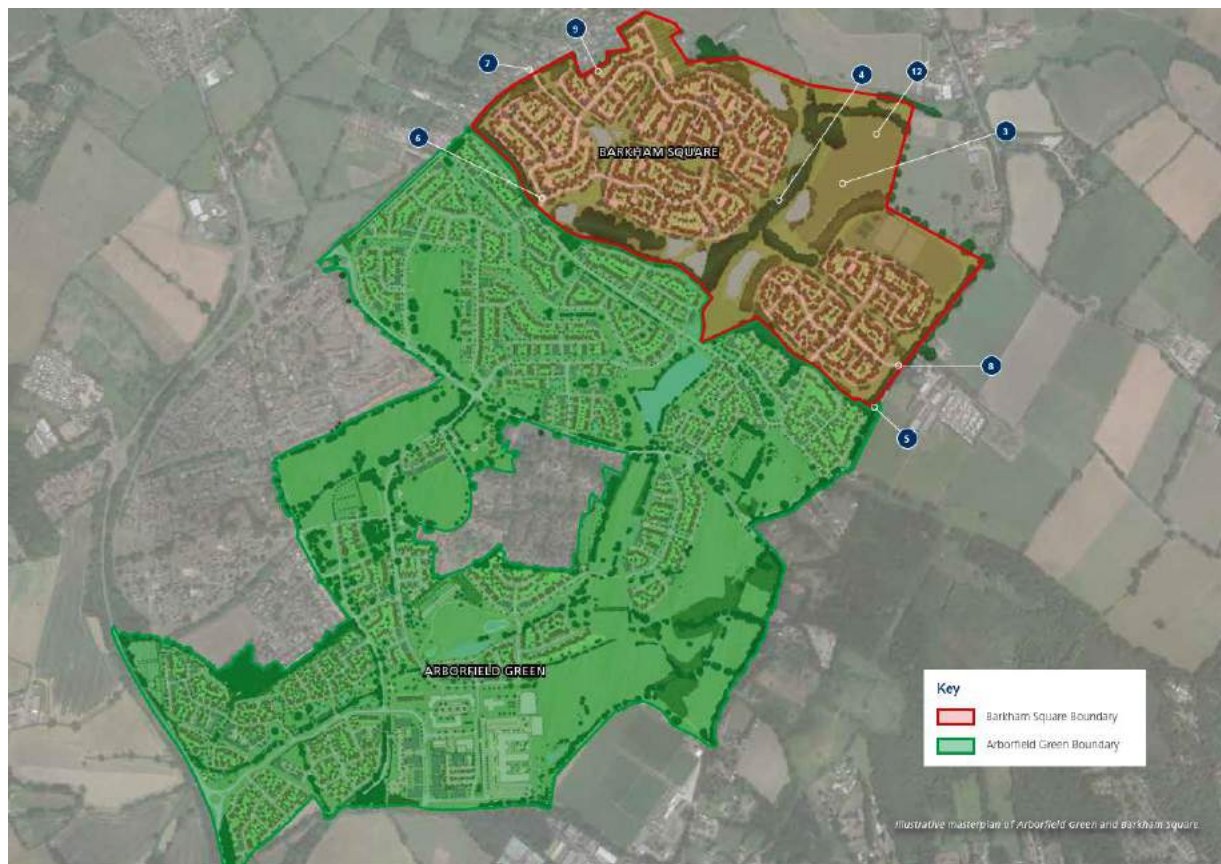


Figure D: Masterplan submitted for South of Shinfield (or “Land at Hyde End Road”)



Figure E: Masterplan submitted for West of Spencers Wood (North) (or “Land adj to North Lodge”)



Figure F: Masterplan submitted for West of Spencers Wood (or “Land at Highlands”)



Figure G: Masterplan submitted for Southeast of Spencers Wood (or “Land at Body’s Farm”)



Figure 18: Illustrative Masterplan

Figure H: 1,000 home strategic expansion at Hall Farm³²

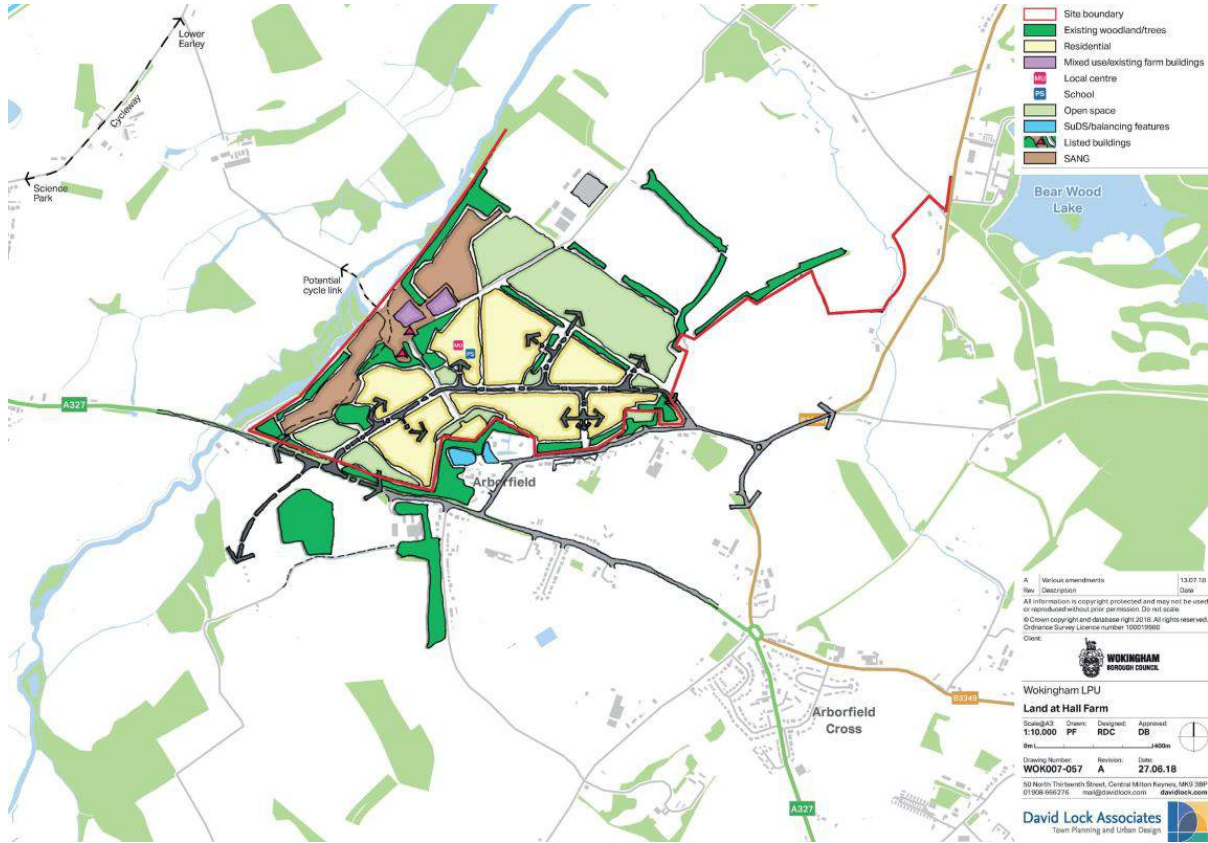


Figure I: c.2,000 home strategic expansion east of Twyford/Ruscombe³²

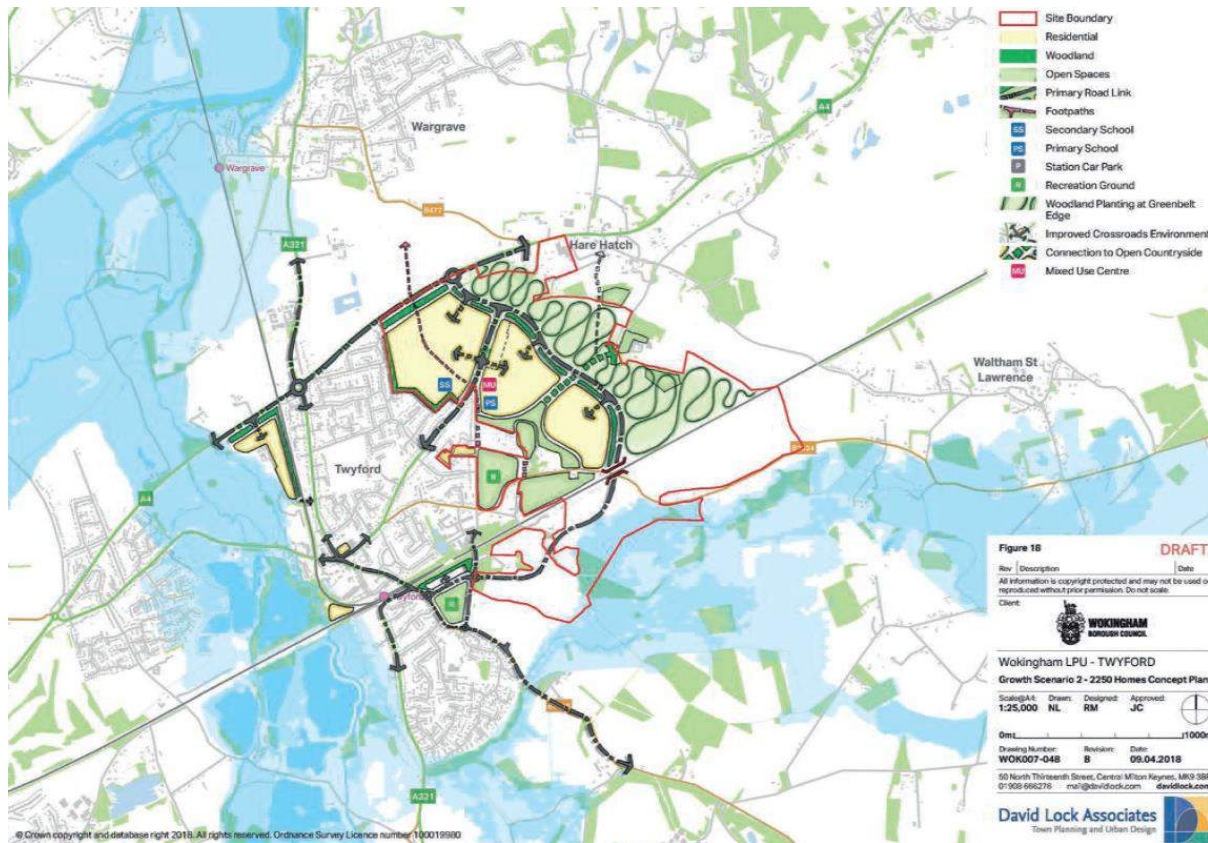


Figure J: c.3,000 home strategic expansion east of Twyford/Ruscombe³²

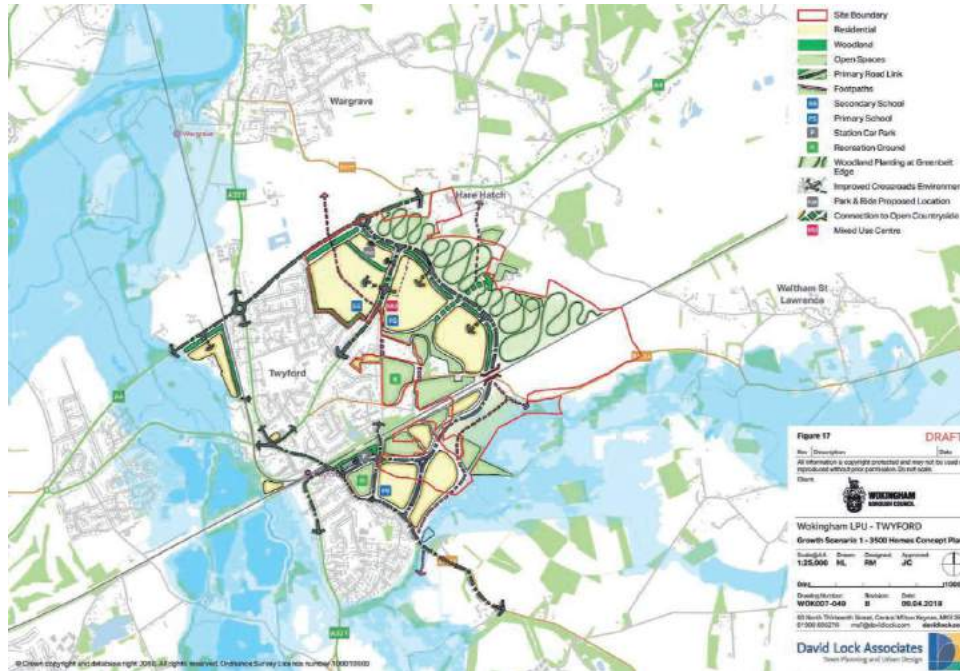
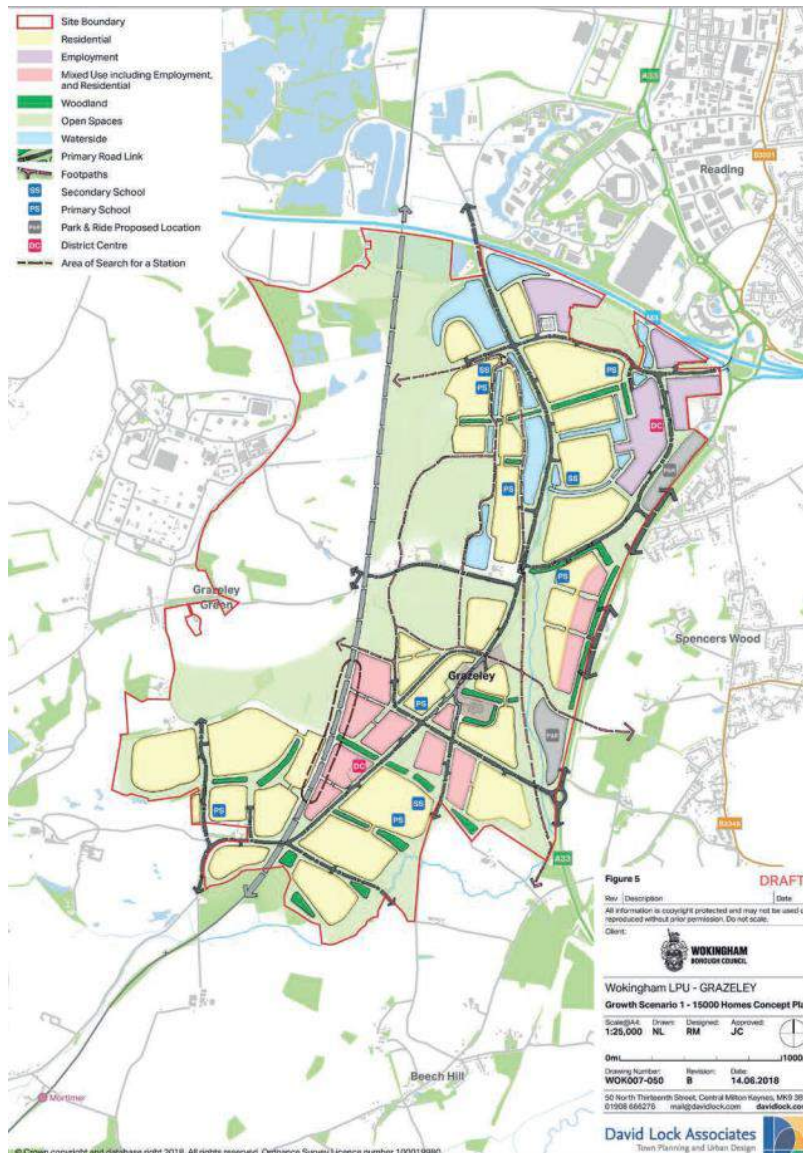


Figure D: 15,000 home strategic expansion at Grazeley³²



Comparative appraisal


The sections below present a comparative appraisal of the seven competing strategic site options in respect of each of the topic headings that comprise the ‘backbone’ to the SA framework, namely:

- Accessibility
- Air and wider env quality
- Biodiversity
- Climate change adaptation
- Climate change mitigation
- Communities
- Economy
- Historic environment
- Housing
- Land, soils and natural resources
- Landscape
- Transportation
- Water

Each section begins with a table that ranks the options in order of preference (where 1 is best) and also concludes on effect significant on a **red** / **amber** / **green** scale.

Also, with regards to methodology it is important to note that the appraisal takes a precautionary approach in respect of assumed infrastructure delivery and in respect of the mix of uses that might be achieved at each of the sites in question, recognising that all currently proposed schemes are subject to change. Cautious account is taken of materials submitted by site promoters.

Accessibility

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
3	3	2	3	2	2	1 

Discussion

As strategic developments all seven schemes would benefit from economies of scale that lead to funds being made available to deliver, or make land available for, community infrastructure and this will particularly be the case for **Grazeley**, which stands out as by far the largest of the strategic site options. It is anticipated that a 15,000 home new settlement at Grazeley would deliver a new town centre, two secondary schools, seven primary schools, a medical hub and what the site promoters describe as “the largest park in south east England since the London Olympic Park”. This is over-and above the extensive ‘grey’ infrastructure that would be delivered as part of the scheme, which is discussed further below. The effect of delivering extensive new community infrastructure alongside new homes will be that new residents benefit from excellent ‘accessibility’ and also that additional pressure on existing facilities in the Borough, and in Reading, will be minimised. It is also fair to say that residents of any new settlement at Grazeley would have very good access to higher order community services and facilities in Reading, via high quality transport connections, as discussed below.

The East of Twyford/Ruscombe and Shinfield Parish SDL Expansion options also perform relatively well in respect of access to both new and existing (or committed) community infrastructure:

- **East of Twyford/Ruscombe** - the Growth Scenarios Report assumes delivery of a new ‘mixed use centre’ to including a secondary school under both the c.2,000 home and c.3,000 homes scenarios; however, the representation received from the site promoters to the Homes for the Future consultation (2018) does not commit to any particular community infrastructure delivery (but does discuss delivery of a new relief road and also a new station car park, both of which would prove costly). With regards to access to existing community infrastructure, it is important to note that that Twyford is a tier 1 settlement with a range of services and facilities not far below the Borough’s main centres (Earley, Winnersh, Wokingham, Woodley). A secondary school would be nearby to the northern part of the site; however, the town centre would be beyond 1,200m distant from most parts of the site, and some parts could be beyond 2km under a scenario whereby development stretches to the east (a scenario favoured by the site promoters). Another consideration is good accessibility to higher order services and facilities in Reading by train, with potential locations for housing to the south of the railway line (under a c.3,000 home scenario) within 800m of the station. Good bus connectivity to Reading along the A4 is another benefit, as discussed below.

- **Shinfield Parish SDL Expansion** – this growth option comprises a collection of three individual schemes, and hence there are limitations in respect of achieving economies of scale; however, on the other hand, expansion could potentially contribute to the aims and objectives of the SDL as a whole, potentially leading to a more balanced (between Shinfield and Spencers Wood) SDL that involves comprehensive planning for this corner of the Borough (south of the M4, east of the A33, west of the river valley) as a whole. These matters have not been explored in any detail to date but could potentially be a focus of further work.

With regards to the three component parts of the expansion: the promoters of the largest individual scheme (southeast of Spencers Wood) have suggested that land could be made available for a primary school and that the scheme would deliver a 12ha SANG parkland and 1ha sports pitches (although their assumption was that the site would deliver 625 homes, as opposed to the 540 currently assumed); the other schemes, namely west of Spencers Wood and South of Shinfield, would deliver only children’s play space and strategic open space (‘strategic’ on the basis that, in both instances, there would be good potential to link to adjacent SANG); and all three schemes are well located, with the eastern site being mostly within 400m of the expanding Shinfield district centre, and the two western sites in very close proximity to Spencers Wood local centre. Furthermore, there is very good bus connectivity with Reading, following recent SDL related enhancements.

The final two growth locations perform relatively poorly, in respect of one or more of the factors discussed above:

- **Barkham Square** - the masterplan submitted by the site promoters includes a parkland in order to ensure sufficient SANG, but nothing else by way of community infrastructure, other than children’s play space. The Growth Scenarios Report suggests that a 750 home scheme on the site (see Figure B) might deliver a primary school, but with some uncertainty, and the representation received from the site promoters to the Homes for the Future consultation (2018) does not mention delivery of a school (nor land being set aside for a school). The site is located adjacent to the Arborfield Garrison SDL, which is delivering a new local centre c.400m from the edge of the site and a new district centre c.1,200m distant; however, on balance the site cannot be considered well connected relative to the strategic site options discussed above. Wokingham town centre is c.5km distant to northeast but is connected only via the B3349.
- **Hall Farm** – the site promoters have not submitted a masterplan for the site, stating through the Homes for the Future consultation only that the site “*is capable of accommodating a range of uses including residential and employment*”; however, the Growth Scenarios Report assumes that it would be possible to deliver a local centre, to include a primary school, as well as a significant area of SANG parkland. The study concludes that such a scheme would prove viable; however, there is a need to question whether such a scheme might affect the potential to deliver housing or employment further to the north, thereby with viability implications. A new primary school would be to the benefit of existing residents of Arborfield; however, the site is relatively poorly connected to higher order centres, in comparison to the strategic site options discussed above.

In **conclusion**, the five potential strategic growth locations can be placed into three tiers of performance, with it not being the case that there is any significant difference in performance between growth scenarios for any one location (this is marginal for East of Twyford/Ruscombe, where there would be some minor benefit to a larger scheme). The order of preference that emerges does correlate with the scale of growth that could be achieved at each location, although inherent locational considerations are a factor. With regards to effect significance, it is fair to conclude that a 15,000 home scheme at Grazeley would lead to significant positive effects, and also to flag the possibility of significant positive effects associated with East of Twyford given the potential (to be confirmed) to deliver a new secondary school.

Air and wider env quality

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
3	3	3	3	2	1	3

Discussion

A key consideration here is the need to avoid worsening of air quality - and ideally achieve improvements to air quality - within the three key air pollution hotspots locally, namely Reading (where an AQMA covers the town centre and beyond), Wokingham (where an AQMA follows the main roads through the town centre) and Twyford (where an AQMA is associated with the town centre crossroads).

It follows that there is a need to focus attention on **East of Twyford/Ruscombe**, as the location in closest proximity to an AQMA, and also noting a concern that traffic congestion in Twyford could worsen as a result of increased commuter traffic following the arrival of Crossrail services (to and across central London) in 2021. An assumption central to consideration of strategic growth here is that any scheme would deliver a new relief road, which would enable some traffic (specifically traffic approaching Twyford from the east, along the A4, and heading towards Wokingham to the south) to bypass the town centre cross-roads AQMA. There is considerable support for a relief road, which would also be in accordance with wider urban realm objectives for the town centre. A larger scheme, potentially involving housing to the south of the railway line (as well as to the north), might allow for a straighter / more direct road alignment; however, there is no certainty in this respect, including on the basis that the ideal road alignment would cross land outside of the developers control (i.e. outside of the red-line boundary of the site – see Figure J, above). Another consideration is that a larger scheme could lead to increased likelihood of delivering a new multi-storey car park for the train station, which could assist with resolving the problem of on-street parking (and resulting impacts on traffic flows); however, there is again much uncertainty, as the potential location that has been identified is constrained / sensitive, as discussed below. It is also noted that the Growth Scenarios Report identifies the possibility of the scheme delivering or facilitating a new Reading Park and Ride site; however, there is very low certainty regarding deliverability, with the Homes for the Future consultation response received from the site promoters not referencing this as a possible benefit of the scheme.

It is more challenging to identify the potential for growth at any of the other strategic site options to result in significant implications for air quality within the hotspot areas discussed above.

- The scale of growth at **Grazeley** certainly gives rise to a risk of high volumes of traffic travelling north along the A33 towards the Reading AQMA; however, there is an excellent opportunity to deliver high quality public transport (as discussed below) and an extensive range of services and facilities as part of the scheme (as discussed above), thereby minimising car movements towards the AQMA (commuting patterns are also a consideration – see discussion below).
- **Shinfield Parish SDL Expansion** – could also lead to an increase in car movements through the Reading AQMA, and there is also a possibility of problematic traffic congestion, and, in turn, air pollution, through Spencers Wood and Shinfield (although neither location is known to suffer from existing poor air quality), with Shinfield notably benefiting from the Eastern Relief Road.
- **Barkham Square and Hall Farm** – are locations that are less well connected, and where car dependency might be relatively high (see discussion above, under accessibility), such that there might be a risk of problematic increases in traffic towards Wokingham along the B3349, which is associated with an AQMA at the point where it meets the A329 Reading Road (at the edge of the town centre).

Finally, with regards to other ‘environmental quality’ matters, there are limited concerns regarding noise pollution at any of the sites in question, and no known issues regarding problematic contaminated land (pending further detailed investigation). An important matter relates to the proximity of Grazeley to AWE Burghfield; however, this is a focus of discussion below, under Communities.

In **conclusion**, strategic expansion of Twyford/Ruscombe and associated delivery of a town centre relief road (or, at least, *partial* relief road) is, on balance, considered to represent a significant opportunity, in respect of improving air quality; however, there is a degree of uncertainty ahead of further detailed work, noting that there would be a

degree of car dependency amongst the new population, including dependency on the car to access to the town centre. It is more challenging to identify the potential for growth at any of the other strategic site options to result in significant implications for air quality, and hence they are judged to perform broadly on a par, and significant negative effects are not predicted.

Biodiversity

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
2	2	3	1	2	3	2

Discussion

Beginning with the strategic site option that is subject to the least constraint – **Hall Farm** is notable for containing very little priority habitat, with just two very small patches of ancient woodland at the southern extent of the site, including one closely associated with the church, which would presumably be suitably buffered under any development scenario. The western edge of the site is defined by the flood zone of the River Loddon, and the river here is associated with a highly notable area of lowland fen habitat (designated as a LWS); however, this area would also likely be suitably buffered, given flood risk and also heritage constraint. The site does not fall within a Biodiversity Opportunity Area (BOA); however, it is possible to identify it as falling within a broad sector of land associated with the River Loddon BOA to the west and significant areas of woodland to the north (Bearwood College) and south (several large ancient woodland patches). It follows that there might be an opportunity for strategic growth to support habitat creation / enhancement and, in turn, biodiversity net gain.

Other sites are subject to a greater degree of constraint but are challenging to differentiate. Taking the sites in order of scale:

- **Barkham Square** - development would, to a large extent, envelop a notable linear woodland strip associated with the northern edge of the SDL and the stream corridor that runs north/south through the site, which includes several very small patches of ancient woodland; however, the proposed masterplan (see Figure C) proposes that the stream corridor should form the centre point of a new SANG parkland.
- **Shinfield Parish SDL Expansion** - two of the three expansion areas are subject to notable constraint, namely east of Spencers Wood and south of Shinfield. The former would lead to significant loss of an area of Wood Pasture and Parkland priority habitat, and also about a large area of woodland (non-ancient) designated as a LWS and, more generally, the entire area between Spencers Wood and the A33 appears associated with a relatively dense network of woodland belts, trees and hedgerows; however, the proposal is to extend the recently permitted adjacent SANG, and it is also noted that the adjacent recently permitted housing site (Land at Stanbury House; 55 homes) itself entirely comprises land shown (by the nationally available dataset) to comprise Wood Pasture and Parkland priority habitat. The latter expansion area (south of Shinfield) would abut a cluster of three small ancient woodland patches; however, this is a matter examined in some detail within the 'vision statement' submitted by the promoters, with the suggestion that there would be the potential to "reconnect these long-separated woodland compartments", deliver "reinstatement of positive traditional management including coppicing" and "extend the Langley Meads SANG by including Tanner's Copse". The final expansion area (southeast of Shinfield) appears notably unconstrained in strategic biodiversity terms, drawing upon nationally available datasets; however, the materials submitted by the site promoter highlight that there are mature species rich hedgerows associated with narrow strips of neutral semi-improved grassland. The proposal includes a new 12ha SANG parkland to ensure a defensible eastern boundary, which would reduce risk of future 'sprawl' downhill towards the River Loddon.
- **East of Twyford/Ruscombe** – there are two BOAs to the east of Twyford associated with a high density of woodlands, namely the Waltham to Binfield Woodlands and Parklands BOA to the south of the railway line and the Ashely and Bowsey Hills BOA to the north of the A4; however, there is potential for expansion east of Twyford/Ruscombe without encroaching on a BOA. Specifically, expansion to the north of the railway line would avoid encroachment on a BOA, and the Wokingham Landscape Character Assessment (2004) serves to suggest limited functional linkages between this landscape and the more wooded landscapes to the northeast and south, although development would envelop the Ruscombe and Vale Woods LWS, which is a c.2.8 ha non-ancient

woodland. Land to the south of the railway is associated with a notably high density of priority woodland habitat and falls within a landscape character area that extends south to include the Waltham to Binfield Woodlands and Parklands BOA; however, woodland within and adjacent to the site boundary is *non-ancient*, mostly *not* designated as a LWS and mostly falls within the flood risk zone. Another constraint is the area of Wood Pasture and Parkland priority habitat associated with Stanlake Park adjacent to the south.

- **Grazeley** – a defining feature of the site is the floodplain of the Foudry Brook, which passes north/south through the centre of the site; however, the brook is not associated with any wetland priority habitat within the site (there is a notable patch to the south of the site). With regards to woodland, this broad area is associated with a relatively low density of ancient woodland and deciduous woodland priority habitat; however, there is a large area of Wood Pasture and Parkland priority habitat within the northern part of the site, and also a significant cluster of ancient woodland to the north of AWE Burghfield (which falls within the Kennet Valley BOA). The former would likely be impacted by development, whilst impacts to the latter would be avoided, given a need to ensure no development within the AWE Burghfield safety exclusion zone.

In **conclusion**, in light of this discussion it is considered appropriate to highlight Shinfield Parish SDL Expansion and larger scale expansion to the East of Twyford (on the assumption that this would necessitate growth to the south of the railway line) as the most problematic strategic site options; however, there is considerable uncertainty ahead of further work, i.e. work to establish how development might avoid sensitive areas and deliver habitat creation and enhancement in line with strategic priorities. It follows that it is not possible to conclude the likelihood of significant positive effects, either positive or negative, at the current time.

Climate change adaptation

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
★1	★1	2	★1	★1	3	3

Discussion

The key consideration here is the need to avoid development - in particular residential - encroaching on fluvial flood risk zones, noting the possibility of expanded flood risk zones under climate change scenarios. A secondary consideration is the need to avoid surface water flood risk zones, noting that it is often possible to deal effectively with surface water flood risk through masterplanning and design measures, namely sustainable drainage systems (SuDS). Another consideration is development impacts (either positive or negative) to water flows and, in turn, down-hill / down-stream flood risk; however, it is difficult to identify issues at the strategic level.

A stand-out consideration here is the extent of fluvial flood risk within the **Grazeley** site which, as discussed above, is associated with the shallow valley of the Foudry Brook. It is fair to assume that a starting point for masterplanning will be the need to avoid the defined fluvial flood zones; however, a precautionary approach could involve additionally avoiding a buffer zone to account for climate change risks and also the large area of surface water flood risk to the west of the railway line at the southern extent of the site associated with a small stream without a defined fluvial flood zone. The Growth Scenarios Report identifies good potential to avoid flood risk zones.


Another area heavily affected by fluvial flood risk is that part of the **East of Twyford/Ruscombe** potential expansion area that falls to the south of the railway line. The flood zone constrains the southern extent of the site, such that there would be potential to deliver land within the flood zone as greenspace. Should the desire be to buffer the flood zone then the effect could be to limit strategic residential development only to the western part of the site (south of the railway), namely that part most closely associated with the existing urban edge.

Barkham Square is also bisected by a fluvial flood risk zone associated with a small stream; however, this is a very narrow flood risk zone, and the firm proposal from the site promoter is that there would be a SANG parkland delivered that is centred on this stream and buffers it to a considerable extent.

Hall Farm abuts the flood zone of the River Loddon but can be considered subject to low constraint in flood risk terms on the assumption that land in proximity to the river would be maintained/enhanced as greenspace. Similarly, expansion to the south of Shinfield (as part of **Shinfield Parish SDL Expansion**) would abut the Loddon floodplain, which potentially poses more of a problem as this is a smaller site. Also of note is that another component part of the potential Shinfield Parish SDL Expansion option, namely land to the southeast of Spencers Wood is bisected by an extensive area of surface water flood risk.

In **conclusion**, there is a need to flag the risk of significant negative effects associated with Grazeley and a Twyford/Ruscombe expansion option involving development to the south of the railway line; however, this reflects a precautionary approach. In practice there will be much potential to complete detailed work to understand the precise nature of flood risk within the sites and then masterplan in order to avoid that risk. It is also appropriate to flag a degree of risk associated with Shinfield Parish SDL Expansion.

Climate change mitigation

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
6	5	6	4	3	2	1 

Discussion

Matters relating to per capita greenhouse gas emissions are a focus of discussion below, under the transport heading, and it follows that the focus of discussion here is the need to minimise per capita greenhouse gas emissions from the built environment. In practice, this means that there is a need to favour schemes with greatest potential to deliver decentralised heat/power generation from renewable or low carbon sources and deliver development to high standards of 'sustainable design and construction'.

In practice there is little potential to differentiate between locations for growth in these respects; however, it is appropriate to highlight larger schemes as preferable on the assumption that the economies of scale will lead to funding availability. It follows that it is appropriate to flag the potential for significant positive effects to result from development of a very large (15,000 home) new settlement at **Grazeley**. This would be a flagship scheme of national note, hence it is fair to assume development of a scheme that prioritises the achievement of climate change mitigation objectives in line with the national climate emergency (and there are also significant locational opportunities in respect of minimising per capita emissions from transport, as discussed below).

However, there is much uncertainty at this stage, with low carbon infrastructure not having been a focus of work completed to date. There is an established commitment for the scheme to be 'carbon neutral', which will likely necessitate decentralised renewable or low carbon heat/power generation; however, there remains much uncertainty regarding what might be feasible and deliverable in this respect. In particular, delivery of a 'Grazeley-wide' combined heat and power (CHP) network (i.e. delivery of one or more CHP generators along with a network of piping to transport heat to homes and businesses) could prove challenging if there is a need to favour a dispersed / polycentric scheme, which will likely be the case due to the need to avoid flood risk zones.

With regards to the other strategic site options, the key point to note is that larger schemes will be associated with a greater likelihood of delivering measures that ultimately support minimisation of per capita greenhouse gas emissions from the built environment. There are established rules of thumb, for example that delivery of a CHP network can prove viable for schemes in excess of 500 homes; however, in practice scheme viability is highly localised and there is a need to factor-in site-specific considerations relating to delivery of costly essential 'grey' infrastructure, community infrastructure, affordable housing and SANG before consideration can be given to delivery of low carbon infrastructure, or delivery of buildings to standards of design and construction that exceed building regulations. Rules of thumb serve to highlight:

- **East of Twyford/Ruscombe** - is associated with an opportunity to deliver low carbon infrastructure etc noting that the proposed scheme would be nucleated (as opposed to polycentric), although it is not anticipated that the scheme is not expected to include significant employment floorspace, which could be to the detriment of delivering a viable CHP scheme as mixed use development supports consistent heat demand. It is also noted that the representation received from the site promoters in 2018, in response to the Homes for the Future consultation, does not make any mention of CHP or any related low carbon opportunities.
- **Shinfield Parish SDL Expansion** - as performing relatively poorly, as only one of the three component schemes would involve in excess of 500 homes, and there is no existing CHP network for SDL expansion schemes to 'tap into' (nor is there a CHP network being delivered as part of the Arborfield Garrison SDL that might benefit Barkham Square).

In **conclusion**, it is appropriate to place the strategic site options in an order of preference broadly according to development scale, to highlight Grazeley and East of Twyford/Ruscombe as being associated with uncertain potential to result in significant positive effects and to highlight the smaller schemes as representing an opportunity missed, therefore potentially leading to significant negative effects.

Communities

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
2	2	3	2	3	3	1★

Discussion

The matter of accessibility to community infrastructure has already been discussed above, under the ‘accessibility’ heading; however, there remain a range of other community-related matters for discussion.

Potentially an overriding consideration is a need to ensure the safety of new residents of any new settlement in the **Grazeley** area given proximity to AWE (Atomic Weapons Establishment) Burghfield. The northwest part of the site is subject to the AWE Detailed Emergency Planning Zone, placing significant restrictions on land use, with only informal open space permissible. It is fair to assume that all masterplanning options considered will be fully in alignment with AWE Burghfield safety considerations.

Maintaining a focus on Grazeley, it is also fair to highlight the opportunity to deliver a high quality development that not only includes an excellent range of community infrastructure (as discussed above), but also achieves high standards in respect of the urban realm and built environment, with the site promoters describing “a high quality series of neighbourhoods set in a network of open spaces.”

Maintaining a focus on place-making and robust communities in the broadest sense, **Shinfield Parish SDL Expansion** potentially stands-out in that there are strong arguments for allowing time for the existing committed development schemes within the SDL to ‘bed in’ prior to exploring expansion options. Both new and existing residents of Shinfield and Spencers Wood have been dealing with construction work and change to the local area for a number of years now, and this will continue into the future under a baseline scenario.

Impact to existing residents is also a stand-out consideration in respect of **East of Twyford/Ruscombe**, with there being a clear issue in respect of maintaining the identity of Ruscombe as a distinct historic settlement. There might be a particular concern associated with a higher growth scenario, noting that the historic built form of Ruscombe extends to the south of the railway.

There are also similar concerns in respect of **Hall Farm**, where development would transform the small village of Arborfield into a significantly larger settlement; however, Arborfield has limited historic character, such that expansion could have a degree of merit from a place-making perspective.

A final consideration here (which might alternatively be considered below, under ‘housing’) relates the matter of supporting Gypsy and Traveller communities within the Borough. In this respect, the key point to note is that **East of Twyford/Ruscombe** includes a permanent Gypsy and Traveller site, known as Twyford Orchards. The site would certainly be impacted, and, in all likelihood, enveloped by any strategic expansion scheme, which leads to the possibility of negative impacts on the existing Gypsy and Traveller community, given a tendency for Gypsy and Traveller communities to prefer a degree of isolation or, at least, separation from ‘bricks and mortar’ communities. There would be good potential to relocate the site as part of the development; however, the Gypsy and Traveller community might have concerns about any such plan.

Maintaining a focus on supporting the Gypsy and Traveller community it is also appropriate to highlight **Grazeley** as representing an excellent opportunity to deliver a new site to meet the need for new pitches that has been identified through the recent Gypsy and Traveller Accommodation Assessment (GTAA).

In **conclusion**, it is appropriate to highlight Grazeley as representing a significant opportunity, in respect of delivering a thriving new community and minimising impacts on existing communities, although there is also a need to ensure a precautionary approach in respect of AWE Burghfield safety considerations. At the other end of the spectrum, there are concerns regarding impacts to existing communities associated with East of Twyford/Ruscombe and Shinfield Parish SDL Expansion; however, significance is uncertain.

Economy

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
2	2	2	2	2	2	1★

Discussion

The available evidence indicates that existing and committed employment sites will ensure that there is sufficient employment floorspace in the Borough to meet demand over the plan period, at least in broad quantitative terms (there is also a need to factor-in qualitative considerations relating to various different types of employment floorspace). However, projections of employment land demand/supply balance are inevitably associated with a degree of uncertainty, given uncertainty regarding the national and local economy and changing business needs. It follows that there is merit to supporting mixed used schemes that deliver targeted new employment floorspace.

It follows that there is merit in the proposed **Grazeley** scheme which, according to the site promoters, would deliver *“a range of employment spaces to nurture new ventures as well as providing bespoke space for companies supporting the economic growth of the Thames Valley.”* There is no expectation that any of the other strategic site options would deliver significant new employment floorspace (although the larger schemes would be expected to deliver some small scale employment floorspace as part of any new local centre).

Another consideration is supporting existing centres of employment and economic activity by ensuring that new housing is located in close proximity; however, in this respect there is little potential to meaningfully differentiate the competing strategic site options, as all are quite well located in this respect. **Shinfield Parish SDL Expansion** potentially stands-out as performing well as new residents would be able to cycle or even walk to expanding Thames Valley Science Park; however, all strategic site options would support the ability of new residents to access major employment locations by ‘sustainable transport’ modes. **East of Twyford/Ruscombe** is c.6km from Thames Valley Park to the west; however, there would be good connectivity via the A4 and residents would also be able to access central Reading (also Maidenhead) by bus or rail.

In **conclusion**, Grazeley stands-out as an opportunity to deliver targeted new employment floorspace, although benefits to the local economy would be limited, reflecting the fact that there is understood to be limited need for new employment land locally. The other strategic site options are judged to perform broadly on a par.

Historic environment

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
2	2	1★	2	3	4	1★

Discussion

Beginning with the strategic site option that is subject to the greatest constraint - **East of Twyford/Ruscombe** would give rise to a high likelihood of impacts to the landscape setting of the Ruscombe Conservation Area, which is centred on a Grade 1 listed church, as well several listed buildings within Ruscombe Parish that fall outside of the conservation area. Also, Stanlake Park is potentially a constraint to the south, in particular as Stanlake Manor House is highly visible in the landscape, although the house is only Grade 2 listed. Also, whilst there are no scheduled monuments within the site boundary, it may be fair to conclude that this part of the Borough may be associated with a high likelihood of archaeology, with the Landscape Character Assessment (2004) stating that: *“A low density of late Neolithic, Bronze Age and Iron Age settlement evidence suggests that there may have been early clearance of the woodland and cultivation of the chalk soils, with an expansion of prehistoric settlement from*

the river valley...” However, on the other hand, expansion would deliver a new relief road, to the benefit of Twyford Conservation Area.

There is notably no designated conservation area (at least within Wokingham Borough) in the vicinity of **Grazeley** and the **Shinfield Parish SDL**, such that concerns relate mostly to avoiding impacts to the setting of sporadic Grade 2 listed buildings. Expansion of the Shinfield Parish SDL to the southeast of Spencers Wood would lead to a risk of impacts to the setting of Swallowfield Park, which is a Grade 2 Registered Park and Garden centred on a Grade 2* listed manor house, located on the opposite side of the River Loddon ; however, the site promoters have taken this constraint into account as part of their masterplan (Figure G), as reflected in the proposed SANG parkland at the site’s southeast extent. Finally, it is noted that Grazeley may be associated with non-designated archaeological constraint, reflecting the surface geology which is partially one of easily worked alluvium soils, with the LCA stating: *“This area has considerable evidence of very early agricultural exploitation. A concentration of cropmarks found across this area indicate possible clearance, cultivation and settlement through the prehistoric and Romano-British periods, probably focussed on the Foudry Brook...”* Also, there is a series of World War II pillboxes along the Foudry Brook as part of the defensive GHQ line.

As for **Hall Farm** and **Barkham Square**, both sites are notably free from constraint (there is only one Grade 2 listed building in the vicinity of Barkham Square, at c.100m from the site boundary, and just two Grade 2 listed buildings at the southern edge of Hall Farm); however, development at either site would give rise to a concern regarding increased traffic through the nearby Arborfield Cross Conservation Area.

In **conclusion**, it is appropriate to highlight the risk of East of Twyford/Ruscombe leading to a significant negative effect, in particular under a higher growth scenario, although it is recognised that there would be good potential to avoid and mitigate impacts through masterplanning and design measures. It is also possible to highlight Hall Farm and Barkham Square as giving rise to a degree of concern, given proximity to Arborfield Cross.

Housing

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
2	2	2	2	★1	★1	2

Discussion

It is not appropriate to highlight **Grazeley** as the preferable strategic site option simply on the basis that it is far-and-away the largest site, as the other sites could feasibly be delivered in combination with one another, and also in combination with non-strategic sites. However, it is fair to highlight that, as a very large site, there will be excellent potential to deliver the full mix of required housing types and tenures at Grazeley, including different tenures of affordable housing to help meet the high need for affordable housing that exists locally.

There are arguments that, as a very large and complex site requiring major infrastructure upgrades, there is an inherent risk of delays to delivery of housing at Grazeley – i.e. a risk of delivery falling below the trajectory that is required by the adopted plan, thereby creating a risk that, at some point in the plan period, Wokingham Borough will be unable to demonstrate a five year housing land supply and/or fail the Housing Delivery Test – with the promoters of one of the competing strategic sites stating through the Homes for the Future Consultation (2018) that *“the SDLs currently building out in Wokingham had significantly longer lead in times than expected by the Council, without the significance of the issues that are present in Grazeley.”*

However, there are counter arguments in respect of delivery, notably reflecting the pending Government decision on whether to assign major forward funding through the Housing Infrastructure Fund (HIF), and the Council’s commitment to taking an active role in bringing the site forward. The Homes for the Future consultation response received from the site promoters stated that they *“welcome the chance to explore ideas and opportunities with Wokingham DC on how best to bring forward Grazeley at the earliest possibility. This could be achieved through: • A site specific development brief or Action Area Plan brought forward ahead of the Local Plan; • Applying an LDO on (part of) the site • Submission of an early planning application for an exemplar first phase, ahead of adoption of Local Plan; • Use of hybrid applications; • Phased delivery of infrastructure.”*

East of Twyford Ruscombe also stands-out as a very large site. The promoters notably are proposing that delivery be phased over a relatively long period of time, as opposed to the more typical situation whereby an optimistic view of delivery rates is given, and highlight that the site benefits from being in the control of a single developer (although there is additional land to the southwest that might also fall within the red-line boundary of the site – see Figure J). It is also fair to highlight that there could be merit (albeit highly uncertain), in respect of ensuring a robust housing supply trajectory, to relying on delivery of a higher growth strategy in this northern part of the Borough given relative distance to the four SDLs, which are continuing to build-out. Finally, it is noted that the representation received from the site promoters to the Homes for the Future consultation (2018) presents an analysis of the baseline housing need situation at Twyford, highlighting an aging population³³ and suggesting that “the lack of new homes has meant the village has likely failed to meet the needs of existing residents (e.g. newly forming households such as couples) or those looking to move to the town (e.g. families)”; however, equivalent analysis is not available for other settlements or sub-areas within the Borough.

The remaining sites could also likely deliver a good mix of housing (although none of the materials received from site promoters discuss particular opportunities) and benefit from relatively limited reliance on major infrastructure upgrades ahead of development; however, all are in proximity to existing SDLs, which potentially gives rise to a risk (highly uncertainty) of local market saturation leading to delivery delays.

In **conclusion**, Land East of Twyford stands out as performing well, as a larger site potentially associated with relatively limited delivery risks, and there is also some evidence (albeit limited) of locally specific housing needs, which enables a tentative conclusion of uncertain significant positive effects.

Land, soils and natural resources

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
★1	★1	3	2	4	4	3

Discussion

A foremost consideration here is the need to avoid the loss of agricultural land classed as ‘best and most versatile’ (BMV), which the NPPF defines as that which is grade 1 (highest quality), grade 2 or grade 3a. The nationally available agricultural land quality dataset shows variation in agricultural land quality across the Borough; however, this dataset has low accuracy (indeed, it does not differentiate between grades 3a and 3b) and low spatial resolution (e.g. to the extent that smaller villages are not recognised as comprising urban land) such that it must be used with caution. Another dataset is available showing agricultural land quality with a much higher degree of resolution and accuracy, on the basis that it reflects the findings of field surveys, namely the “Post 1988” dataset; however, this dataset is very patchy, and covers only a small part of the Borough.

The nationally available low resolution dataset serves to suggest a likelihood of **East of Twyford/Ruscombe** being associated with significant areas of grade 2 agricultural land; however, there is no certainty with the land not having been surveyed in detail (or, at least, surveys not having been added to the “Post 1988” dataset).

The only sites for which detailed survey data is available are **Grazeley** (data is available for most of the site) and **Shinfield Parish SDL Expansion** (the great majority of this area has been surveyed in detail). The data shows this broad area (Grazeley / Shinfield Parish) to comprise a complex mix of grade 3a (i.e. BMV) and grade 3b (i.e. non-BMV). The dataset shows that Grazeley includes significant areas of BMV land as do all three of the Shinfield Parish SDL Expansion component sites.

As for **Hall Farm** and **Barkham Square**, the low resolution national dataset shows the former to comprise mostly grade 3 quality land (which might or might not be best and most versatile) and the latter to comprise mostly grade 4 (non-BMV) quality land.

³³ The younger working age population (18-44) has declined by 13% since 2002, from 4,859 to 4,238. The number of older working age people (45-64) has seen a marginal increase of 5%; however, the fastest growing group has been 65+ which have increased by a third.

In **conclusion**, it is a challenge to differentiate the strategic site options with confidence given the absence of consistent data, and moving forward, it is recommended that all strategic site promoters submit detailed survey data such that the competing sites can be compared and contrasted on a level playing field.

On balance, it is fair to highlight Land East of Twyford/Ruscombe as being associated with the greatest constraint, followed by Grazeley and Shinfield Parish SDL Expansion, followed by Hall Farm. It is appropriate to conclude the strong likelihood of Land East of Twyford/Ruscombe, Grazeley and Shinfield Parish SDL Expansion leading to significant loss of BMV, and hence significant negative effects.

Landscape

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
=	=	=	=	=	=	=

Discussion

It is a challenge to differentiate confidently between the competing strategic site options on the basis of the available evidence, namely the Wokingham Landscape Character Assessment (LCA, 2004).

Having made this initial point, the following bullet points consider each site in turn (in scale order):

- **Barkham Square** – is associated with the Arborfield and Barkham Settled and Farmed Claylands character area, which has a ‘moderate’ quality and sensitivity. The site mostly descends from the minor roads to the east and west, potentially suggesting limited visibility across the site; however, it is strongly associated with the intersection of two stream corridors, with the stream corridor that defines the northern edge of the site associated with a footpath (which could potentially form part of a circular walk linking to Wokingham), and the LCA describing “subtle wooded shallow ‘valleys’ around the Barkham Brook known as ‘the Coombes’” as contributing significantly to local character. A final consideration is the risk of coalescence, or at least loss of a robust landscape gap, between the Arborfield Garrison SDL / Barkham Square and the village of Barkham, which is a linear historic settlement stretching along Barkham Street with historic cores at either end (the southern core being the original location of the village). The remaining landscape gap would be as little as c.250m at its narrowest point, assuming a scheme as per Figure C, above.
- **Shinfield Parish SDL Expansion** – is mostly associated with the Spencers Wood Farmed and Settled Clay character area, which has a ‘moderate’ quality and sensitivity. All of the three component sites are potentially associated with a degree of sensitivity, at least in relative terms. From west to east:
 - Expansion to the west of Spencers Wood would impact on a ridge landscape that descends from the B3349 westwards to the A33, and which potentially has a degree of distinctive character. The LCA describes “former Common land at Spencers Wood, to west of Basingstoke Road... around Stanbury Park and Highlands” as “an important defining feature of the settlement” and also states: “It is evident from the early maps that settlement consisted primarily of quite closely-spaced Medieval/Post-medieval farmsteads, interspersed with country houses and areas of landscaped parkland, traces of which are still evident to varying degrees around... Stanbury Park, Highlands and Loddon Court [which is located to the south of the site, associated with the same north-south ridge-line].” A footpath is adjacent to the southern edge of this potential expansion area, and proximity to the centre of Spencers Wood (which has a linear form, stretching along the B3349) potentially suggests a degree of sensitivity; however, it is not clear that this is an accessible or easily appreciated landscape.

Finally, it is important to note that there are two recently committed sites to the west of the B3349, such that the baseline situation will likely involve a reduction in the character of this ridge landscape; it follows that there could be merit in seeking to plan comprehensively for this landscape (west of the B3349, north of the Loddon), with a view to securing sensitive development alongside increased accessibility and landscape management, rather than risking piecemeal erosion of the landscape character over time.

- Expansion to the southeast of Spencers Wood – the land slopes gently away from most potential viewpoints within Spencers Wood, such that the primary concern is likely to be impacts on the sensitive landscapes to

the south and southeast, associated with the River Loddon, noting the designed landscape of Swallowfield Court beyond the river and also the presence of a footpath that links to Swallowfield via the river and the cluster of listed buildings at Sheepbridge Court Farm; however, as discussed above, the site promoters have taken this constraint into account as part of their masterplan (Figure G).

- Expansion to the south of Shinfield – is associated with the Loddon River Valley character area, which has ‘high’ quality and sensitivity. There are no public footpaths associated with the river in this area, nor are there likely to be sensitive views from the opposite side of the river valley; however, land adjacent to the site has recently been made highly accessible as Langley Park SANG, such that it might be fair to conclude that this is now one of the most accessible parts of the Loddon Valley south of Reading.
- **Hall Farm** – is associated with the transition between two character areas, namely the Arborfield River Terrace character area and the Arborfield Cross and Barkham Settled and Farmed Clay character area, both of which have ‘moderate’ quality and sensitivity. There is a relatively high density of public footpaths in this area, which serves to suggest a degree of sensitivity, and there is a clear sensitivity at the western edge of the site, in the form of remnant historic parkland associated with the former Arborfield Hall, with the LCA describing *“the presence of mature oaks, which provide a strong silhouette against the open sky.”*
- **East of Twyford/Ruscombe** - is associated with the Wargrave-Twyford Arable Chalk Lowlands character area, which has ‘moderate’ quality and sensitivity. This character area is quite distinct from the clayland character areas discussed above and below, with LCA describing: *“Farmland with strong sense of openness and homogeneity due to the lack of field divisions or vertical elements across the landscape and maintains separation between and setting of settlements.”* The bridleway through the site that links Wargrave to the north with Ruscombe and locations beyond, including the attractive village of Waltham St. Lawrence to the east (where it links to the Knowl Hill Bridleway Circuit) is a significant constraint.

Finally, it is important to note that this site falls within the London (“Metropolitan”) Green Belt, within which there is a need to “safeguard the countryside from encroachment” and ensure permanent “openness”. The Growth Scenarios Report (see Figures I and J, above) proposes a new defensible Green Belt boundary in the form of a boundary road (the ‘relief road’ discussed above) with a large area of publicly accessible open space / green space beyond; however, it is noted that the site promoters stated through their 2018 Homes for the Future consultation response that: *“Whilst this would establish a set boundary to the development, it is considered that this would not necessarily result in the most appropriate solution to promote high quality place making. Alternative options to this approach include for example an attractive built edge with high quality landscaping beyond, including new planting where appropriate to form a defensible Green Belt boundary.”*

- **Grazeley** – comprises virtually the entirety of the Grazeley Farmed Clay Lowland character area, which has ‘moderate’ quality and sensitivity. The LCA describes a “highly rural landscape” and a “simple flat landform, enclosed to the east by the prominent clay ridge of Spencers Wood” and goes on to make a range of statements regarding quality, condition and sensitivity, including: *“The strong character is attributed to the distinctive flat landform and presence of the numerous streams including the course of the tranquil Foundry Brook. Also important is the mixed working farmland set within neatly clipped hedges, distinct rural settlement pattern of scattered farmsteads and hamlets and strong overriding rural character. The wayside commons and pattern of winding sunken lanes contribute to this rural character.”* The LCA also notably describes the hamlets of Grazeley and Poundgreen as being associated with a built form *“distinctive for its half-hipped roofs and use of traditional red brick with weatherboarding on agricultural buildings. The use of clay tiles, along with the soft red brick, also adds a warmth to the landscape. Thatch is also a feature of this area, reflecting its association with the Kennet and proximity to reed beds.”*

In **conclusion**, significant sensitivities have been highlighted for all of the strategic site options, and it is not possible to differentiate between them with any confidence on the basis of the available evidence. There is some reason to suggest that East of Twyford/Ruscombe stands out as most constrained, in particular given the Green Belt constraint; however, there is no certainty, ahead of further detailed work to consider the possibility of establishing a robust Green Belt boundary and also offset impacts through compensatory improvements to the environmental quality and accessibility of remaining Green Belt land (as per NPPF para 138, also noting para 141 which discusses the importance of accessibility, landscape vale and biodiversity).

Transportation

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
3	3	2	3	1	1	1

Discussion

From a 'transport' perspective there is merit to favouring large mixed use schemes that will support a degree of self-containment, i.e. a situation whereby residents' need to travel beyond the local area (where trips can often be made by walking / cycling) is minimised. Such schemes can also support good access to high quality transport infrastructure (with capacity), in particular public transport infrastructure, such that longer trips (in particular commuting trips at peak times) can be made in such a way that per capita greenhouse gas emissions and traffic congestion (with associated pollution and impacts to economic productivity) are both minimised.

Having made these initial points it is appropriate to highlight **Grazeley** as performing strongly. As discussed above, under the 'accessibility' heading, the scale of the scheme would lead to an economy of scale - and resulting ability to deliver infrastructure upgrades as well as a full mix of uses (i.e. uses other than residential, which deliver lower financial returns) – that has scant precedent nationally. Focusing on transport infrastructure upgrades, whilst there is no certainty at this early stage (including on the basis that a Government decision on HIF funding is pending), the scheme *could potentially* deliver, or enable delivery of significant infrastructure, including:

- a bridge over the M4 to connect to Green Park;
- improvements to the A33 and Junction 11 of the M4;
- an extension to the existing Mere oak park and ride and a new park and ride facility;
- extension of the Reading rapid public transport network to facilitate access to Green Park and Mortimer stations and, in turn, Reading town centre; and
- a potential new rail station (subject to further analysis and assessment).

More generally, it is fair to highlight the merit of growth in close proximity to the intersection of two strategic transport corridors, namely the M4 and A33, albeit it is recognised that M4 J11 is under pressure from growth at the nearby SDLs and in Reading. It is also recognised that there are climate change mitigation arguments for *not* locating growth in proximity to the strategic road network.

The other strategic site option located in close proximity to M4 / A33 junction is **Shinfield Parish SDL Expansion**. The three component sites are all small in comparison to Grazeley, such that there will be very limited opportunity to fund and deliver new transport upgrades, which, in turn, suggests the potential for additional pressure on existing transport infrastructure including M4 J11. However, on the other hand, the SDL is benefiting from an enhanced bus service, and further growth could help to maintain and potentially enhance this service. In addition, as discussed above under the 'accessibility' heading, all three sites are well located in respect of supporting walking and cycling to services and facilities, and also major employment areas.

The other strategic site option that is relatively well located in terms of proximity to strategic transport infrastructure is **East of Twyford/Ruscombe**. The potential to deliver a new town centre relief road (or at least partial relief road) has already been discussed above, as has the potential to deliver a new secondary school and district centre. Another key consideration is proximity to Twyford station, which already benefits from a good rail service to London Paddington and Reading/Oxford (also the branch line to Henley), and which is set to see a significantly enhanced service by 2021/22 upon arrival of Crossrail/Elizabeth line services that will link directly to key destinations within London, including Liverpool Street and Canary Wharf. The scheme could also potentially facilitate delivery of a new multi-storey car park for the rail station (although this is uncertain, with the site considered by the Growth Scenarios Report – see Figure J – comprising part of a well-used recreation ground) and could also potentially support enhancements to the A4 corridor, with the Growth Scenarios Report suggesting the possibility (albeit highly uncertain) of a new Reading Park and Ride facility.

The remaining two strategic site options has less merit in 'transport' terms, reflecting both scale and locational considerations. Both **Barkham Square** and **Hall Farm** are relatively poorly located in respect of accessing mass / rapid public transport and also the strategic road network, hence there would be a concern regarding car

dependency and resulting high per capita greenhouse gas emissions from transport and traffic congestion, including at M4 J11, along rural lanes, through villages and along the B3349 into Wokingham. Furthermore, there is a need to consider uncertain in combination impacts with committed growth at the nearby SDLs.

In **conclusion**, Grazeley and East of Twyford/Ruscombe may represent significant opportunities to deliver growth in such a way that minimises need to travel and car dependency, and hence ultimately minimises per capita greenhouse gas emissions from transport and also traffic congestion; however, there is much uncertainty ahead of further detailed work. Equally, it is appropriate to highlight uncertain negative effects for Barkham Square and Hall Farm.

Water

Barkham Square		Shinfield Parish SDL Expansion	Hall Farm	East of Twyford/Ruscombe		Grazeley
500	750	976	1,000	c.2,000	c.3,000	15,000
?	?	?	?	?	?	?

Discussion

With flooding already having been a focus of discussion above, there is a remaining need to consider:

- Water resources** - Wokingham Borough is covered by three water resource zones (WRZ), two of which are supplied by Thames Water (TW); Henley and Kennet, and one by South East Water (SEW); WRZ04. The Wokingham Borough Water Cycle Study (WCS) Scoping Report (January 2019) concluded: “As there is a water surplus predicted across all three water resource zones until 2050, and there is sufficient time to adjust the long-term plan to include emerging trends in population, no further assessment of water resources is required in a phase two outline study.”
- Water supply infrastructure** – the WCS Scoping Study (2019) concludes: “*Early developer engagement with SEW and TW is essential to ensure that, where necessary, network reinforcement is delivered prior to developments becoming occupied. Further modelling of the water supply network is required once a preferred options list is defined.*”
- Wastewater collection infrastructure** - Thames Water provide wastewater services to the whole of the Wokingham study area. The WCS Scoping Study (2019) concludes: “Areas with the least capacity include the north east and west of Woodley CP, Wargrave, Twyford south of the railway line, Hurst, northern Winnersh CP, Three Mile Cross, Arborfield, the western part of Finchampstead CP, and Riseley. Areas with the most capacity include central Woodley, and Early, Wokingham and Barkham. Further modelling of the wastewater network may be required once a preferred options list is defined.”
- Wastewater treatment capacity** – as part of the WCS Scoping Study (2019) flow permit assessments were carried out at all of the WwTW that are expected to serve growth in the Local Plan period. The study concluded: “*Bracknell, Reading, and Sandhurst WwTWs have sufficient capacity to serve all of the sites identified in those catchments in the call for sites process. Easthampstead Park has capacity but is very close to its DWF permit limit and could exceed this should additional sites be identified. Wargrave WwTW can accommodate up to 80% of the sites identified but would exceed its permit level should growth exceed this. Arborfield WwTW has the capacity to accommodate the 20% growth scenario, but growth above this level would require an increase to the DWF permit and a capacity upgrade... o further assessment of wastewater treatment infrastructure is required as part of a phase 2 study; however, the flow permit assessment should be re-visited once a preferred options list of sites is defined.*”
- Water quality** - increased wastewater discharges at the WwTWs serving growth in Wokingham have the potential to impact downstream water quality in the receiving watercourses. The WCS Scoping Study (2019) concludes: “*In the case of Bracknell, Easthampstead Park and Sandhurst WwTWs an assessment has been completed as part of the Bracknell Forest Phase 2 WCS (2018) and concluded that the proposed growth could be accommodated with a tighter permit and treatment at the Technically Achievable Limit. This level of growth assessed was comparable or higher than currently forecast so this assessment does not need to be repeated. For Easthampstead Park and Sandhurst WwTWs they would be included in a catchment scale model of the River Loddon. Detailed water quality modelling has not been conducted at Arborfield or Wargrave, and the level of growth currently forecast at Reading and Ash Ridge WwTW has not been assessed. A water quality assessment is therefore required at these WwTW. Further assessment of water quality from increased wastewater*

discharges at Arborfield, Ash Ridge, Reading and Wargrave WwTW should be undertaken as part of a Phase 2 Water Cycle Study.”

- **Flood risk from additional foul flow** - a detailed assessment of flood risk can be found in the Wokingham Borough Council Level 1 Strategic Flood Risk Assessment (SFRA). The impact of increased discharges of treated wastewater effluent flows due to planned growth was quantified and is not predicted to have a significant impact on flood risk in any of the receiving watercourses.
- **Odour from WwTW** - The WCS Scoping Study (2019) concludes: *“36 sites are close enough to a WwTW that a further odour assessment is recommended as part of the planning process. The cost of this should be met by the developer.”*
- **Environmental constraints** - The WCS Scoping Study (2019) concludes: *“A number of SSSIs exist within Wokingham Borough, and there is a possibility of point source pollution (from WwTW) or diffuse pollution (for example from surface runoff from development) to impact these sites. Opportunities exist to mitigate this through implementation of SuDS schemes to manage surface runoff. The impact of WwTW on water quality should be assessed in a Phase 2 Study.”*

In **conclusion**, the available evidence – namely the WCS Scoping Study (2019) – does not enable confident differentiation between the competing site options. Growth loading pressure on Wargrave WwTW and (in particular) Arborfield WwTW potentially leads to a degree of concern, and it is also noted that the Twyford Brook stands-out as the only watercourse in the Borough that is assigned ‘poor’ status under the Water Framework Directive (see Figure XXX in Appendix III, above); however, there will be good potential to deliver upgrades to WwTWs and also high quality SuDS. With regards to Grazeley, there is much uncertainty at the current time, although it is noted that the representation received from the site promoters through the Homes for the Future Consultation (2018) suggested the potential for “major water and utility infrastructure improvements”.

There will be a need to consider the possibility of further detailed work to inform the Local Plan Update, albeit it is recognised that many water environment issues/impacts can be appropriately dealt with at the development management stage.

Conclusion on strategic site options

	Barkham Square		Shinfield Parish SDL Expans'n	Hall Farm	East of Twyford/Ruscombe		Grazeley
	500	750	976	1,000	c.2,000	c.3,000	15,000
Accessibility	3	3	2	3	2	2	★1
Air and wider env quality	3	3	3	3	2	★1	3
Biodiversity	2	2	3	★1	2	3	2
Climate change adaptation	★1	★1	2	★1	★1	3	3
Climate change mitigation	6	5	6	4	3	2	★1
Communities	2	2	3	2	3	3	★1
Economy	2	2	2	2	2	2	★1
Historic environment	2	2	★1	2	3	4	★1
Housing	2	2	2	2	★1	★1	2
Land, soils and natural resources	★1	★1	3	2	4	4	3
Landscape	=	=	=	=	=	=	=
Transportation	3	3	2	3	★1	★1	★1
Water	?	?	?	?	?	?	?

Concluding discussion

The appraisal serves to highlight **Grazeley** as performing well in terms of several objectives, including “accessibility” (the scheme would deliver a new town centre and two new secondary schools, amongst an extensive list of infrastructure) and “economy” (none of the other shortlisted strategic site options would deliver significant new employment land). However, there are notable draw-backs in terms of “land” (development would lead to significant loss of best and most versatile agricultural land) and “climate change adaptation” (the site is significantly constrained by flood risk, albeit there will be good potential to avoid flood risk through masterplanning). There is also a significant concern in respect of “landscape” impacts, although it is not possible to conclude that Grazeley is any more constrained than the other competing site options in this respect. There are also less significant concerns in respect of “biodiversity” (e.g. the site contains a large area of Wood Pasture and Parkland priority habitat) and “housing” (as a large and complex site necessitating major upgrades to infrastructure there is inherently a risk of unforeseen delays to delivery, with knock on ramifications). There are also a range of uncertainties at the current time, including in respect of “climate change mitigation” (it is not clear that the site is suited to delivery of decentralised low carbon heat/power generation), the “historic environment” (e.g. there is likely to be archaeological constraint, reflecting areas of easily worked soils that supported early settlement), “transportation” (e.g. there is uncertainty regarding the precise form of mass transit that is achievable) and “water” (wastewater treatment capacity remains uncertain, and hence there is a risk of capacity breaches leading to pollution of water courses).

The appraisal also highlights **East of Twyford/Ruscombe** as having merit in certain respects, but also some significant drawbacks, particularly under a higher growth (c.3,000 home) scenario. The site stands-out as performing well in respect of “housing” (as a larger site - i.e. a site capable of delivering a good mix of housing - associated with relatively low delivery risks - and noting that the north of the Borough has seen lower housing growth over recent years and has relatively low committed growth) and “air quality” (the scheme would deliver a new town centre relief road or, at least, *partial* relief road). The site also performs well in terms of “accessibility” and “transport”, in a similar fashion to Grazeley, as a larger site option well-located in terms of proximity to a higher order centre and strategic transport infrastructure (although there is little certainty regarding community infrastructure delivery). However, the site is significantly constrained in “historic environment” and “communities” terms given the inevitability of impacts to Ruscombe (where there is a designated conservation area), and development would likely lead to the loss of significant grade 2 (i.e. second highest quality nationally) agricultural land. Other issues/concerns relate to biodiversity and flood risk (particularly under a higher growth scenario involving development to the south of the railway line) and landscape (noting that this is a chalk influenced landscape, notably distinct from landscapes to the south).

The other strategic site options are smaller, and, accordingly, relatively unconstrained in certain respects, but would deliver less in the way of a mix of uses and new / upgraded infrastructure. **Barkham Square** and **Hall Farm** are also relatively poorly located from a transport connectivity perspective. With regards to **Shinfield Parish SDL Expansion**, there is some reason to suggest that there could be merit in strategically planning for the completion of development within this part of the Borough (south of the M4, east of the A33, north of the River Loddon); however, the expansion options identified are somewhat piecemeal, and there is an argument for allowing the SDL time to ‘bed in’ ahead of considering expansion options.

Appendix V: GIS analysis of site options

Introduction

As discussed at paragraphs 4.10 and 5.55, site options were subjected to analysis using a Geographical Information System (GIS), as a means of gathering information to inform the selection of reasonable alternatives for appraisal. The aim of this appendix is to: 1) explain the appraisal methodology; and then 2) present the outcomes of the GIS analysis.

N.B. it is important to re-emphasise a point made at paragraph 5.5, namely that it was the Council's HELAA that was the main vehicle for considering the merits of non-strategic site options (i.e. site options other than those discussed above within Appendix IV), and that the aim of this analysis is only to present supplementary analysis. It was the Council's HELAA (also discussions between the Council and AECOM) that informed a decision regarding which sites to discuss within the sub-area-specific sections within Section 5, above, and ultimately which sites to progress to formal appraisal, namely appraisal of the reasonable spatial strategy alternatives.

Methodology

It was not possible to simply appraise all site options using the SA framework (i.e. the list of SA topics/objectives presented in Table 3.1, above), in the manner of the strategic site options appraisal presented above (Appendix IV) and the appraisal of reasonable spatial strategy alternatives presented below (Appendix VI).

This is on the basis of site options being numerous (there are 277 site options) and limited data availability (i.e. there is not a sufficiently fine grained and consistent understanding of how baseline issues/opportunities vary across the Borough, to enable the merits of all competing site options to be differentiated with confidence).

As such, work was undertaken to develop a GIS methodology suited to site options appraisal. The methodology essentially involves measuring the spatial relationship (in terms of distance and/or percentage overlap) between all site options and features within the landscape for which mapped data (i.e. a GIS 'layer') is available.

All distances are measured as a straight line, i.e. 'as the crow flies'. It is recognised that this is a limitation, and there will be the potential to calculate distances by travel route as part of future work.

The aim was to develop a methodology that reflects the SA framework as closely as possible; however, there are inevitably data gaps, and therefore limitations to the methodology. These limitations are discussed further below, under each of the SA framework headings.

Accessibility

Table A reports the proximity of all site options to a GP surgery. Data was also available to show the proximity of site options to a library; however, this was considered less important, and so is not reported. It is recognised that there is the potential to undertake further work to gather GIS data for schools and other community facilities.

The performance of site options is categorised on a Red/Amber/Green (RAG) scale as follows:

- **GP surgery** - sites are coded on a relative basis according to distance, where the closest site is assigned **green** and the site furthest away is assigned **red**.

Air and wider env quality

Table A reports the proximity of all site options to an Air Quality Management Area (AQMA) and also to the outer safety hazard zone associated with AWE Burghfield. Data is also available for contaminated land; however, this dataset requires further investigation before being used for site assessment purposes.

The performance of site options is categorised on a RAG scale as follows:

- **AQMA** - sites are coded on a relative basis according to distance, where the closest sites (24 sites intersect or are adjacent) are assigned **red** and the site furthest away is assigned **green**.
- **Safety hazard zone** - sites intersecting are assigned **red** and the sites not intersecting assigned **green**.

Biodiversity

Table A reports the proximity of all site options to a good range of biodiversity designations.

The performance of site options is categorised on a RAG scale as follows:

- **Special Protection Area (SPA)** – sites are coded on a relative basis according to distance, where the closest site is assigned **red** and the site furthest away is assigned **green** (N.B. just one site is within 400m).
- **Site of Special Scientific Interest (SSSI)** - sites are coded on a relative basis according to distance, where the closest sites (four sites are adjacent to a SSSI) are assigned **red** and the site furthest away is assigned **green**.

N.B. there is an error in the table in that sites are categorised on a red – whist – green scale, as opposed to a red – amber – green scale. This will be remedied subsequent to the consultation.

- **Local Wildlife Site (LWS)** - sites are coded on a relative basis according to distance, where the closest sites (45 sites intersect or are adjacent) are assigned **red** and the site furthest away assigned **green**.
- **Priority habitat** - sites are coded on a relative basis according to percentage intersect, where sites intersecting the most are assigned **red** and sites intersecting least (220 sites do not intersect) assigned **green**.
- **Biodiversity Opportunity Area (BOA)** - sites intersecting are assigned **amber** and the sites not intersecting assigned **green**.
- **Tree Protection Order (TPO)** - sites are coded on a relative basis according to percentage intersect, where sites intersecting the most are assigned **red** and sites intersecting least (289 sites do not intersect) assigned **green**.

Climate change adaptation

Data is available for both fluvial and surface water flood risk. The Council recognises that there will be a need for further work to explore flood risk ahead of plan finalisation.

The performance of site options is categorised on a RAG scale as follows:

- **Flood Zone (FZ)** - sites are coded on a relative basis according to percentage intersect with FZ2, where sites intersecting the most are assigned **red** and sites intersecting least (258 sites do not intersect) assigned **green**.
- **Surface water flood risk (SWFR)** - sites are coded on a relative basis according to percentage intersect with the 1 in 1000 year SWFR zone, where sites intersecting the most are assigned **red** and sites intersecting least (31 sites do not intersect) assigned **green**.

Climate change mitigation

There is no GIS data available to enable site options to be appraised in respect of this objective. Whilst some site options may well have greater potential to incorporate on-site low carbon and renewable energy technologies (including on account of the scale and density of development or the terrain and aspect of the site), or link to a decentralised source of low carbon / renewable energy, there is insufficient evidence to enable robust analysis.

Communities

Other than the matters already considered above, under the 'accessibility' heading, there is limited potential to use GIS to appraise site options in respect of this objective. One matter is proximity to an Strategic Development Location (SDL), recognising that there is a desire to enable the new communities to 'bed in'.

The performance of site options is categorised on RAG scale as follows:

- **SDL** - sites are coded on a relative basis according to distance, where the closest sites (38 sites intersect or are adjacent) are assigned **red** and the site furthest away assigned **green**.

Economy

There is limited GIS data to enable an appraisal of site options in respect of this objective.

The performance of site options is categorised on a RAG scale as follows:

- **Employment area** - sites intersecting are assigned red and then remaining sites are coded on a relative basis according to distance, where the closest sites are assigned green and the site furthest away assigned red.

Historic environment

Table A reports the proximity of all site options to a good range of historic environment designations.

The performance of site options is categorised on a RAG scale as follows:

- Listed building (**LB**) - sites are coded on a relative basis according to distance, where the closest sites (eight sites intersect or are adjacent) are assigned red and the site furthest away assigned green.
- Conservation Area (**CA**) - sites are coded on a relative basis according to distance, where the closest sites (16 sites intersect or are adjacent) are assigned red and the site furthest away assigned green.
- Registered Park or Garden (**RPG**) - sites are coded on a relative basis according to distance, where the closest site is assigned red and the site furthest away assigned green.
- Scheduled Monument (**SM**) - sites are coded on a relative basis according to distance, where the closest sites (3 sites intersect or are adjacent) are assigned red and the site furthest away assigned green.

Housing

There is no GIS data available to enable site options to be appraised in respect of this objective. It would not always be appropriate to suggest that a large site performs better than a small site simply because there is the potential to deliver more homes. Housing objectives could be met through the delivery of numerous small sites, or through delivery of a smaller number of large sites (albeit it is recognised that financial viability, and hence the potential to deliver affordable housing, can be higher at large sites).

Land, soils and natural resources

Table A reports the proximity of all site options to a good range of designations.

The performance of site options is categorised on a RAG scale as follows:

- **Agricultural land** – the 12 sites intersecting land shown to be of grade 1 quality by the nationally available (low resolution) dataset are assigned red, and a further 24 sites intersecting land shown to be of grade 2 quality assigned amber. Other sites are assigned green.
- Minerals Safeguarding Area (**MSA**) - sites intersecting are assigned amber and the sites not intersecting green.

Landscape

There is no GIS data available to enable site options to be appraised in respect of this objective. A landscape character areas are defined in GIS; however, they are not differentiated according to sensitivity.

Transportation

There is no GIS data available to enable site options to be appraised in respect of this objective. There will be the potential to gather GIS data subsequent to the current consultation, e.g. proximity to a train station / bus stop.

Water

No data is available to enable GIS analysis of the site options in terms of water quality. Whilst water pollution sensitivity may vary spatially (including relating to issues associated with the capacity of Wastewater Treatment Works), there is limited available mapped data. It is also the case that issues can often be appropriately addressed through masterplanning/ design measures, and so are appropriately considered at the planning application stage. The same can be said for drainage issues.

In terms of water resource availability, this does not vary significantly within the Borough, and hence need not be a consideration here. It is also not possible to appraise site options in terms of the potential to support water efficiency. Whilst it might be suggested that larger development schemes might be more able to deliver higher standards of sustainable design (including water efficiency measures) this assumption will not always hold true.

Finally, it is unnecessary to appraise site options in terms of groundwater 'source protection zones' and 'primary aquifers'. The presence of a groundwater source protection zone or aquifer does not represent a major constraint for most (non-polluting) types of development.

Findings of the GIS analysis

Table B presents an appraisal of all site options in terms of all the appraisal criteria introduced above.

Notes on the table -

- All sites considered through the Council's HELAA are shown.
- Additionally, a number of sites that are not considered by the HELAA on the basis that they now have planning permission area also shown.
- Sites are listed by Parish and then in size order.
- Proposed allocations are highlighted in **dark green** whilst shortlisted omission sites that feature in the reasonable spatial strategy alternatives are highlighted in **light green**.
- Also, sites that are taken to be 'committed', in that they benefit either from planning permission or an existing allocation that safely be rolled forward are highlighted in **grey**.
- Whilst the great majority of sites are being proposed/considered for housing, some are being proposed for other forms of development (e.g. employment) or open/greenspace.
- To reiterate the point made above, there is an error in "SSSI" column of the table in that sites are categorised on a red – whist – green scale.

Table B: Summary findings of the GIS analysis

Name	Ref	Parish	GP surgery	AQMA	Hazard zone	SPA	SSSI	LWS	Priority hab	BOA	TPO	FZZ	SWFR	SDL	LB	CA	RPG	SM	Agri land	Minerals
Land at Arborfield	5AR015	Arborfield	Green	Red	Green	Orange	Light Green	Red	Yellow	Orange	Yellow	Green	Green	Red	Red	Red	Orange	Orange	Green	Orange
Ducks Nest Farm and Chamberlain's Farm	5AR012	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Red	Red	Orange	Orange	Green	Orange
Lockey Farm, Sindlesham Road	5AR020	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Red	Red	Orange	Orange	Green	Orange
Land west of Mole Road	5AR014	Arborfield	Green	Red	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Red	Red	Orange	Yellow	Green	Orange
Land to the South of School Road	5AR008	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land to the North of School Road	5AR007	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Targetts Farm, Eversley Road	5AR018	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land to the North of Reading Road	5AR001	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Orange
Cloud Stables, Church Lane	5AR002	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land off Betty Grove Lane	5AR011	Arborfield	Green	Red	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Yellow	Green	Orange
Land South of School Road	5AR010	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land North of School Road	5AR009	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land to the south of Bridge Farm Business Park	5AR024	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Orange
Land on the south side of Reading Road	5AR006	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Orange
Land to the rear of The Copse, Eversley Road	5AR013	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Ridgefield Farm, Reading Road	5AR005	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land north of Barkham Road	5BA026	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Bound Oak Industrial Estate	5AR019	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land at Church Lane	5AR003	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Orange
Land at Reading Road	5AR004	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Highview (21 Highfield Park), Eversley Road	5AR017	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Redwood	5AR023	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Langley Pond Farm Livery Stables	5AR021	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land adjoining Hunters Point, Hughes Green	5AR016	Arborfield	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Barkham Square	5BA010	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land at Highland Avenue	5BA018	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Yellow	Green	Orange
Reading Football Club Training Ground, Hogwood Park, Park Lane	5BA012	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Willow Farm, School Road	5BA016	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Model Farm, Barkham Ride	5BA009	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land to the rear of 178 Bearwood Road	5BA027	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Yellow	Green	Orange
The Bungalow, Edney hill	5BA004	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Oakwood View/ Land between 30 and 32 Langley Common Road	5BA014	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land off Langley Common Road	5BA030	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land off Barkham Street	5BA008	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Land at Barkham Manor	5BA002	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Wrens Nest Stables, Barkham Road	5BA019	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Woodlands Farm, Wood Lane	5BA013	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green
Langley Pond Farm Paddocks	5BA028	Barkham	Green	Yellow	Green	Orange	Light Green	Red	Yellow	Green	Yellow	Green	Green	Red	Yellow	Red	Orange	Orange	Green	Green

Land at Bull Lane	5SW011	Swallowfield	
Land at Part Lane	5SW012	Swallowfield	
Land on the NE side of Part Lane and the SW side of Church Road	5SW001	Swallowfield	
Land adjoining The Lodge, Taylors Lane	5SW003	Swallowfield	
Land Adjoining Lambs Farm Business Park	5SW013	Swallowfield	
Land south of The Street and west of Trowes Lane	5SW007	Swallowfield	
Land at Basingstoke Road	5SW002	Swallowfield	
Land to the east of Basingstoke Road and south of The Street	5SW018	Swallowfield	
Land at Swallowfield	5SW021	Swallowfield	
Land at Fairlands, Church Road, Farley Hill	5SW014	Swallowfield	
Arkley, Lambs Lane	5SW008	Swallowfield	
Uplands and Land Adjacent to uplands, Basingstoke Road, Swallowfield.	5SW017	Swallowfield	
Land north of the A4	5TW007	Twyford	
Land at Bridge Farm	5TW010	Twyford	
Land at Bridge Farm	5TW005	Twyford	
Land West of Twyford	5TW009	Twyford	
Land West of Hurst Road	5TW006	Twyford	
134 Wargrave Road	5TW008	Twyford	
Land North of A4 New Bath Road and west of A321 Wargrave Road	5TW011	Wargrave	
Hare Hatch Garden Centre, Floral Mile, Hare Hatch.	5WA008	Wargrave	
Hare Hatch Sheeplands	5WA002	Wargrave	
Land to the South of Bath Road	5WA004	Wargrave	
Primrose Nursery, London Road	5WA007	Wargrave	
Primrose Nursery, London Road	5WA003	Wargrave	
Land at the Eastern end of 'The Old House'	5WA006	Wargrave	
Land adjoining Bear Cottage, Milley Lane, Hare Hatch, RG10 9TL	5WA009	Wargrave	
Sheeplands Farm, New Bath Road	5WA010	Wargrave & Twyford	
Land West of Wargrave Road and North of the A4 New Bath Road	5WA005	Wargrave & Twyford	
Home Farm, Bearwood Road	5WI007	Winnersh	
Hatch Farm	5WI015	Winnersh	
Land off Poplar Lane and Watmore Lane	5WI004	Winnersh	
Land off Maidensfield	5WI006	Winnersh	
Winnersh Farm, Watmore Lane, Winnersh, Wokingham, RG41 5NW	5WI010	Winnersh	
Winnersh Garden Centre, Reading Road	5WI005	Winnersh	
Land on the North West Side of Old Forest Road	5WI009	Winnersh	
Millennium Arboretum, to rear of 22-28 Wayside, off Old Forest Road	5WI013	Winnersh	
Land to the rear of Bulldog Garage, Reading Road, Wokingham, RG41 5AG	5WI012	Winnersh	
Winnersh Plant Hire	5WI008	Winnersh	
Land at Hatch Farm	5WI001	Winnersh	
Land at Hatch Farm	5WI002	Winnersh	
69 King Street Lane, Winnersh, RG41 5BA	5WI014	Winnersh	
Holmewood House	5WI017	Winnersh	
Wheatsheaf Close	5WI011	Winnersh	
9 Winnersg Gate	5WI016	Winnersh	
498 Reading Road	5WI003	Winnersh	
Land at Blagrove Lane	5WK028	Wokingham	

Appendix VI: Alternatives appraisal

Introduction

This appendix presents detailed appraisal findings in respect of the reasonable spatial strategy alternatives presented in Tables 5.4 and 6.1, above. Table 6.1 is reproduced below.

The reasonable spatial strategy alternatives (summary)

Source of supply	Number of homes (inc. 24 Gypsy and Traveller pitches)								
	Opt 1	Opt 2	Opt 3	Opt 4	Opt 5	Opt 6	Opt 7	Opt 8	Opt 9
Commitments and windfall	11840	11840	11840	11840	11840	11840	11840	11840	11840
Allocations within A4 corridor	330	1830	1830	1830	1830	1830	1830	330	330
Allocations south of the M4, west of the A33	0	0	0	0	0	0	0	3750	3750
Allocations south of the M4, east of the A33	976	15	211	15	211	976	976	15	15
Allocations in Arborfield area	655	155	155	655	655	155	655	155	655
Allocations elsewhere	712	727	727	727	727	727	727	727	727
Total	14513	14552	14748	15052	15248	15513	16013	16802	17302
Total p.a.	806	808	819	836	847	862	890	933	961

Also, the reasonable alternatives can be described in shorthand as follows:

- Option 1 - Expansion of Shinfield Parish SDL (or “**SDL**”) plus Barkham Square (or “**Barkham**”)
- Option 2 - Expansion east of Twyford/Ruscombe in the A4 corridor (or “**A4**”)
- Option 3 - “**A4**” plus allocation of HELAA suitable sites in Shinfield Parish (or “**HELAA**”)
- Option 4 - “**A4**” plus “**Barkham**”
- Option 5 - “**A4**” plus “**HELAA**” plus “**Barkham**”
- Option 6 - “**A4**” plus “**SDL**”
- Option 7 - “**A4**” plus “**SDL**” plus “**Barkham**”
- Option 8 - **Grazeley**
- Option 9 - **Grazeley** plus “**Barkham**”

Finally, it is helpful to highlight the distinction between Options 1 to 7, which would involve a spatial strategy involving only the expansion of existing settlements / SDLs, and Options 8 and 9 which would involve a focus on a new garden town at Grazeley.

Appraisal methodology

Appraisal findings are presented below within 13 separate tables, with each table dealing with a specific sustainability topic (see Section 3). Within each table the performance of alternatives is categorised in terms of 'significant effects' (using **red** / **amber** / **green**) and also ranked in order of preference.

Every effort is made to predict effects / differentiate the alternatives accurately; however, this is inherently challenging given the high level nature of the policy approaches under consideration. The ability to predict effects / differentiate accurately is also limited by understanding of the baseline (now and in the future under a 'no plan' scenario). In light of this, there is a need to make considerable assumptions regarding how scenarios will be implemented 'on the ground' and what the effect on particular receptors will be. Where there is a need to rely on assumptions in order to reach a conclusion on a likely effect, this is made explicit in the appraisal text.

Finally, it is important to note that effects are predicted taking into account the criteria presented within Regulations (Schedules 1 and 2). For example, account is taken of the duration, frequency and reversibility of effects. Cumulative effects are also considered (i.e. the effects of the plan in combination with other planned or on-going

Appraisal findings

The tables below presents appraisal findings in relation to the reasonable spatial strategy alternatives.

Accessibility

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
6	2	5	5	5	3	4	1	3

Discussion

All of the sites that area a variable across the reasonable spatial strategy alternatives would benefit from economies of scale that lead to funds being made available to deliver, or make land available for, community infrastructure and this will particularly be the case for **Grazeley**, which stands out as by far the largest of the strategic site options. It is anticipated that a 15,000 home new settlement at Grazeley would deliver a new town centre, two secondary schools, seven primary schools, a medical hub and what the site promoters describe as "the largest park in south east England since the London Olympic Park". This is over-and above the extensive 'grey' infrastructure that would be delivered as part of the scheme, which is discussed further below. The effect of delivering extensive new community infrastructure alongside new homes will be that new residents benefit from excellent 'accessibility' and also that additional pressure on existing facilities in the Borough, and in Reading, will be minimised. It is also fair to say that residents of any new settlement at Grazeley would have very good access to higher order community services and facilities in Reading, via high quality transport connections, as discussed below.

The variable options of expansion east of Twyford/Ruscombe and expansion of the Shinfield Parish SDL also perform relatively well in respect of access to both new and existing (or committed) community infrastructure:

- East of Twyford/Ruscombe (or "A4") - the Growth Scenarios Report assumes delivery of a new 'mixed use centre' to including a secondary school under both the c.2,000 home and c.3,000 homes scenarios; however, the representation received from the site promoters to the Homes for the Future consultation (2018) does not commit to any particular community infrastructure delivery (but does discuss delivery of a new relief road and also a new station car park, both of which would prove costly). With regards to access to existing community infrastructure, it is important to note that that Twyford is a tier 1 settlement with a range of services and facilities not far below the Borough's main centres (Earley, Winnersh, Wokingham, Woodley). A secondary school would be nearby to the northern part of the site; however, the town centre would be beyond 1,200m distant from most parts of the site, and some parts could be beyond 2km under a scenario whereby development stretches to the east (a scenario favoured by the site promoters). Another consideration is good accessibility to higher order services and facilities in Reading by train, with potential locations for housing to the south of the railway line (under a c.3,000 home scenario) within 800m of the station. Good bus connectivity to Reading along the A4 is another benefit, as discussed below.

- Shinfield Parish SDL expansion - growth option comprises a collection of individual schemes, and hence there are limitations in respect of achieving economies of scale; however, on the other hand, expansion could potentially contribute to the aims and objectives of the SDL as a whole, potentially leading to a more balanced (between Shinfield and Spencers Wood) SDL that involves comprehensive planning for this corner of the Borough (south of the M4, east of the A33, west of the river valley) as a whole. These matters have not been explored in any detail to date but could potentially be a focus of further work.

With regards to the component parts of the expansion: the promoters of the largest individual scheme (southeast of Spencers Wood), which would come forward under the “M4 SDL H” spatial strategy options only, have suggested that land could be made available for a primary school and that the scheme would deliver a 12ha SANG parkland and 1ha sports pitches (although their assumption was that the site would deliver 625 homes, as opposed to the 540 currently assumed); the other schemes, namely west of Spencers Wood (which would come forward under the “M4 SDL H” spatial strategy options only) and South of Shinfield (which would come forward under both the “M4 SDL L” “M4 SDL H” spatial strategy options), would deliver only children’s play space and strategic open space (‘strategic’ on the basis that, in both instances, there would be good potential to link to adjacent SANG); and all three schemes are well located, with the eastern site being mostly within 400m of the expanding Shinfield district centre, and the two western sites in very close proximity to Spencers Wood local centre. Furthermore, there is very good bus connectivity with Reading, following recent SDL related enhancements.

As for **Barkham Square**, the masterplan submitted by the site promoters includes a parkland in order to ensure sufficient SANG, but nothing else by way of community infrastructure, other than children’s play space. The Growth Scenarios Report suggests that a 750 home scheme on the site (see Figure B) might deliver a primary school, but with some uncertainty, and the representation received from the site promoters to the Homes for the Future consultation (2018) does not mention delivery of a school (nor land being set aside for a school). The site is located adjacent to the Arborfield Garrison SDL, which is delivering a new local centre c.400m from the edge of the site and a new district centre c.1,200m distant; however, on balance the site cannot be considered well connected relative to the strategic site options discussed above. Wokingham town centre is c.5km distant to northeast but is connected only via the B3349.

In **conclusion**, the variable sites can be placed into three tiers of performance, which correlates with the scale of growth that could be achieved at each location, although inherent locational considerations are also a factor. The order of preference that emerges reflects a desire to concentrate growth at those better performing growth locations and avoid growth at those locations that perform less well. The total quantum of growth delivered borough-wide does not have a bearing on the order of preference.

With regards to **effect significance**, it is fair to conclude that spatial strategy options involving a concentration of growth at Grazeley or (to a lesser extent, noting uncertainty regarding secondary school delivery) at a strategic expansion to the east of Twyford/Ruscombe could lead to significant positive effects. This conclusion is reached despite the fact that the site options that are a constant across all of the reasonable spatial strategy alternatives (as opposed to those that are a variable) are all smaller sites that will deliver little in the way of new or upgraded community infrastructure. With regards to the worst performing option, it is appropriate to flag the risk of uncertain significant negative effects, as the situation would be one whereby the Local Plan allocations deliver significant additional housing without delivering/facilitating significant new community infrastructure.

Air and wider env quality

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
2	1	1	1	1	1	1	2	2

Discussion

A key consideration here is the need to avoid worsening of air quality - and ideally achieve improvements to air quality - within the three key air pollution hotspots locally, namely Reading (where an AQMA covers the town centre and beyond), Wokingham (where an AQMA follows the main roads through the town centre) and Twyford (where an AQMA is associated with the town centre crossroads).

It follows that there is a need to focus attention on East of Twyford/Ruscombe (or “**A4**”), as the ‘variable’ strategic site in closest proximity to an AQMA, and also noting a concern that traffic congestion in Twyford could worsen as a result of increased commuter traffic following the arrival of Crossrail services (to and across central London) in 2021. An assumption central to consideration of strategic growth here is that any scheme would deliver a new relief road, which would enable some traffic (specifically traffic approaching Twyford from the east, along the A4, and heading towards Wokingham to the south) to bypass the town centre cross-roads AQMA. There is considerable support for a relief road, which would also be in accordance with wider urban realm objectives for the town centre. A larger scheme, potentially involving housing to the south of the railway line (as well as to the north), might allow for a straighter / more direct road alignment; however, there is no certainty in this respect, including on the basis that the ideal road alignment would cross land outside of the developers control (i.e. outside of the red-line boundary of the site – see Figure J, above). Another consideration is that a larger scheme could lead to increased likelihood of delivering a new multi-storey car park for the train station, which could assist with resolving the problem of on-street parking (and resulting impacts on traffic flows); however, there is again much uncertainty, as the potential location that has been identified is constrained / sensitive, as discussed below. It is also noted that the Growth Scenarios Report identifies the possibility of the scheme delivering or facilitating a new Reading Park and Ride site; however, there is very low certainty regarding deliverability, with the Homes for the Future consultation response received from the site promoters not referencing this as a possible benefit of the scheme.

It is more challenging to identify the potential for growth at any of the other variable sites to result in significant implications for air quality within the hotspot areas discussed above.

- The scale of growth at **Grazeley** certainly gives rise to a risk of high volumes of traffic travelling north along the A33 towards the Reading AQMA; however, there is an excellent opportunity to deliver high quality public transport (as discussed below) and an extensive range of services and facilities as part of the scheme (as discussed above), thereby minimising car movements towards the AQMA (commuting patterns are also a consideration – see discussion below).
- Shinfield Parish SDL expansion (“**M4 SDL L**” and “**M4 SDL H**”) - could also lead to an increase in car movements through the Reading AQMA, and there is also a possibility of problematic traffic congestion, and, in turn, air pollution, through Spencers Wood and Shinfield (although neither location is known to suffer from existing poor air quality), with Shinfield notably benefiting from the Eastern Relief Road.
- **Barkham Square** - is less well connected, hence car dependency might be relatively high (see discussion above, under accessibility), such that there might be a risk of problematic increases in traffic towards Wokingham along the B3349, which is associated with an AQMA at the point where it meets the A329 Reading Road (at the edge of the town centre).

Finally, with regards to other ‘environmental quality’ matters, there are limited concerns regarding noise pollution at any of the variable sites, and no known issues regarding problematic contaminated land (pending further detailed investigation). An important matter relates to the proximity of Grazeley to AWE Burghfield; however, this is a focus of discussion below, under Communities.

In **conclusion**, a primary consideration is the need to highlight spatial strategy options involving strategic expansion of Twyford/Ruscombe and associated delivery of a town centre relief road (or, at least, *partial* relief road), as performing relatively well. It is not possible to differentiate further between the other reasonable alternatives with any confidence, although it is recognised that there is an argument in support of lower growth.

With regards to **effect significance**, it is not clear that there is the potential to conclude that spatial strategy options involving strategic growth to the east of Twyford/Ruscombe would lead to significant positive effects overall. This conclusion is reached taking into account the site options that are a constant across all of the reasonable spatial strategy alternatives, in addition to those sites that are a variable. In particular, it is noted that a relatively high growth approach is supported at Charvil, which will likely result in additional traffic through the Twyford town centre AQMA. With regards to the three worst performing options, there is insufficient evidence to enable a conclusion of likely significant negative effects; however, there is some uncertainty.

Biodiversity

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
2	2	3	2	3	4	4	★1	★1

Discussion

Taking the 'variable' sites in turn (in order of scale):

- **Barkham Square** - development would, to a large extent, envelop a notable linear woodland strip associated with the northern edge of the SDL and the stream corridor that runs north/south through the site, which includes several very small patches of ancient woodland; however, the proposed masterplan (see Figure C) proposes that the stream corridor should form the centre point of a new SANG parkland.
- **Shinfield Parish SDL Expansion** - two of the three potential expansion areas are subject to notable constraint, namely east of Spencers Wood ("M4 SDL H") and south of Shinfield (both "M4 SDL L" and "M4 SDL H"). The former would lead to significant loss of an area of Wood Pasture and Parkland priority habitat, and also about a large area of woodland (non-ancient) designated as a LWS and, more generally, the entire area between Spencers Wood and the A33 appears associated with a relatively dense network of woodland belts, trees and hedgerows; however, the proposal is to extend the recently permitted adjacent SANG, and it is also noted that the adjacent recently permitted housing site (Land at Stanbury House; 55 homes) itself entirely comprises land shown (by the nationally available dataset) to comprise Wood Pasture and Parkland priority habitat. The latter expansion area (south of Shinfield) would about a cluster of three small ancient woodland patches; however, this is a matter examined in some detail within the 'vision statement' submitted by the promoters, with the suggestion that there would be the potential to "reconnect these long-separated woodland compartments", deliver "reinstatement of positive traditional management including coppicing" and "extend the Langley Meads SANG by including Tanner's Copse". The final expansion area (southeast of Shinfield) appears notably unconstrained in strategic biodiversity terms, drawing upon nationally available datasets; however, the materials submitted by the site promoter highlight that there are mature species rich hedgerows associated with narrow strips of neutral semi-improved grassland. The proposal includes a new 12ha SANG parkland to ensure a defensible eastern boundary, which would reduce risk of future 'sprawl' downhill towards the River Loddon.
- East of Twyford/Ruscombe ("A4") - there are two BOAs to the east of Twyford associated with a high density of woodlands, namely the Waltham to Binfield Woodlands and Parklands BOA to the south of the railway line and the Ashely and Bowsey Hills BOA to the north of the A4; however, there is potential for expansion east of Twyford/Ruscombe without encroaching on a BOA. Specifically, expansion to the north of the railway line would avoid encroachment on a BOA, and the Wokingham Landscape Character Assessment (2004) serves to suggest limited functional linkages between this landscape and the more wooded landscapes to the northeast and south, although development would envelop the Ruscombe and Vale Woods LWS, which is a c.2.8 ha non-ancient woodland. Land to the south of the railway is associated with a notably high density of priority woodland habitat and falls within a landscape character area that extends south to include the Waltham to Binfield Woodlands and Parklands BOA; however, the assumption is that only a new road would pass through this area.
- **Grazeley** – a defining feature of the site is the floodplain of the Foudry Brook, which passes north/south through the centre of the site; however, the brook is not associated with any wetland priority habitat within the site (there is a notable patch to the south of the site). With regards to woodland, this broad area is associated with a relatively low density of ancient woodland and deciduous woodland priority habitat; however, there is a large area of Wood Pasture and Parkland priority habitat within the northern part of the site, and also a significant cluster of ancient woodland to the north of AWE Burghfield (which falls within the Kennet Valley BOA). The former would likely be impacted by development, whilst impacts to the latter would be avoided, given a need to ensure no development within the AWE Burghfield safety exclusion zone.

In **conclusion**, in light of this discussion it is considered appropriate to highlight spatial strategy options involving expansion of Shinfield Parish SDL, particularly higher growth expansion, as performing relatively poorly, and there is also a degree of concern regarding expansion to the East of Twyford. It is, on balance, not considered appropriate to identify higher growth options as likely to give rise to impacts over-and-above lower growth options, recognising that Wokingham Borough sits within a heavily constrained sub-region; however, there remains a

degree of uncertainty in this respect, particularly ahead of detailed work to confirm the ability to ensure sufficient capacity of SANG (of a sufficient quality) and also strategic biodiversity net gain priorities.

With regards to **effect significance**, it is not clear that there is the potential to conclude that the poorly performing spatial strategy options will lead to significant negative effects, noting good potential to implement avoidance and mitigation measures. This conclusion is reached taking account of the site options that are a constant across all of the reasonable spatial strategy alternatives, in addition to those that are a variable. With regards to the better performing options, numerous sites will be associated with the potential to implement the targeted habitat creation and enhancement measures necessary to achieve a biodiversity net gain; however, there is no certainty at the current time regarding whether the net effect would be to achieve an overall gain in biodiversity at the Wokingham scale or (more importantly) any functional landscape scale, hence it is not possible to conclude the likelihood of significant positive effects.

Climate change adaptation

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
2	1	2	1	2	2	2	3	3

Discussion

The key consideration here is the need to avoid development - in particular residential - encroaching on fluvial flood risk zones, noting the possibility of expanded flood risk zones under climate change scenarios. A secondary consideration is the need to avoid surface water flood risk zones, noting that it is often possible to deal effectively with surface water flood risk through masterplanning and design measures, namely sustainable drainage systems (SuDS). Another consideration is development impacts (either positive or negative) to water flows and, in turn, down-hill / down-stream flood risk; however, it is difficult to identify issues at the strategic level.

A stand-out consideration here is the extent of fluvial flood risk within the **Grazeley** site which, as discussed above, is associated with the shallow valley of the Foudry Brook. It is fair to assume that a starting point for masterplanning will be the need to avoid the defined fluvial flood zones; however, a precautionary approach could involve additionally avoiding a buffer zone to account for climate change risks and also the large area of surface water flood risk to the west of the railway line at the southern extent of the site associated with a small stream without a defined fluvial flood zone. The Growth Scenarios Report identifies good potential to avoid flood risk zones.

Barkham Square is also bisected by a fluvial flood risk zone associated with a small stream; however, this is a very narrow flood risk zone, and the firm proposal from the site promoter is that there would be a SANG parkland delivered that is centred on this stream and buffers it to a considerable extent.

Expansion to the south of Shinfield (“**M4 SDL L**” and “**M4 SDL H**”) would abut the Loddon floodplain, which potentially poses more of a problem as this is a smaller site. Also of note is the variable option of expansion to the southeast of Spencers Wood (“**M4 SDL H**”) as this site is bisected by an extensive area of surface water flood risk.

In **conclusion**, there is a need to flag spatial strategy options involving a focus on Grazeley as performing relatively poorly; however, this reflects a precautionary approach as, in practice, there will be much potential to complete detailed work to understand the precise nature of flood risk within the sites and then masterplan in order to avoid that risk. It is also appropriate to flag a degree of concern associated with spatial strategy options involving Shinfield Parish SDL expansion.

With regards to **effect significance** it is considered appropriate to flag the risk of a significant negative effect under all of the spatial strategy alternatives, noting that, in addition to sites that are a variable across the reasonable spatial strategy alternatives, certain sites that are a constant either intersect or abut the fluvial flood risk zone, or are associated with quite extensive surface water flood risk.

Climate change mitigation

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
4	2	3	3	3	3	3	1	2

Discussion

Matters relating to per capita greenhouse gas emissions are a focus of discussion below, under the transport heading, and it follows that the focus of discussion here is the need to minimise per capita greenhouse gas emissions from the built environment. In practice, this means that there is a need to favour schemes with greatest potential to deliver decentralised heat/power generation from renewable or low carbon sources and deliver development to high standards of ‘sustainable design and construction’.

In practice there is little potential to differentiate between the ‘variable’ locations for growth in these respects; however, it is appropriate to highlight larger schemes as preferable on the assumption that the economies of scale will lead to funding availability. It follows that it is appropriate to flag the potential for significant positive effects to result from development of a very large (15,000 home) new settlement at **Grazeley**. This would be a flagship scheme of national note, hence it is fair to assume development of a scheme that prioritises the achievement of climate change mitigation objectives in line with the national climate emergency (and there are also significant locational opportunities in respect of minimising per capita emissions from transport, as discussed below).

However, there is much uncertainty at this stage, with low carbon infrastructure not having been a focus of work completed to date. There is an established commitment for the scheme to be ‘carbon neutral’, which will likely necessitate decentralised renewable or low carbon heat/power generation; however, there remains much uncertainty regarding what might be feasible and deliverable in this respect. In particular, delivery of a ‘Grazeley-wide’ district heating network could prove challenging if there is a need to favour a dispersed / polycentric scheme, which will likely be the case due to the need to avoid flood risk zones.

With regards to the other sites that are a variable across the alternatives, the key point to note is that larger schemes will be associated with a greater likelihood of delivering measures that ultimately support minimisation of per capita greenhouse gas emissions from the built environment. There are established rules of thumb, for example that delivery of a district heating network can prove viable for schemes in excess of 500 homes; however, in practice scheme viability is highly localised and there is a need to factor-in site-specific considerations relating to delivery of costly essential ‘grey’ infrastructure, community infrastructure, affordable housing and SANG before consideration can be given to delivery of low carbon infrastructure, or delivery of buildings to standards of design and construction that exceed building regulations. Rules of thumb serve to highlight:

- East of Twyford/Ruscombe (“**A4**”) - is associated with an opportunity to deliver low carbon infrastructure etc noting that the proposed scheme would be nucleated (as opposed to polycentric), although it is not anticipated that the scheme is not expected to include significant employment floorspace, which could be to the detriment of delivering a viable district heating scheme as mixed use development supports consistent heat demand. It is also noted that the representation received from the site promoters in 2018, in response to the Homes for the Future consultation, does not make any mention of district heating or any related low carbon opportunities.
- “**M4 SDL L**”- as performing relatively poorly, as expansion to the south of Shinfield would involve only 178 homes, and there is no existing district heating network being delivered as part of the SDL for the development to ‘tap into’ (nor is there a district heating network being delivered as part of the Arborfield Garrison SDL that might benefit **Barkham Square**).

In **conclusion**, the variable sites can be placed in an order of preference broadly according to development scale and, as such, spatial strategy options involving Grazeley or strategic expansion east of Twyford/Ruscombe perform relatively well, whilst spatial strategy option 1 performs relatively poorly.

With regards to **effect significance**, there is inherently no potential to conclude highly significant effects as climate change mitigation is a global issue, such that local actions can have only a very limited effect. However, on the other hand, a national climate emergency has been declared, which serves to suggest that it is fair to highlight strategic planning decisions that fail to capitalise on opportunities to minimise per capita greenhouse gas emissions (i.e. ‘lock in’ higher per capita emissions for many years to come) as performing poorly to a significant extent. Having made these initial points, it is fair to conclude the following in respect of significant effects.

- Spatial strategy options involving a focus of growth either at Grazeley or at a strategic expansion scheme to the east of Twyford/Ruscombe potentially perform significant well, as there will be good potential to deliver low carbon infrastructure and/or achieve standards of sustainable design and construction that exceed building regulations; however, there is much uncertainty on the basis that there is no detailed understanding regarding what would be delivered as part of either scheme. Also, there is uncertainty on the basis that all sites that are a constant across the reasonable spatial strategy alternatives are smaller sites that would not be expected to deliver measures that enable minimisation of per capita greenhouse gas emissions from the built environment.
- Spatial strategic option 1 would lead to a significant negative effect as the situation would be one whereby the Local Plan allocations deliver significant additional housing without enabling any measures to minimise per capita greenhouse gas emissions from the built environment (on the assumption that Barkham Square would not deliver any measures of significance).

Communities

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
3	3	3	3	3	3	3	1	2

Discussion

The matter of accessibility to community infrastructure has already been discussed above, under the ‘accessibility’ heading; however, there remain a range of other community-related matters for discussion.

Potentially an overriding consideration is a need to ensure the safety of new residents of any new settlement in the **Grazeley** area given proximity to AWE (Atomic Weapons Establishment) Burghfield. The northwest part of the site is subject to the AWE Detailed Emergency Planning Zone, placing significant restrictions on land use, with only informal open space permissible. It is fair to assume that all masterplanning options considered will be fully in alignment with AWE Burghfield safety considerations.

Maintaining a focus on Grazeley, it is also fair to highlight the opportunity to deliver a high quality development that not only includes an excellent range of community infrastructure (as discussed above), but also achieves high standards in respect of the urban realm and built environment, with the site promoters describing “a high quality series of neighbourhoods set in a network of open spaces.”

Maintaining a focus on place-making and robust communities in the broadest sense, Shinfield Parish SDL expansion (“**M4 SDL L**” and “**M4 SDL H**”) potentially stands-out in that there are strong arguments for allowing time for the existing committed development schemes within the SDL to ‘bed in’ prior to exploring expansion options. Both new and existing residents of Shinfield and Spencers Wood have been dealing with construction work and change to the local area for a number of years now, and this will continue into the future under a baseline scenario.

Impact to existing residents is also a stand-out consideration when considering the option of strategic expansion east of Twyford/Ruscombe (“**A4**”), with there being a clear issue in respect of maintaining the identity of Ruscombe as a distinct historic settlement. There might be a particular concern associated with a higher growth scenario, noting that the historic built form of Ruscombe extends to the south of the railway.

A final consideration here (which might alternatively be considered below, under ‘housing’) relates the matter of supporting Gypsy and Traveller communities within the Borough. In this respect, the key point to note is that strategic expansion to the east of Twyford/Ruscombe (“**A4**”) would impact and, in all likelihood envelop, a permanent Gypsy and Traveller site, known as Twyford Orchards. This leads to the possibility of negative impacts on the existing Gypsy and Traveller community, given a tendency for Gypsy and Traveller communities to prefer a degree of isolation or, at least, separation from ‘bricks and mortar’ communities. There would be good potential to relocate the site as part of the development; however, the Gypsy and Traveller community might have concerns about any such plan.

Maintaining a focus on supporting the Gypsy and Traveller community it is also appropriate to highlight **Grazeley** as representing an excellent opportunity to deliver a new site to meet the need for new pitches that has been identified through the recent Gypsy and Traveller Accommodation Assessment (GTAA).

In **conclusion**, it is appropriate to highlight spatial strategy options involving a focus of growth at Grazeley as performing relatively well, as there would be the potential to deliver a thriving new community and also minimise impacts on existing communities to a large extent (although it is important to recall that the site is constrained by proximity to AWE Burghfield). At the other end of the spectrum, there are concerns regarding impacts to existing communities associated with expansion to the east of Twyford/Ruscombe and expansion of Shinfield Parish SDL.

With regards to **effect significance**, after having taken account of those sites that are a constant across the reasonable spatial strategy alternatives (in addition to those that are a variable) it is fair to conclude that spatial strategy option 8 would lead to significant positive effects, although there remains a degree of uncertainty ahead of further detailed work on site specific policy etc. This reflects the fact that all of the ‘constant’ sites are smaller sites identified as suitable for allocation following extensive consultation with parish councils. It follows that it is appropriate to flag the risk of significant negative effects for other options, as there would be a focus of growth at one or more locations not supported by the parish council(s) in question; however, there is again a degree of uncertainty given the potential to deliver schemes that address the concerns of the local community.

Economy

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
2	2	2	2	2	2	2	1	2

Discussion

The available evidence indicates that existing and committed employment sites will ensure that there is sufficient employment floorspace in the Borough to meet demand over the plan period, at least in broad quantitative terms (there is also a need to factor-in qualitative considerations relating to various different types of employment floorspace). However, projections of employment land demand/supply balance are inevitably associated with a degree of uncertainty, given uncertainty regarding the national and local economy and changing business needs. It follows that there is merit to supporting mixed used schemes that deliver targeted new employment floorspace.

It follows that there is merit in **Grazeley** which, according to the site promoters, would deliver “a range of employment spaces to nurture new ventures as well as providing bespoke space for companies supporting the economic growth of the Thames Valley.” There is no expectation that any of the other strategic site options would deliver significant new employment floorspace (although the larger schemes would be expected to deliver some small scale employment floorspace as part of any new local centre).

Another consideration is supporting existing centres of employment and economic activity by ensuring that new housing is located in close proximity; however, in this respect there is little potential to meaningfully differentiate the competing strategic site options, as all are quite well located in this respect. Shinfield Parish SDL expansion (“**M4 SDL L**” and “**M4 SDL H**”) potentially stands-out as performing well as new residents would be able to cycle or even walk to expanding Thames Valley Science Park; however, all of the sites that area a variable across the reasonable spatial strategy alternatives would support the ability of new residents to access major employment locations by ‘sustainable transport’ modes. A strategic expansion to the east of Twyford/Ruscombe (“**A4**”) would be c.6km from Thames Valley Park to the west; however, there would be good connectivity via the A4 and residents would also be able to access central Reading (also Maidenhead) by bus or rail.

In **conclusion**, spatial strategy options involving a focus of growth at Grazeley stand-out as performing well, as the scheme would deliver targeted new employment floorspace. The other strategic site options are judged to perform broadly on a par. Whilst there is a suggestion that the highest growth option could lead to a situation whereby there is a local workforce locally that is out of balance with local job availability (which could lead to problematic out-commuting patterns), there is no certainty in this respect

With regards to **effect significance**, it is possible to conclude only a modest significant positive effect under the spatial strategy options that would support delivery of new employment land at Grazeley, reflecting the fact that there is understood to be limited need for new employment land locally.

Historic environment

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
2	3	3	4	4	3	4	1	2

Discussion

Beginning with the ‘variable’ site that is subject to the greatest constraint - **East of Twyford/Ruscombe** would give rise to a high likelihood of impacts to the landscape setting of the Ruscombe Conservation Area, which is centred on a Grade 1 listed church, as well several listed buildings within Ruscombe Parish that fall outside of the conservation area. Also, Stanlake Park is potentially a constraint to the south, in particular as Stanlake Manor House is highly visible in the landscape, although the house is only Grade 2 listed. Also, whilst there are no scheduled monuments within the site boundary, it may be fair to conclude that this part of the Borough may be associated with a high likelihood of archaeology, with the Landscape Character Assessment (2004) stating that: “A low density of late Neolithic, Bronze Age and Iron Age settlement evidence suggests that there may have been early clearance of the woodland and cultivation of the chalk soils, with an expansion of prehistoric settlement from the river valley...” However, on the other hand, expansion would deliver a new relief road, to the benefit of Twyford Conservation Area.

There is notably no designated conservation area (at least within Wokingham Borough) in the vicinity of **Grazeley** and the Shinfield Parish SDL (“M4 SDL L” and “M4 SDL H”), such that concerns relate mostly to avoiding impacts to the setting of sporadic Grade 2 listed buildings. Expansion of the Shinfield Parish SDL to the southeast of Spencers Wood (“**M4 SDL H**”) would lead to a risk of impacts to the setting of Swallowfield Park, which is a Grade 2 Registered Park and Garden centred on a Grade 2* listed manor house, located on the opposite side of the River Loddon ; however, the site promoters have taken this constraint into account as part of their masterplan (Figure G), as reflected in the proposed SANG parkland at the site’s southeast extent. Finally, it is noted that **Grazeley** may be associated with non-designated archaeological constraint, reflecting the surface geology which is partially one of easily worked alluvium soils, with the LCA stating: “This area has considerable evidence of very early agricultural exploitation. A concentration of cropmarks found across this area indicate possible clearance, cultivation and settlement through the prehistoric and Romano-British periods, probably focussed on the Foudry Brook...” Also, there is a series of World War II pillboxes along the Foudry Brook as part of the defensive GHQ line.

As for **Barkham Square**, this site is notably free from constraint (there is only one Grade 2 listed building in the c.100m from the site boundary); however, development would give rise to a concern regarding increased traffic through the nearby Arborfield Cross Conservation Area.

In **conclusion**, spatial strategy options involving strategic expansion to the east of Twyford/Ruscombe perform relatively poorly, and there is also a degree of concern associated with Barkham Square.

With regards to **effect significance**, having taken into account the location of sites that are a constant across the reasonable spatial strategy alternatives (in addition to those that are a variable), it is appropriate to flag all spatial strategy options as giving rise to a risk of significant negative effects, with particular concerns associated with spatial strategy options involving strategic expansion to the east of Twyford; however, these conclusions are reached a degree of uncertainty, given good potential to avoid and mitigate impacts through masterplanning and design measures. With regards to ‘constant’ sites, there is a notable concern regarding expansion to the north of Charvil, as this river valley landscape is associated with a very high density of scheduled monuments, reflecting easily worked soils that supported early settlement. Also, the proposed allocations at Hurst are in proximity to a cluster of listed buildings.

Housing

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
8	7	6	5	4	3	2	2	1

Discussion

The first point to note is that higher growth options are naturally favoured over-and-above lower growth options, as there is a need to provide for Local Housing Needs (LHN; see discussion in Section 5 of this report) and ensure a steady trajectory of housing supply across the plan period, which in practice means allocating a good mix of sites with a total anticipated housing yield over-and-above LHN by in the region of 10 to 20 percent, to reflect the risk of unanticipated delays to delivery at one or more sites. Also, there is support for higher growth options on the basis that the possibility of the Local Plan Update needing to provide for a quantum of homes above LHN in order to meet unmet housing needs from another local authority cannot be ruled out entirely (see discussion in Section 5).

With regards to spatial distribution and site specific considerations, it is not appropriate to highlight **Grazeley** as the preferable ‘variable’ site simply on the basis that it is far-and-away the largest site, as the other sites could feasibly be delivered in combination with one another, and also in combination with non-strategic sites. However, it is fair to highlight that, as a very large site, there will be excellent potential to deliver the full mix of required housing types and tenures at Grazeley, including different tenures of affordable housing to help meet the high need for affordable housing that exists locally.

There are arguments that, as a very large and complex site requiring major infrastructure upgrades, there is an inherent risk of delays to delivery of housing at Grazeley – i.e. a risk of delivery falling below the trajectory that is required by the adopted plan, thereby creating a risk that, at some point in the plan period, Wokingham Borough will be unable to demonstrate a five year housing land supply and/or fail the Housing Delivery Test – with the promoters of one of the competing strategic sites stating through the Homes for the Future Consultation (2018) that *“the SDLs currently building out in Wokingham had significantly longer lead in times than expected by the Council, without the significance of the issues that are present in Grazeley.”*

However, there are counter arguments in respect of delivery, notably reflecting the pending Government decision on whether to assign major forward funding through the Housing Infrastructure Fund (HIF), and the Council’s commitment to taking an active role in bringing the site forward. The Homes for the Future consultation response received from the site promoters stated that they *“welcome the chance to explore ideas and opportunities with Wokingham DC on how best to bring forward Grazeley at the earliest possibility. This could be achieved through: • A site specific development brief or Action Area Plan brought forward ahead of the Local Plan; • Applying an LDO on (part of) the site • Submission of an early planning application for an exemplar first phase, ahead of adoption of Local Plan; • Use of hybrid applications; • Phased delivery of infrastructure.”*

The variable option of strategic expansion to the east of Twyford Ruscombe (“**A4**”) also stands-out. The promoters notably are proposing that delivery be phased over a relatively long period of time, as opposed to the more typical situation whereby an optimistic view of delivery rates is given, and highlight that the site benefits from being in the control of a single developer. It is also fair to highlight that there could be merit (albeit highly uncertain), in respect of ensuring a robust housing supply trajectory, to relying on delivery of a higher growth strategy in this northern part of the Borough given relative distance to the four SDLs, which are continuing to build-out. Finally, it is noted that the representation received from the site promoters to the Homes for the Future consultation (2018) presents an analysis of the baseline housing need situation at Twyford, highlighting an aging population³⁴ and suggesting that *“the lack of new homes has meant the village has likely failed to meet the needs of existing residents (e.g. newly forming households such as couples) or those looking to move to the town (e.g. families)”*; however, equivalent analysis is not available for other settlements or sub-areas within the Borough.

The remaining sites that are a variable across the alternatives could likely deliver a good mix of housing (although none of the materials received from site promoters discuss particular opportunities) and benefit from relatively

³⁴ The younger working age population (18-44) has declined by 13% since 2002, from 4,859 to 4,238. The number of older working age people (45-64) has seen a marginal increase of 5%; however, the fastest growing group has been 65+ which have increased by a third.

limited reliance on major infrastructure upgrades ahead of development; however, all are in proximity to existing SDLs, which potentially gives rise to a risk (highly uncertainty) of local market saturation leading to delivery delays.

In **conclusion**, whilst there are spatial distribution and site specific considerations, an overriding consideration is the need to allocate sites with a total yield that suitably exceeds ('buffers') the established (or, at least, agreed) LHN figure. As such, the reasonable spatial strategy alternatives are placed in an order of preference according to total housing quantum, with one exception. Specifically, Option 7 is judged to perform equally as well as Option 8, despite involving the allocation of sites with a lower total yield, as there would be a good mix of sites and, in turn, reduced risk of unanticipated delays to delivery.

With regards to **effect significance**, it is certainly possible to conclude that Options 1 to 3 would lead to significant negative effects, on the assumption that LHN would be used as the basis for setting the Local Plan housing target and that the requirement would be for this target to be achieved via a steady trajectory over the plan period. This is on the basis that the total quantum of homes provided for through committed/allocated sites would, at best, only exceed LHN by 2%, which is an insufficient buffer to account for the risk of delays to delivery. Options 4 to 6, would also give rise to a risk that housing supply would fall below the required trajectory at some point. Options 7 and 8 are associated with a good degree of confidence regarding the potential to meet the required housing supply trajectory, although there remains a degree of risk. Finally, Option 9 performs very well, and it could potentially even be the case that there is capacity for Wokingham Borough to provide for unmet needs arising from elsewhere.

Land, soils and natural resources

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
★ 1	2	3	2	3	4	4	★ 1	★ 1

Discussion

A foremost consideration here is the need to avoid the loss of agricultural land classed as 'best and most versatile' (BMV), which the NPPF defines as that which is grade 1 (highest quality), grade 2 or grade 3a. The nationally available agricultural land quality dataset shows variation in agricultural land quality across the Borough; however, this dataset has low accuracy (indeed, it does not differentiate between grades 3a and 3b) and low spatial resolution (e.g. to the extent that smaller villages are not recognised as comprising urban land) such that it must be used with caution. Another dataset is available showing agricultural land quality with a much higher degree of resolution and accuracy, on the basis that it reflects the findings of field surveys, namely the "Post 1988" dataset; however, this dataset is very patchy, and covers only a small part of the Borough.

The nationally available low resolution dataset serves to suggest a likelihood of land to the east of Twyford/Ruscombe ("A4") being associated with significant areas of grade 2 agricultural land; however, there is no certainty with the land not having been surveyed in detail (or, at least, surveys not having been added to the "Post 1988" dataset).

The only variable sites for which detailed survey data is available are **Grazeley** (data is available for most of the site) and those that would involve expansion of the Shinfield Parish SDL ("**M4 SDL L**" and "**M4 SDL H**"; the great majority of this area has been surveyed in detail). The data shows this broad area (Grazeley / Shinfield Parish) to comprise a complex mix of grade 3a (i.e. BMV) and grade 3b (i.e. non-BMV). The dataset shows that Grazeley includes significant areas of BMV land as do all three of the Shinfield Parish SDL Expansion component sites.

As for **Barkham Square**, the low resolution national dataset shows the site to comprise mostly grade 4 (non-BMV) quality land, and hence this site certainly stands-out as (likely) least constrained out of those sites that are a variable across the spatial strategy alternatives.

In **conclusion**, the absence of consistent data means that it is a challenge to differentiate the variable sites with confidence and, in turn, it is a challenge to differentiate the reasonable spatial strategy alternatives; however, on balance, it is considered appropriate to highlight spatial strategy options involving a focus of growth at a strategic expansion to the east of Twyford/Ruscombe as performing relatively poorly, and also to flag a degree of concern associated with spatial strategy options involving a focus of growth at Grazeley and Shinfield Parish SDL. Option 1, as a low growth strategy, is tentatively supported, although it is recognised that unmet needs could lead to pressure on best and most versatile land outside of the Borough (see the sub-region map within Appendix III).

With regards to **effect significance**, it is appropriate to conclude significant negative effects under all reasonable spatial strategy alternatives as significant loss of best and most versatile agricultural land would be likely.

Landscape

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
=	=	=	=	=	=	=	=	=

Discussion

It is a challenge to differentiate confidently between the sites that are a variable across the alternatives on the basis of the available evidence, namely the Wokingham Landscape Character Assessment (LCA, 2004).

Having made this initial point, the following bullet points consider each variable site in turn (in scale order):

- **Barkham Square** - is associated with the Arborfield and Barkham Settled and Farmed Claylands character area, which has a 'moderate' quality and sensitivity. The site mostly descends from the minor roads to the east and west, potentially suggesting limited visibility across the site; however, it is strongly associated with the intersection of two stream corridors, with the stream corridor that defines the northern edge of the site associated with a footpath (which could potentially form part of a circular walk linking to Wokingham), and the LCA describing "subtle wooded shallow 'valleys' around the Barkham Brook known as 'the Coombes'" as contributing significantly to local character. A final consideration is the risk of coalescence, or at least loss of a robust landscape gap, between the Arborfield Garrison SDL / Barkham Square and the village of Barkham, which is a linear historic settlement stretching along Barkham Street with historic cores at either end (the southern core being the original location of the village). The remaining landscape gap would be as little as c.250m at its narrowest point.
- **Shinfield Parish SDL expansion** - is mostly associated with the Spencers Wood Farmed and Settled Clay character area, which has a 'moderate' quality and sensitivity. All of the three component sites are potentially associated with a degree of sensitivity, at least in relative terms. From west to east:
 - Expansion to the west of Spencers Wood ("**M4 SDL H**") would impact on a ridge landscape that descends from the B3349 westwards to the A33, and which potentially has a degree of distinctive character. The LCA describes "*former Common land at Spencers Wood, to west of Basingstoke Road... around Stanbury Park and Highlands*" as "*an important defining feature of the settlement*" and also states: "*It is evident from the early maps that settlement consisted primarily of quite closely-spaced Medieval/Post-medieval farmsteads, interspersed with country houses and areas of landscaped parkland, traces of which are still evident to varying degrees around... Stanbury Park, Highlands and Loddon Court [which is located to the south of the site, associated with the same north-south ridge-line].*" A footpath is adjacent to the southern edge of this potential expansion area, and proximity to the centre of Spencers Wood (which has a linear form, stretching along the B3349) potentially suggests a degree of sensitivity; however, it is not clear that this is an accessible or easily appreciated landscape.

Finally, it is important to note that there are two recently committed sites to the west of the B3349, such that the baseline situation will likely involve a reduction in the character of this ridge landscape; it follows that there could be merit in seeking to plan comprehensively for this landscape (west of the B3349, north of the Loddon), with a view to securing sensitive development alongside increased accessibility and landscape management, rather than risking piecemeal erosion of the landscape character over time.

- Expansion to the southeast of Spencers Wood ("**M4 SDL H**") - the land slopes gently away from most potential viewpoints within Spencers Wood, such that the primary concern is likely to be impacts on the sensitive landscapes to the south and southeast, associated with the River Loddon, noting the designed landscape of Swallowfield Court beyond the river and also the presence of a footpath that links to Swallowfield via the river and the cluster of listed buildings at Sheepbridge Court Farm; however, as discussed above, the site promoters have taken this constraint into account as part of their masterplan.
- Expansion to the south of Shinfield ("**M4 SDL L**" and "**M4 SDL H**") - is associated with the Loddon River Valley character area, which has 'high' quality and sensitivity. There are no public footpaths associated with the river in this area, nor are there likely to be sensitive views from the opposite side of the river valley; however, land adjacent to the site has recently been made highly accessible as Langley Park SANG, such

that it might be fair to conclude that this is now one of the most accessible parts of the Loddon Valley south of Reading.

- East of Twyford/Ruscombe (“A4”) - is associated with the Wargrave-Twyford Arable Chalk Lowlands character area, which has ‘moderate’ quality and sensitivity. This character area is quite distinct from the clayland character areas discussed above and below, with LCA describing: *“Farmland with strong sense of openness and homogeneity due to the lack of field divisions or vertical elements across the landscape and maintains separation between and setting of settlements.”* The bridleway through the site that links Wargrave to the north with Ruscombe and locations beyond, including the attractive village of Waltham St. Lawrence to the east (where it links to the Knowl Hill Bridleway Circuit) is a significant constraint.

Finally, it is important to note that this site falls within the London (“Metropolitan”) Green Belt, within which there is a need to “safeguard the countryside from encroachment” and ensure permanent “openness”. The Growth Scenarios Report (see Figures I and J within Appendix IV) proposes a new defensible Green Belt boundary in the form of a boundary road (the ‘relief road’ discussed above) with a large area of publicly accessible open space / green space beyond; however, it is noted that the site promoters stated through their 2018 Homes for the Future consultation response that: *“Whilst this would establish a set boundary to the development, it is considered that this would not necessarily result in the most appropriate solution to promote high quality place making. Alternative options to this approach include for example an attractive built edge with high quality landscaping beyond, including new planting where appropriate to form a defensible Green Belt boundary.”*

- **Grazeley** – comprises virtually the entirety of the Grazeley Farmed Clay Lowland character area, which has ‘moderate’ quality and sensitivity. The LCA describes a “highly rural landscape” and a “simple flat landform, enclosed to the east by the prominent clay ridge of Spencers Wood” and goes on to make a range of statements regarding quality, condition and sensitivity, including: *“The strong character is attributed to the distinctive flat landform and presence of the numerous streams including the course of the tranquil Foundry Brook. Also important is the mixed working farmland set within neatly clipped hedges, distinct rural settlement pattern of scattered farmsteads and hamlets and strong overriding rural character. The wayside commons and pattern of winding sunken lanes contribute to this rural character.”* The LCA also notably describes the hamlets of Grazeley and Poundgreen as being associated with a built form *“distinctive for its half-hipped roofs and use of traditional red brick with weatherboarding on agricultural buildings. The use of clay tiles, along with the soft red brick, also adds a warmth to the landscape. Thatch is also a feature of this area, reflecting its association with the Kennet and proximity to reed beds.”*

In **conclusion**, it is not possible to differentiate between the variable sites with any confidence on the basis of the available evidence. There is some reason to suggest that a strategic expansion to the east of Twyford/Ruscombe stands out as giving rise to particular concerns, particularly given the Green Belt constraint; however, there is no certainty, ahead of further detailed work to consider the possibility of establishing a robust Green Belt boundary and also offset impacts through compensatory improvements to the environmental quality and accessibility of remaining Green Belt land (as per NPPF para 138, also noting para 141 which discusses the importance of accessibility, landscape vale and biodiversity).

With regards to **effect significance**, significant negative effects are predicted for all spatial strategy alternatives, also recognising that certain of the smaller sites that are a constant across the alternatives may give rise to a degree of concern from a landscape perspective (although concerns are likely to be limited, noting that the constant sites have all been selected following extensive consultation with parish councils). Significant effects are predicted with a degree of uncertainty given the potential to avoid and mitigate impacts through masterplanning and design.

Transportation

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
4	1	2	3	3	2	3	1	4

Discussion

From a ‘transport’ perspective there is merit to favouring large mixed use schemes that will support a degree of self-containment, i.e. a situation whereby residents’ need to travel beyond the local area (where trips can often be made by walking / cycling) is minimised. Such schemes can also support good access to high quality transport

infrastructure (with capacity), in particular public transport infrastructure, such that longer trips (in particular commuting trips at peak times) can be made in such a way that per capita greenhouse gas emissions and traffic congestion (with associated pollution and impacts to economic productivity) are both minimised.

Having made these initial points it is appropriate to highlight **Grazeley** as performing strongly. As discussed above, under the 'accessibility' heading, the scale of the scheme would lead to an economy of scale - and resulting ability to deliver infrastructure upgrades as well as a full mix of uses (i.e. uses other than residential, which deliver lower financial returns) – that has scant precedent nationally. Focusing on transport infrastructure upgrades, whilst there is no certainty at this early stage (including on the basis that a Government decision on HIF funding is pending), the scheme *could potentially* deliver, or enable delivery of significant infrastructure, including:

- a bridge over the M4 to connect to Green Park;
- improvements to the A33 and Junction 11 of the M4;
- an extension to the existing Mere oak park and ride and a new park and ride facility;
- extension of the Reading rapid public transport network to facilitate access to Green Park and Mortimer stations and, in turn, Reading town centre; and
- a potential new rail station (subject to further analysis and assessment).

More generally, it is fair to highlight the merit of growth in close proximity to the intersection of two strategic transport corridors, namely the M4 and A33, albeit it is recognised that M4 J11 is under pressure from growth at the nearby SDLs and in Reading. It is also recognised that there are climate change mitigation arguments for *not* locating growth in proximity to the strategic road network.

The other 'variable' sites located in close proximity to M4 / A33 junction are those that would involve expansion of the Shinfield Parish SDL ("M4 SDL L" and "M4 SDL H"). The three component sites are all small in comparison to Grazeley, such that there will be very limited potential to fund and deliver new transport upgrades, which, in turn, suggests the potential to load additional pressure onto existing transport infrastructure including M4 J11. However, on the other hand, the SDL is benefiting from an enhanced bus service, and further growth could help to maintain and potentially enhance this service. In addition, as discussed above under the 'accessibility' heading, all three sites are well located in respect of supporting walking and cycling to services and facilities, and also major employment areas.

The other 'variable' scheme that is relatively well located in terms of proximity to strategic transport infrastructure is eastern expansion of Twyford/Ruscombe ("A4"). The potential to deliver a new town centre relief road (or at least partial relief road) has already been discussed above, as has the potential to deliver a new secondary school and district centre. Another key consideration is proximity to Twyford station, which already benefits from a good rail service to London Paddington and Reading/Oxford (also the branch line to Henley), and which is set to see a significantly enhanced service by 2021/22 upon arrival of Crossrail/Elizabeth line services that will link directly to key destinations within London, including Liverpool Street and Canary Wharf. The scheme could also potentially facilitate delivery of a new multi-storey car park for the rail station (although this is uncertain, with the site considered by the Growth Scenarios Report – see Figure J within Appendix IV – comprising part of a well-used recreation ground) and could also potentially support enhancements to the A4 corridor, with the Growth Scenarios Report suggesting the possibility (albeit highly uncertain) of a new Reading Park and Ride facility.

The remaining variable site, namely **Barkham Square**, has less merit in 'transport' terms, reflecting both scale and locational considerations. It is relatively poorly located in respect of accessing mass / rapid public transport and also the strategic road network, hence there would be a concern regarding car dependency and resulting high per capita greenhouse gas emissions from transport and traffic congestion, including at M4 J11, along rural lanes, through villages and along the B3349 into Wokingham. Furthermore, there is a need to consider uncertain in combination impacts with committed growth at the nearby SDLs.

In **conclusion**, spatial strategy options involving a focus of growth at either Grazeley or East of Twyford/Ruscombe perform relatively well. A focus of growth at either location may represent a significant opportunity to deliver growth in such a way that minimises need to travel and car dependency, and hence ultimately minimises per capita greenhouse gas emissions from transport and also traffic congestion; however, there is much uncertainty ahead of further detailed work. There is also a need to flag a particular degree of concern associated with Option 9 as a high growth option, given traffic congestion concerns ahead of detailed transport modelling.

With regards to **effect significance**, it is appropriate to flag a risk of significant negative effects associated with Option 1 (as an option whereby growth would be quite dispersed across the Borough and opportunities relating to new and existing strategic transport infrastructure would not be fully realised) and Option 9 (a higher growth option that could give rise to a risk of problematic traffic congestion; however, there is much uncertainty in the absence of detailed site specific proposals and also borough-wide transport modelling).

Water

Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
?	?	?	?	?	?	?	?	?

Discussion

With flooding already having been a focus of discussion above, there is a remaining need to consider:

- **Water resources** - Wokingham Borough is covered by three water resource zones (WRZ), two of which are supplied by Thames Water (TW); Henley and Kennet, and one by South East Water (SEW); WRZ04. The Wokingham Borough Water Cycle Study (WCS) Scoping Report (January 2019) concluded: "As there is a water surplus predicted across all three water resource zones until 2050, and there is sufficient time to adjust the long-term plan to include emerging trends in population, no further assessment of water resources is required in a phase two outline study."
- **Water supply infrastructure** – the WCS Scoping Study (2019) concludes: "Early developer engagement with SEW and TW is essential to ensure that, where necessary, network reinforcement is delivered prior to developments becoming occupied. Further modelling of the water supply network is required once a preferred options list is defined."
- **Wastewater collection infrastructure** - Thames Water provide wastewater services to the whole of the Wokingham study area. The WCS Scoping Study (2019) concludes: "Areas with the least capacity include the north east and west of Woodley CP, Wargrave, Twyford south of the railway line, Hurst, northern Winnersh CP, Three Mile Cross, Arborfield, the western part of Finchampstead CP, and Riseley. Areas with the most capacity include central Woodley, and Early, Wokingham and Barkham. Further modelling of the wastewater network may be required once a preferred options list is defined."
- **Wastewater treatment capacity** – as part of the WCS Scoping Study (2019) flow permit assessments were carried out at all of the WwTW that are expected to serve growth in the Local Plan period. The study concluded: "Bracknell, Reading, and Sandhurst WwTWs have sufficient capacity to serve all of the sites identified in those catchments in the call for sites process. Easthampstead Park has capacity but is very close to its DWF permit limit and could exceed this should additional sites be identified. Wargrave WwTW can accommodate up to 80% of the sites identified but would exceed its permit level should growth exceed this. Arborfield WwTW has the capacity to accommodate the 20% growth scenario, but growth above this level would require an increase to the DWF permit and a capacity upgrade... a further assessment of wastewater treatment infrastructure is required as part of a phase 2 study; however, the flow permit assessment should be re-visited once a preferred options list of sites is defined."
- **Water quality** - increased wastewater discharges at the WwTWs serving growth in Wokingham have the potential to impact downstream water quality in the receiving watercourses. The WCS Scoping Study (2019) concludes: "In the case of Bracknell, Easthampstead Park and Sandhurst WwTWs an assessment has been completed as part of the Bracknell Forest Phase 2 WCS (2018) and concluded that the proposed growth could be accommodated with a tighter permit and treatment at the Technically Achievable Limit. This level of growth assessed was comparable or higher than currently forecast so this assessment does not need to be repeated. For Easthampstead Park and Sandhurst WwTWs they would be included in a catchment scale model of the River Loddon. Detailed water quality modelling has not been conducted at Arborfield or Wargrave, and the level of growth currently forecast at Reading and Ash Ridge WwTW has not been assessed. A water quality assessment is therefore required at these WwTW. Further assessment of water quality from increased wastewater discharges at Arborfield, Ash Ridge, Reading and Wargrave WwTW should be undertaken as part of a Phase 2 Water Cycle Study."
- **Flood risk from additional foul flow** - a detailed assessment of flood risk can be found in the Wokingham Borough Council Level 1 Strategic Flood Risk Assessment (SFRA). The impact of increased discharges of treated wastewater effluent flows due to planned growth was quantified and is not predicted to have a significant impact on flood risk in any of the receiving watercourses.
- **Odour from WwTW** - The WCS Scoping Study (2019) concludes: "36 sites are close enough to a WwTW that a further odour assessment is recommended as part of the planning process. The cost of this should be met by the developer."

- **Environmental constraints** - The WCS Scoping Study (2019) concludes: *“A number of SSSIs exist within Wokingham Borough, and there is a possibility of point source pollution (from WwTW) or diffuse pollution (for example from surface runoff from development) to impact these sites. Opportunities exist to mitigate this through implementation of SuDS schemes to manage surface runoff. The impact of WwTW on water quality should be assessed in a Phase 2 Study.”*

In **conclusion**, the available evidence – namely the WCS Scoping Study (2019) – does not enable confident differentiation between the sites that are a variable across the spatial strategy alternatives. Growth loading pressure on Wargrave WwTW and (in particular) Arborfield WwTW potentially leads to a degree of concern, and it is also noted that the Twyford Brook stands-out as the only watercourse in the Borough that is assigned ‘poor’ status under the Water Framework Directive (see Figure XXX in Appendix III, above); however, there will be good potential to deliver upgrades to WwTWs and also high quality SuDS. With regards to Grazeley, there is much uncertainty at the current time, although it is noted that the representation received from the site promoters through the Homes for the Future Consultation (2018) suggested the potential for “major water and utility infrastructure improvements”.

With regards to **effect significance**, significant negative effects are not predicted, although there is a degree of uncertainty. There will be a need to consider the possibility of further detailed work to inform the Local Plan Update, albeit it is recognised that many water environment issues/impacts can be appropriately dealt with at the development management stage.

Summary and conclusion

	Categorisation of significant effects and rank of preference								
	Option 1 M4 SDL L Barkham	Option 2 A4	Option 3 A4 M4 SDL L	Option 4 A4 Barkham	Option 5 A4 M4 SDL L Barkham	Option 6 A4 M4 SDL H	Option 7 A4 M4 SDL H Barkham	Option 8 Grazeley	Option 9 Grazeley Barkham
Accessibility	6	2	5	5	5	3	4	★1	3
Air and wider env quality	2	★1	★1	★1	★1	★1	★1	2	2
Biodiversity	2	2	3	2	3	4	4	★1	★1
Climate change adaptation	2	★1	2	★1	2	2	2	3	3
Climate change mitigation	4	2	3	3	3	3	3	★1	2
Communities	3	3	3	3	3	3	3	★1	2
Economy	2	2	2	2	2	2	2	★1	2
Historic environment	2	3	3	4	4	3	4	★1	2
Housing	8	7	6	5	4	3	2	2	★1
Land, soils and natural resources	★1	2	3	2	3	4	4	★1	★1
Landscape	=	=	=	=	=	=	=	=	=
Transportation	4	★1	2	3	3	2	3	★1	4
Water	?	?	?	?	?	?	?	?	?

Discussion

The appraisal serves to highlight that Option 8 stands out as performing well in terms of a number of topics, both in relative and in absolute terms; however, it does not necessarily follow that Option 8 is best or 'most sustainable' overall, noting that it performs less well in terms of certain objectives, most notably flood risk, and noting that the topics are not assigned any particular weight / degree of importance.

Having made this initial point, the following bullet points present summary conclusions for each of the sustainability topics in turn:

- **Accessibility** – Options 2 and (in particular) 8 perform well as there would be a focus of growth at large-scale strategic sites, namely 'East of Twyford/Ruscombe' and Grazeley respectively, hence there would be excellent potential to deliver community infrastructure alongside new housing. Option 1 performs poorly as this would essentially represent a dispersal strategy, although there would be a focus on SDL expansion which could potentially be supportive of community infrastructure delivery / ensuring good access to community infrastructure.
- **Air and wider env quality** – Options involving strategic expansion to the east of Twyford/Ruscombe perform well as the assumption is that any such scheme would deliver a new relief road (or, at least, partial relief road) to the benefit of the town centre air quality management area (AQMA); however, it is not possible to conclude the likelihood of significant positive effects as spatial strategy options would also involve a relatively high growth strategy at Charvil, which could lead to increased car movements through the Twyford AQMA.
- **Biodiversity** – Options involving expansion of the South of the M4 (Shinfield Parish) SDL are judged to perform relatively poorly; however, there is considerable uncertainty, and this conclusion may be somewhat marginal. There may be the potential to achieve an overall biodiversity net gain at the Wokingham scale (or, more importantly, at functional landscape scales); however, there is no certainty at this stage ahead of detailed site specific proposals (which should ideally reflect established strategic priorities).
- **Climate change adaptation** – there are a number of sites – both sites that are a constant across the spatial strategy alternatives and those that are a variable - that intersect or abut a fluvial flood risk zone and/or are affected by extensive surface water flood risk, hence it is appropriate to 'flag' a risk of significant negative effects under all alternatives; however, it is recognised that there will be good potential to avoid and mitigate risk through masterplanning and design measures, including delivery of sustainable drainage systems (SuDS). Options 8 and 9 give rise to a particular concern as Grazeley is strongly associated with the valley of the Foudry Brook.
- **Climate change mitigation** – the appraisal under this topic heading focuses on the matter of minimising per capita greenhouse gas emissions from the built environment, on the basis that emissions from transport are more appropriately considered separately under the 'transport' heading. The appraisal findings reflect an assumption that a focus of growth through large scale strategic schemes can enable delivery of low carbon infrastructure and/or achievement of standards of sustainable design and construction that exceed building regulations and, in turn, help to minimise per capita greenhouse gas emissions from the built environment.
- **Communities** – noting that the matter of accessibility to community infrastructure has already been discussed above, the discussion under this topic heading focuses on: safety considerations relating to AWE Burghfield; the need to minimise the negative impacts of housing growth on existing communities; and the need to support Gypsy and Traveller communities within the Borough. The appraisal serves to highlight spatial strategy options involving a focus of growth at Grazeley as performing relatively well, as there would be the potential to deliver a thriving new community and also avoid impacts to existing communities to a large extent. At the other end of the spectrum, there are concerns regarding impacts to existing communities associated with expansion to the east of Twyford/Ruscombe and expansion of the Shinfield Parish SDL.
- **Economy** - spatial strategy options involving a focus of growth at Grazeley stand-out as performing well, as the scheme would deliver targeted new employment floorspace; however, it is possible to conclude only a modest significant positive effect as there is understood to be limited need for new employment land locally.
- **Historic environment** - spatial strategy options involving strategic expansion to the east of Twyford/Ruscombe perform relatively poorly, as there would inevitably be impacts to the landscape setting of the Ruscombe Conservation Area, and there is also a degree of concern associated with Barkham Square due to the proximity of Arborfield Cross Conservation Area. There are also a range of other, potentially less significant, concerns under other options, both those that are a variable across the spatial strategy alternatives and those that are a constant, hence it is appropriate to flag the risk of significant negative effects under all of the alternatives.

- **Housing** - whilst there are spatial distribution and site specific considerations, an overriding consideration is the need to allocate sites with a total yield that suitably exceeds ('buffers') the established (or, at least, agreed) LHN figure. As such, the reasonable spatial strategy alternatives are placed in an order of preference according to total housing quantum, with one exception. Specifically, Option 7 is judged to perform equally as well as Option 8, despite involving the allocation of sites with a lower total yield, as there would be a good mix of sites and, in turn, reduced risk of unanticipated delays to delivery.

With regards to effect significance, it is certainly possible to conclude that Options 1 to 3 would lead to significant negative effects, on the assumption that LHN would be used as the basis for setting the Local Plan housing target and that the requirement would be for this target to be achieved via a steady trajectory over the plan period. This is on the basis that the total quantum of homes provided for through committed/allocated sites would, at best, only exceed LHN by 2%, which is an insufficient buffer to account for the risk of delays to delivery. Options 4 to 6, would also give rise to a risk that housing supply would fall below the required trajectory at some point. Options 7 and 8 are associated with a good degree of confidence regarding the potential to meet the required housing supply trajectory, although there remains a degree of risk. Finally, Option 9 performs very well, and it could potentially even be the case that there is capacity for Wokingham Borough to provide for unmet needs arising from elsewhere.

- **Land, soils and natural resources** – whilst there is uncertainty in the absence of consistent data, it is appropriate to highlight spatial strategy options involving 'East of Twyford/Ruscombe' as performing relatively poorly, and also to flag a degree of concern associated with spatial strategy options involving a focus of growth at Grazeley and Shinfield Parish SDL. These are the 'variable' sites that are known to be associated with best and most versatile agricultural land, although there are also a number of 'constant' sites that are also subject to this constraint, hence significant negative effects are predicted for all of the spatial strategy alternatives.
- **Landscape** - there is some reason to suggest that a strategic expansion to the east of Twyford/Ruscombe stands out as giving rise to particular concerns, particularly given the Green Belt constraint; however, there is no certainty given the available evidence / ahead of further detailed work to consider the possibility of establishing a robust Green Belt boundary and also offset impacts through compensatory improvements to the environmental quality and accessibility of remaining Green Belt land (as NPPF requirements).
- **Transportation** - spatial strategy options involving a focus of growth at either Grazeley or 'East of Twyford/Ruscombe' perform relatively well. A focus of growth at either location may represent a significant opportunity to deliver growth in such a way that minimises need to travel and car dependency, and hence ultimately minimises per capita greenhouse gas emissions from transport and also traffic congestion; however, there is much uncertainty ahead of further detailed work. There is also a need to flag a particular degree of concern associated with Option 9 as a high growth option, given traffic congestion concerns ahead of detailed transport modelling.
- **Water** - the available evidence does not enable confident differentiation between the sites that are a variable across the spatial strategy alternatives. Growth loading pressure on Wargrave WwTW and (in particular) Arborfield WwTW potentially leads to a degree of concern, and it is also noted that the Twyford Brook stands-out as the only watercourse in the Borough that is assigned 'poor' status under the Water Framework Directive; however, there will be good potential to deliver upgrades to WwTWs and also high quality SuDS.