

WOKINGHAM STRATEGIC GROWTH LOCATIONS

Growth Scenarios Report - Hall Farm and Ashridge

Prepared on behalf of WBC
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EXECUTIVE SUMMARY

Wokingham Borough Council is preparing a Local Plan Update (LPU) for the period to 2036. To better understand the suitability and deliverability of two promoted sites for potential strategic growth at Hall Farm and Ashridge, the Council has commissioned planning, Master Planning and associated technical services. The outputs of this testing exercise will be used to inform the LPU process. It is not the role of the study to recommend whether any of the potential locations should be allocated, but to provide evidence to inform the Councils' decision.

Both assessed sites are greenfield. The site at Hall Farm lies between Arborfield to the south and the M4 to the north and is within the University of Reading's landholdings. It comprises predominately agricultural land but also contains the University's Dairy Research Centre. The Ashridge site lies between the A329 (M) and the M4 to the north of Wokingham town. It comprises mostly agricultural land and some business located within adjoining farm buildings.

The Brief for the commission requires a specific scenario to be tested for both of the potential growth locations:

- Hall Farm: Approximately 1,000 dwellings
- Ashridge: Approximately 3,000 dwellings

1.0 INTRODUCTION

PURPOSE OF THE STRATEGIC FRAMEWORK

- 1.1 Wokingham Borough Council (WBC) is preparing a Local Plan Update for the period to 2036. Approximately 280 sites have been promoted as available for development across the Borough including some locations of a scale for strategic growth. WBC is assessing all of the sites, including the sites referred to as “Hall Farm” close to Arborfield and “Ashridge” located between the M4, to the north of the site, and the A329(M) to the south. WBC procured supplementary consultancy services to assist the Council in assessing the viability, achievability and deliverability of these sites. David Lock Associates and Peter Brett Associates were jointly appointed to undertake the evidence study.

STUDY BRIEF AND SCOPE

- 1.2 The project brief sets out the following study objectives:
- To assist WBC in deciding the development strategy for the Wokingham Local Plan Update (LPU).
 - To assess the site constraints alongside infrastructure requirements, viability considerations and deliverability of each area.
 - Provide a concept plan for growth at the study sites.

ROLE AND STRUCTURE OF THIS REPORT

- 1.3 This report sets out the constraints and options for the Hall Farm and Ashridge sites and explains the information gathered which forms the basis for a concept plan. The report further explains how consultation with WBC Planning Officers has informed the growth scenarios and consolidated understanding of the study area. A concept plan has been prepared to show a development scenario for each site. It provides a list of infrastructure requirements in relation to the scenario and high-level viability is undertaken to inform its deliverability. The remainder of this report covers the following:
- **Section 2** outlines the methodology applied.
 - **Section 3** summarises the site analysis, including a desk-top assessment of constraints, local market information and key points from a workshop undertaken with WBC officers.
 - **Section 4** describes the concept master plan for Hall Farm including the key principles, access and movement and assumed infrastructure.
 - **Section 5** provides an overview of the viability assessment for the site.
 - **Section 6** comprises the conclusions and wider considerations.

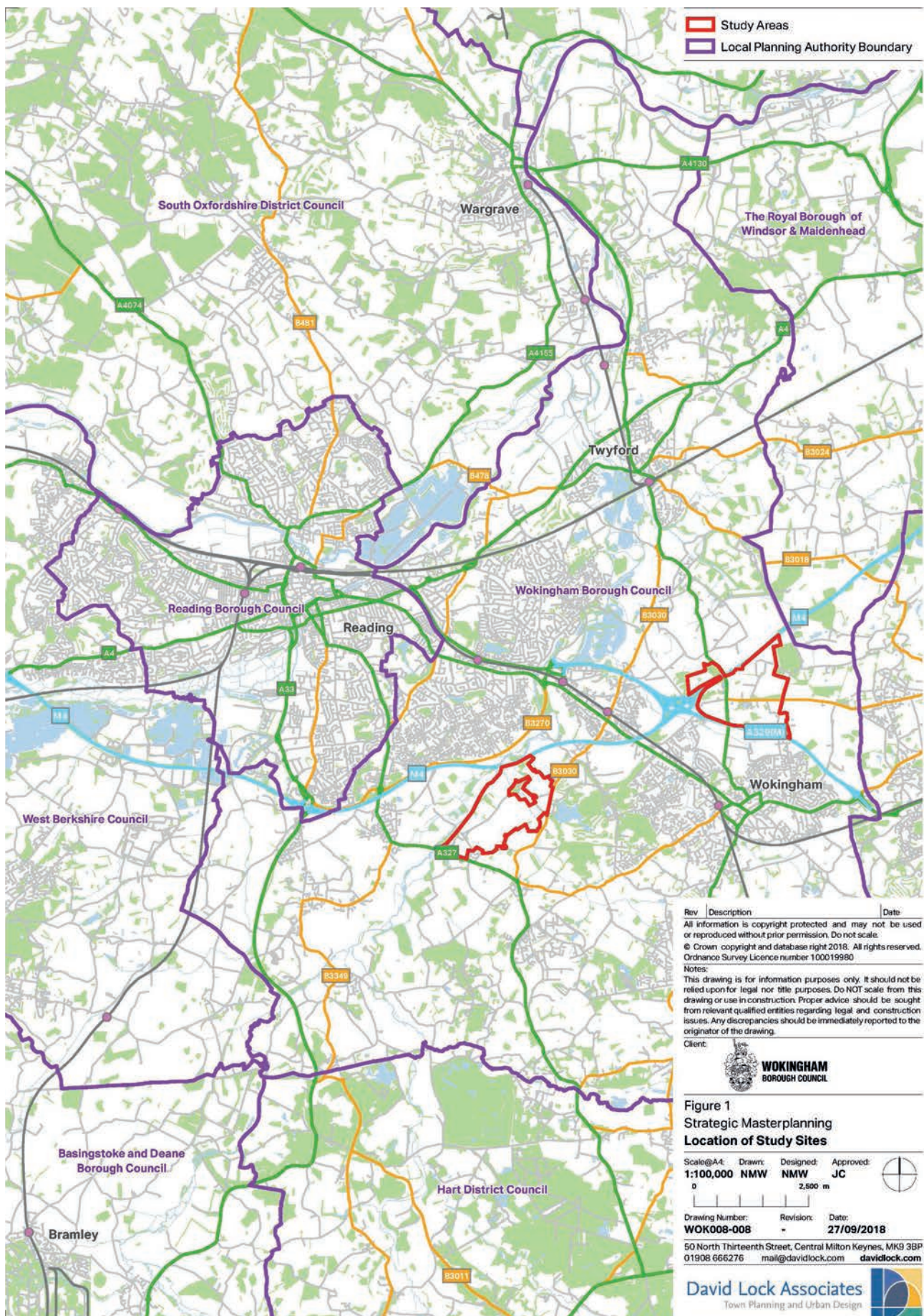


Figure 1.1: Location of Study Sites

2.0 STUDY METHODOLOGY

- 2.1 The project methodology includes a number of tasks arranged in 4 stages of work:

- **Stage 1:** Project set-up and desktop research
- **Stage 2:** Gathering local knowledge
- **Stage 3:** Master Planning exercise
- **Stage 4:** Viability assessment

Stage 1 Project Set-up and Baseline Assessments

Site Environmental Studies

- 2.2 A desktop study has included an analysis of WBC policy. Environmental constraints information has also been reviewed in relation to drainage, noise, air quality, ecology, ground conditions, utilities and heritage.

Baseline Viability

- 2.3 An analysis of the residential market was undertaken to gain an insight into the local property market dynamics, local demand and supply.

STAGE 2 GATHERING LOCAL KNOWLEDGE

- 2.4 Stage 2 focused on generating information about the site areas and the wider context in and around Arborfield, Shinfield and the area to the south of Reading. Constraints mapping and detailed studies combined with officer insights were gathered to inform future consideration. The issues within the wider context of the site were considered, and the opportunity to share knowledge and opinions on the site's potential was facilitated.

- 2.5 A structured meeting was held with WBC and was attended by a number of development management, planning policy, transport, education and drainage officers. The meeting covered the three components from the brief including discussions on the Hall Farm site and the wider area. The workshop was site specific and related to existing constraints, opportunities for the site and wider connections.

STAGE 3 GENERATING GROWTH SCENARIOS

- 2.6 Stage 3 was focused generating a concept plan for the development scenario. The constraints information generated using existing resources and through the discussion with WBC officers influenced the development scenario, working around issues and constraints on-site and connecting with the wider context. It is acknowledged that other scenarios could be formulated but one scenario was evolved for testing purposes.

STAGE 4 VIABILITY ASSESSMENT

- 2.7 A high-level viability appraisal has been carried out based on specific development and locational assumptions to derive a Residual Land Value. This value has then been compared to a benchmark land value applied to greenfield sites in the CIL viability studies carried out for the setting of CIL to provide a judgement as to whether the site can be considered viable at policy level affordable housing.

3.0 HALL FARM SITE ANALYSIS

3.1 This section summarises the analysis of the site conditions and surrounding area for the site at Hall Farm, near Arborfield. This analysis includes:

- Technical and environmental constraints including flooding, drainage, utilities, noise, air quality, ecology, landscape and heritage;
- Findings from the Officer's workshop held at WBC; and
- A summary of local market conditions.

SITE DESCRIPTION

3.2 The site comprises an area within wider landholdings of the University of Reading totalling approximately 245 hectares. The village of Arborfield is located adjacent to the southern portion of the site, Shinfield to the west and the M4 defines the northern boundary. The land has been promoted by the University of Reading but for only 1,000 dwellings. Figure 3.1 shows the extent of the land under consideration. For the purposes of this exercise, development of 1,000 dwellings is assumed to be located at the southern part of the site adjoining Arborfield as an area of land that relates most closely to an established settlement.

3.3 The site is less than 6km from Wokingham town centre and about 7km from Reading Town Centre. Connections to Wokingham are limited and the route to Reading is along the A327 through Shinfield. At a strategic level, the site benefits from boundaries to the following highway networks: M4 (to the north), A327 (to the south) and B3030/Mole Road (to the east).

3.4 The site itself is predominantly flat agricultural land with some farm buildings and pockets of woodland and hedgerow boundaries. The University of Reading's Dairy Research Centre is located on the site. In the main, the site is within Flood Zone 1, however there are significant corridors of Flood Zone 2 and 3 along the main rivers and at the confluence of the Barkham Brook and the River Loddon. Section 3 (Site Analysis) provides a more detailed description of the site's constraints.



Figure 3.1 – Hall Farm site promoted by the University of Reading

SITE CONSTRAINTS ANALYSIS

Landownership and planning history

- 3.5 The Hall Farm site is owned and promoted by the University of Reading who also have wider landholdings in this area. The site is used predominantly as farmland, including the University's Centre for Dairy Research Institute. As such, the planning history for the site is primarily associated with the agricultural and/or horticultural uses undertaken at the farms located across the across the area.

Environmental Constraints

- 3.6 Key site environmental constraints are shown in Figure 3.1 and are summarised in more detail below. The site contains no insurmountable environmental risks to development but large areas are isolated from the strategic road network without first utilising narrow rural roads, however the southern boundary accesses the A327. Transport constraints and opportunities have been assessed in detail.

Flooding and Drainage

- 3.7 The western boundary site lies adjacent to the River Loddon and the Barkham Brook flows southeast to northwest through the site. Both these watercourses are designated as Environment Agency (EA) Main River. Bearwood Lake lies to the east of the site and is classified as a Category A reservoir (where a breach could endanger lives). Fluvial Flood Zone information is available from the EA Flood Map for planning (<https://flood-map-for-planning.service.gov.uk/>). Surface Water and Reservoir information is available from the EA long-term flood risk information maps (<https://flood-warning-information.service.gov.uk/long-term-flood-risk/map>).

- 3.8 Fluvial Flood Risk Environment Agency (EA) Flood Map for Planning indicates that the majority of the site is within Flood Zone 1. However, there are significant corridors of Flood Zone 2 and 3 along the Main Rivers and at the confluence of the Barkham Brook and the River Loddon.

- Zone 1, is categorised as low annual probability of less than 1 in 1,000 (<0.1%) of annual probability of river flooding.
- Flood Zone 2, is categorised as medium annual probability of less than 1 in 100 (< 1%) annual probability but greater than 1 in 1,000 (>0.1%) of river flooding.
- Flood Zone 3, is categorised as high annual probability of greater than 1 in 100 (> 1%) annual probability of river flooding.

- 3.9 The EA Flood Zone map does not distinguish between Flood Zone 3a and 3b (Functional Floodplain, generally greater than 1 in 20 (>5%) annual probability of river flooding. The areas of Flood Zone 1 are expected to present no significant fluvial flood risk constraints for the site.

- 3.10 The site includes areas of Flood Zone 1 (more vulnerable acceptable), Flood Zone 2 (more vulnerable acceptable subject to Sequential Test), Flood Zone 3a (more vulnerable acceptable subject to Sequential and Exception Tests) and Flood Zone 3b (more vulnerable not acceptable). The developable area should be based on land outside of Flood Zone 3 and ideally in Flood Zone 1 as this negates the need for a Sequential Test. Flood Risk will be a significant constraint for any potential transport links to the M4 through Flood Zone 3.

- 3.11 The EA Surface Water Flood Maps indicates surface water flooding within the site along the Main Rivers, but also following existing field boundaries and land drains. There is a surface water flow route for off-site flows onto site along the Barkham Brook. In practice, this flow route would be expected to drain into the Barkham Brook and would be considered as part of the fluvial flood risk (shown in the Flood Zone maps). There are no other significant overland flow routes onto site which would be expected to affect the development area of the site.

- 3.12 The EA's Flood Risk from Reservoirs mapping indicates that there is a risk in the event of a failure of Bearwood Lake. However, the risk of a reservoir failure is considered negligible as reservoirs in the UK under a strict regimen of inspection and maintenance such that the likelihood of failure and the risk from a failure are considered to be mitigated to an appropriate level.

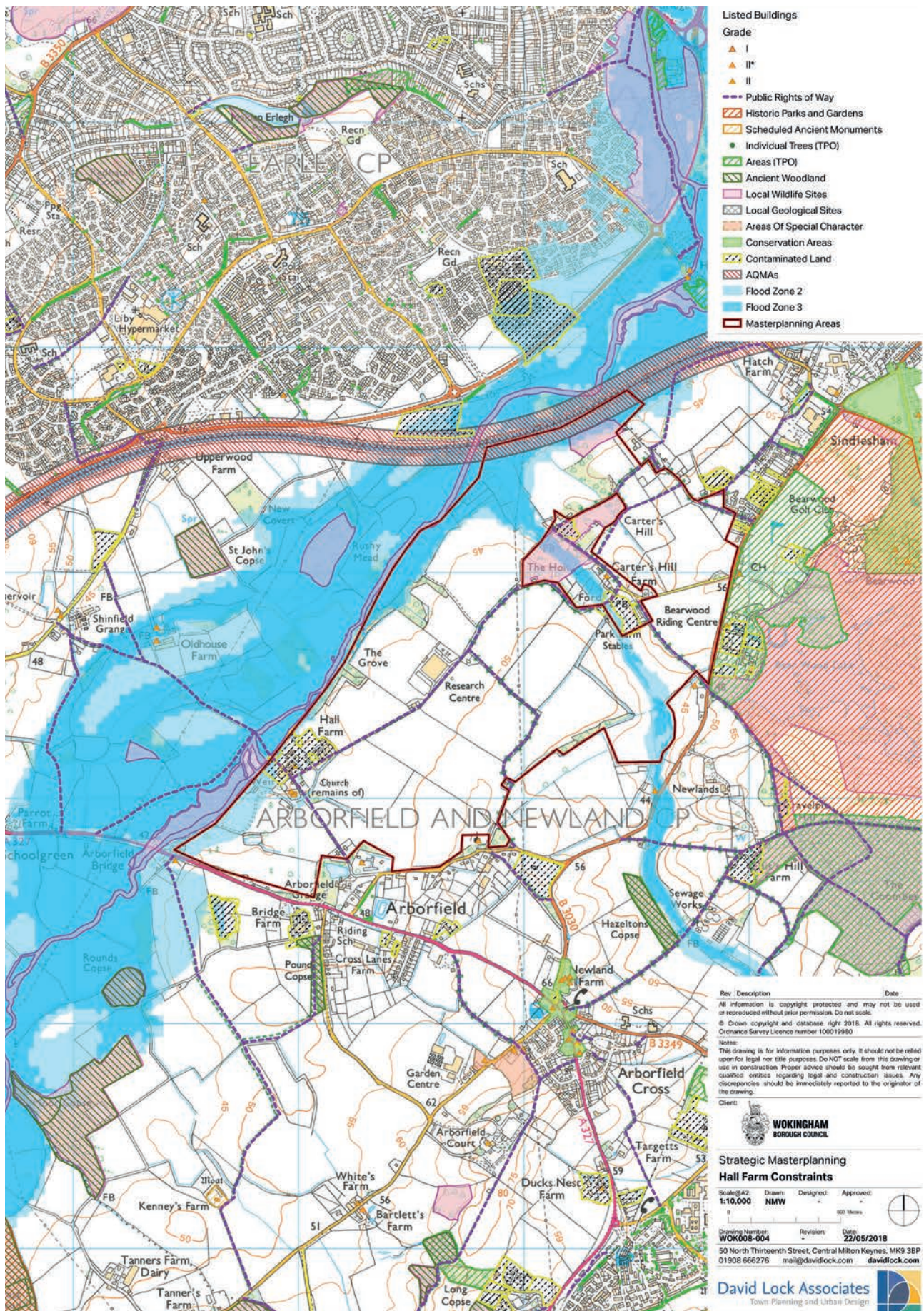
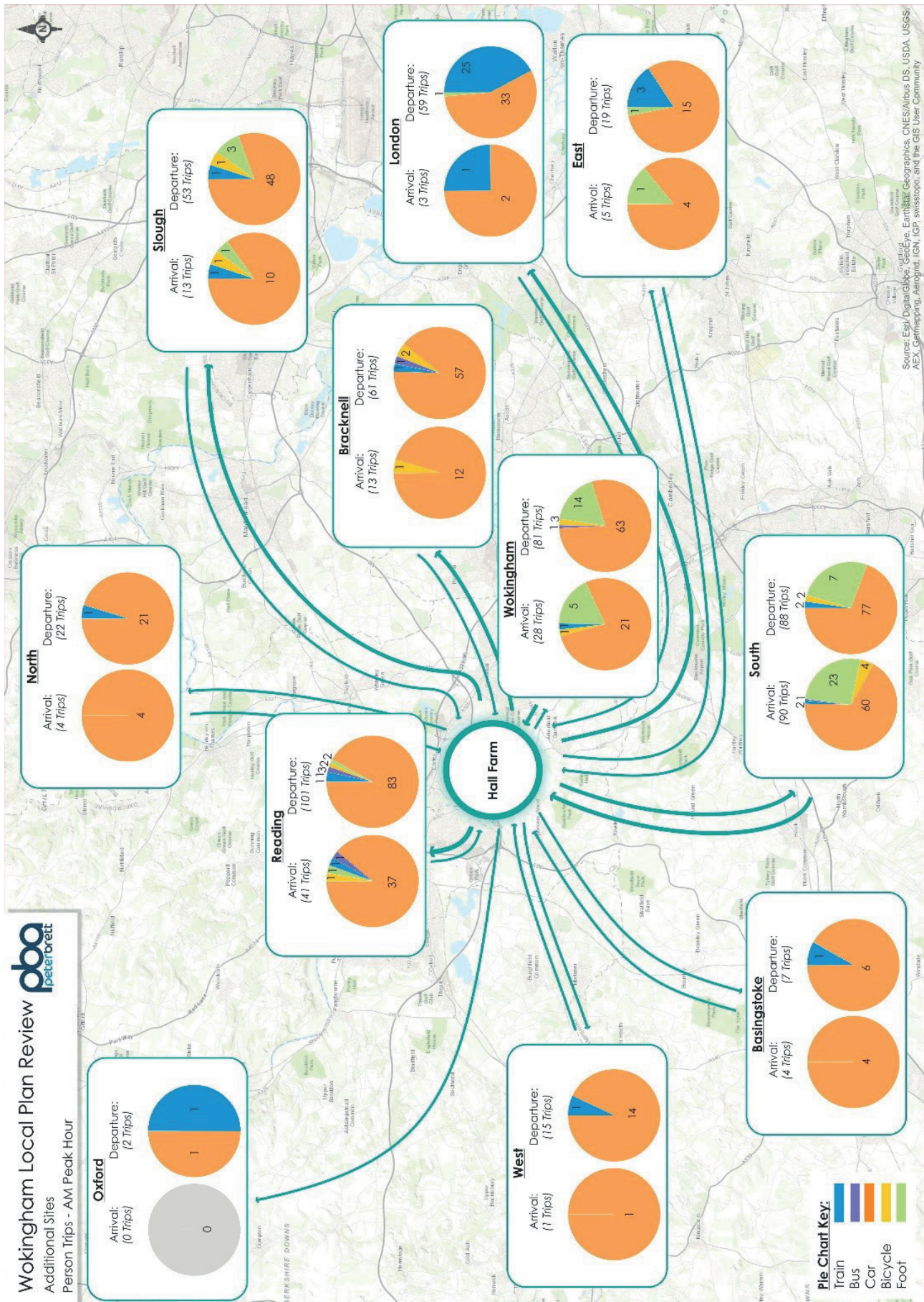


Figure 3.2 – Hall Farm site constraints

Transport & Highways

- 3.13 The site is well located at a strategic level, with boundaries to some of the main highway networks within the area. This includes the M4 to the north, the A327 to the south and the B3030/Mole Road to the east. However, the local roads routed through the site which provide the existing access are characterised as narrow rural roads. Some of these are only single-track roads.
- 3.14 The A327 Reading Road south of the site provides connections to Shinfield and Junction 11 of the M4 to the west, via the Eastern Relief Road and the residential areas of Arborfield Cross, Arborfield Garrison and Barkham to the east. In addition, the Arborfield Cross Relief Road was granted permission in January 2018 and is intended to minimise the impact of traffic growth on the villages of Arborfield, Arborfield Cross and the surrounding area. The B3030 Mole Road and Sindlesham Road to the east provides the north/south connection from the site to Winnersh to the north, which give access to Winnersh rail station and Arborfield Cross to the south. Parkcorner Lane, Copse Barnhill Lane, Church Lane and Carters Hill comprise the local rural roads which pass through the site.
- 3.15 The site has limited access to major public transport connections other than bus routes that are accessed along the eastern boundary of the site on Mole Road through the 145 services and on the southern boundary along the A327 which is served by the number 3/3B bus route. The key destinations from these bus stops include Bracknell, Wokingham Town Centre, Arborfield Garrison and Reading. The number 3/3B route also provides access to Bohunt School, Arborfield Garrison.
- 3.16 There is a public footpath and byway that runs through the site. There are a number of other public footpaths adjoining to the site boundary, providing access to areas such as Shinfield, Arborfield and Sindlesham. There are no national cycle routes in the vicinity of the site and the nearest railway station to the site is Winnersh, located approximately 4.5km from the site. However, there is not currently considered to be a safe access for pedestrians or cyclists to the railway station.
- 3.17 Due to the extent of development being delivered within the Arborfield SDL a number of localised highway improvement measures and additional services have been identified for implementation to cater for the uplift in local demand. These include the Eastern Relief Road, Arborfield Cross Relief Road, and extension to Nine Mile Ride.
- 3.18 The potential movement of people from the site to the key locations around the area can be seen in Figures 3.3 and 3.4, whereby the main demands will be Reading, Slough and London, but also South of Wokingham to areas such as Farnborough and Camberley.
- 3.19 Some future transport considerations could be delivered through the Hall Farm development. Assuming a development of 1,000 homes concentrated to the southwestern corner of the site, primary access would be provided off the A327 via a fourth arm off the proposed Reading Road/Arborfield Cross Relief Road Roundabout. The concentration of the development would also increase the viability of introducing new public transport and local facilities.
- 3.20 The A327 and B3030 are characterised as high speed rural roads and would require some upgrading to create safer pedestrian/cycle routes. The Hall Farm development could also upgrade the greenway (Cutbush Lane) located to the west of the site to improve cycle facilities. Cutbush Lane provides links to Lower Earley to the north, providing access to Asda supermarket and other retail facilities.



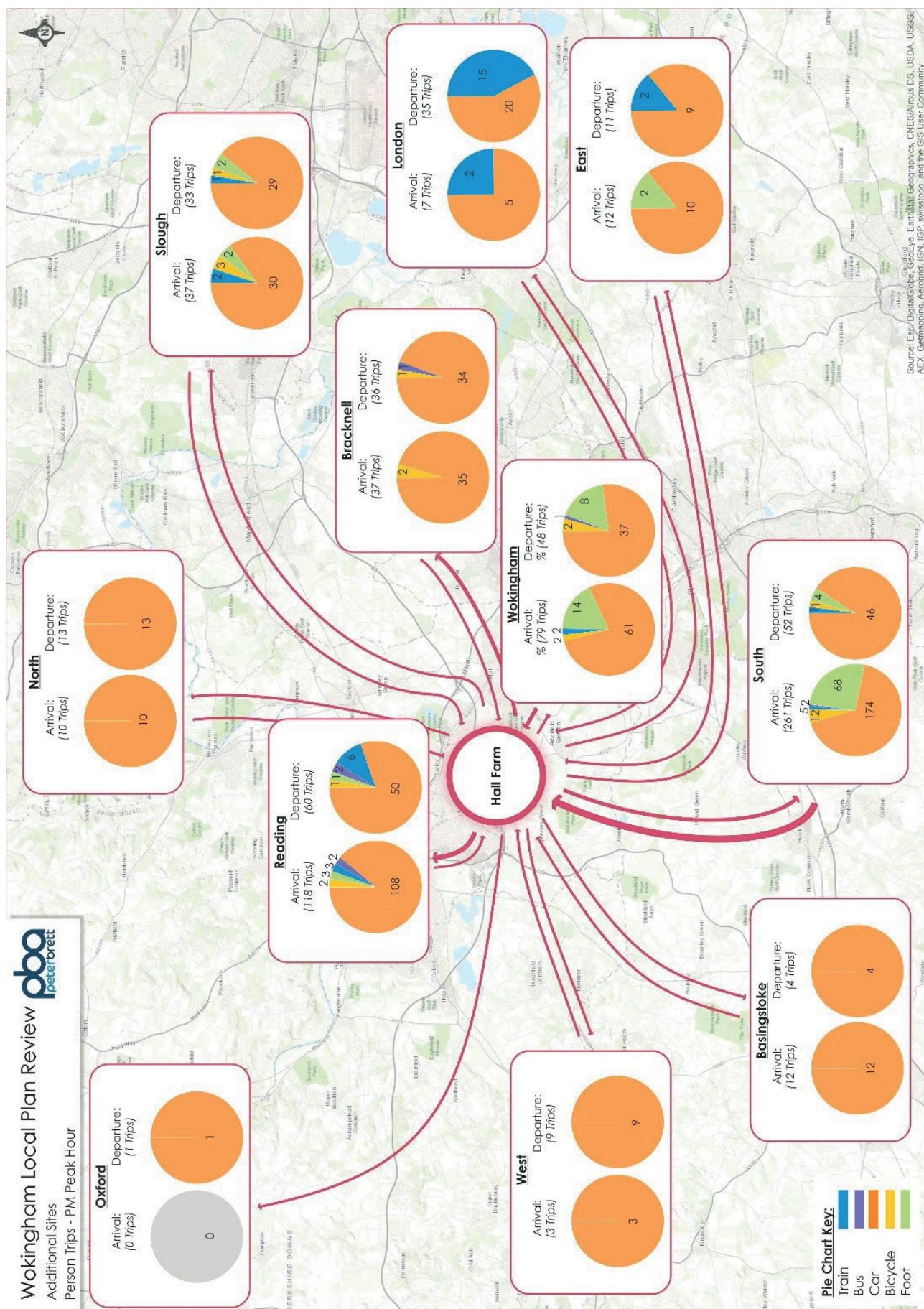


Figure 3.4: Potential movements from Hall Farm (pm)

3.21 As described, the primary access may be taken from the A327/Reading Road and a secondary access could serve the eastern area of the development from Church Lane. There is also the potential to create a pedestrian/cycle only access point to the site, via Arborfield Church which would require a minor upgrade. Within the site, there would be restricted through-movements between the western and eastern residential plots, potentially severed by bus gate. Alternative public transport facilities could include a shuttle bus service to the secondary school (Bohunt School) in Arborfield Garrison.

3.22 Safeguarding land along the western boundary of the site would allow for the future strategic development planning option of providing a new major grade separate junction along the M4 between junctions 10 and 11. Should a new M4 junction be needed, this area would provide for a direct connection between the motorway junction and Reading Road with direct local access along the link encouraging further development. Safeguarding land along the western boundary of the site will also give rise to future infrastructure to provide a new strategic link between the M4 (between J10 and J11) and the M3 (between J4a and J5), which is likely to relieve pressure off the A33 and J11 M4. The current 1,000 homes scenario would not warrant a new motorway junction off the M4, but the future potential has been taken into account.

Air Quality

3.23 An Air Quality Management Area (AQMA) extends along the M4 which borders the northern perimeter of the site. This extends for areas 60m either side of the motorway meaning a section of the site will be within an AQMA. This is shown in Figure 3.5 below.

3.24 Emissions from traffic using the M4 (north of the site) means that development will need to ensure a sufficient distance between proposed housing and the M4. Reading Road south of the site, and Mole Road to the east may also present a constraint due to road traffic emissions. However, the roads are unlikely to be heavily trafficked and therefore only a nominal offset distance to the roads is likely to be required. An appropriately detailed air quality assessment will be required to accompany any planning application for the site in order to demonstrate that the site layout is acceptable and development traffic is not having an undue impact on local air quality.

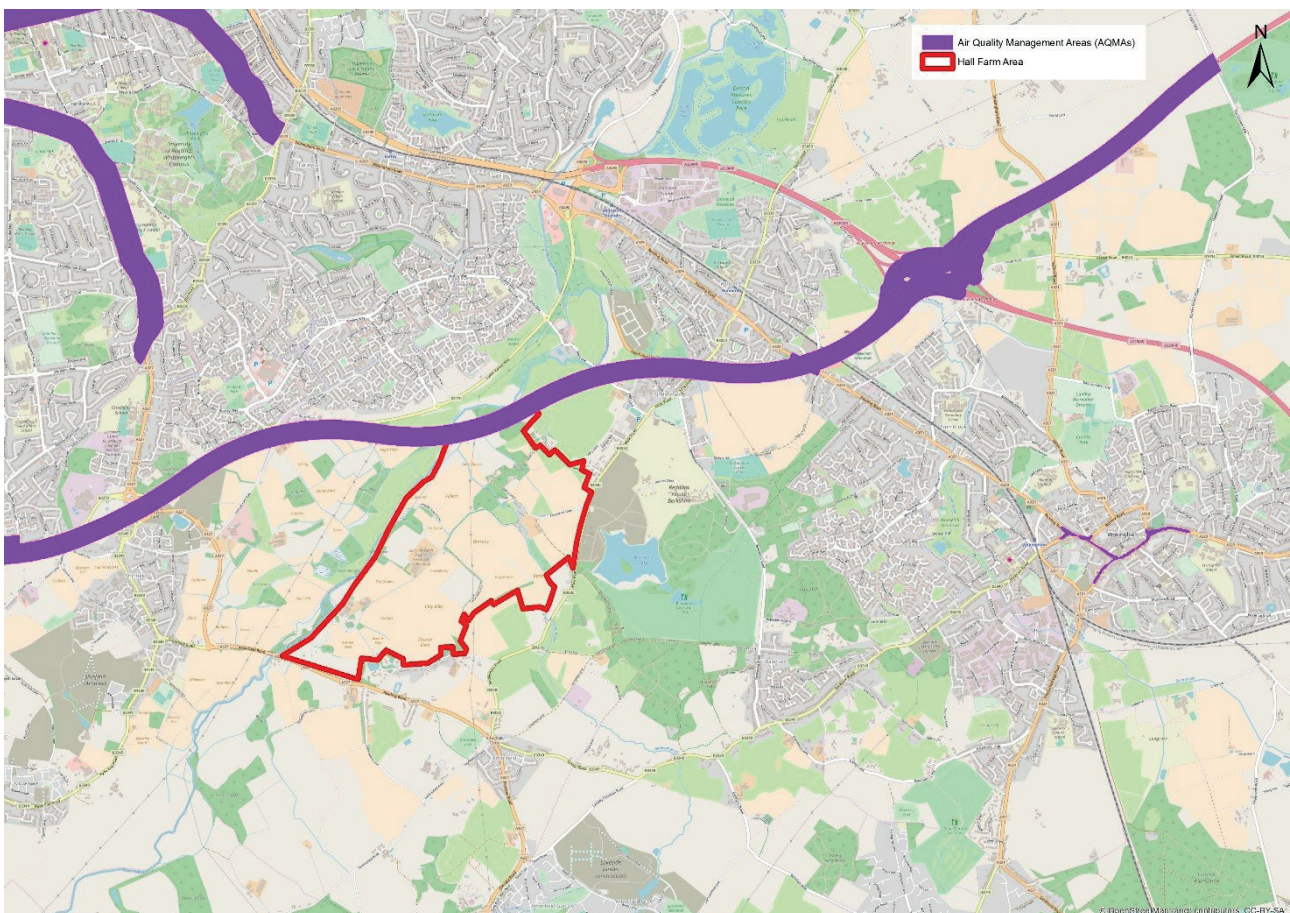


Figure 3.5: AQMA locations in the vicinity of Hall Farm

Noise and Vibration

- 3.25 In addition to air quality, the M4 is a source of noise and vibration. Development would need to consider proximity distance and/or barrier mitigation to ensure that development would be within guideline noise and vibration levels. More sensitive residential uses are generally located further away from these sources.

Geotechnical

- 3.26 This assessment is based on a review of readily available geological maps; historical Ordnance Survey maps; and records of ground investigation data held in the PBA and BGS archives. There may be ground conditions on the site that have not been disclosed by the information available and which therefore have not been taken into account in this appraisal. The site is situated on the gently undulating land to the southeast of the valley of the River Loddon, forming the northwest boundary of the site. The northern part of the site is bisected by the Barkham Brook, a tributary of the River Loddon, which flows northwest across the northern part of the Site. In the area of the site, natural ground levels typically fall from about 55 m OD along the southwest boundary of the site to between about 44m and 39 m OD along the valley of the River Loddon, with cross falls to between about 45 and 39m OD along the line of the Barkham Brook.

- 3.27 Historically the site has comprised largely open farmland with a few areas of woodland, and scattered farmhouses and few workers cottages, whilst Arborfield Hall and associated parkland occupied the southern part of the site. A number of small historical gravel pits are recorded in the north-eastern part of the site immediately to the east of Barkham Brook. Subsequent development of the site has been limited, comprising redevelopment of the farms and a number of commercial activities including a centre for dairy research.

- 3.28 The 1:50,000 scale geological map of the area (BGS, 2000)¹ indicates that the solid geology in the vicinity of the site comprises the London Clay Formation underlain by the interbedded sands and clays of the Lambeth Group with the White Chalk at depth. The London Clay is overlain by River Terrace Deposits on the higher ground on the central parts of the Site. It is overlain by Alluvium within the historic flood plain of the River Loddon and the Barkham Brook. Three small areas of infilled or reworked ground are recorded in the north-eastern part of the site, one of which coincides with the record of the historical gravel pits. In conclusion, it is expected that natural groundwater level is about or slightly above the base of the River Terrace Deposits, or at shallow depth where the Site is underlain directly by Alluvium or the London Clay.

¹ BGS (2000) Reading, England and Wales Sheet 268, Solid and Drift Geology, 1 to 50 000 scale. British Geological Survey, Keyworth, Notts.

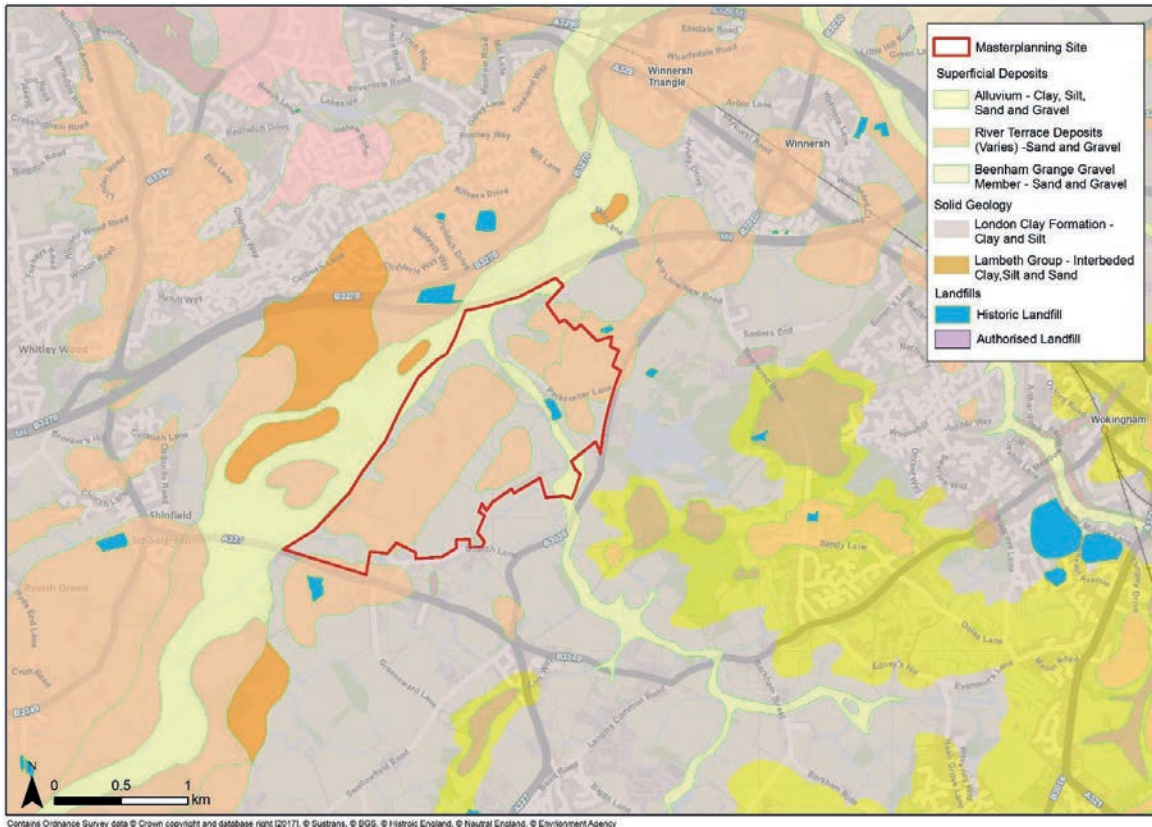


Figure 3.6: Geotechnical Constraints Plan

3.29 There are no known major sources of potential contaminants and hazardous ground gases within the site and the largely agricultural setting of the site makes the presence of significant concentrations of contaminants and hazardous ground gases unlikely. However, the presence of areas of contamination associated with the storage and use of fertilisers and fuel oils cannot be discounted.

3.30 The Minerals and Waste Development Framework (BJSPU, 2007)² shows the River Terrace Deposits on the site to be within a Mineral Safeguarding Area, that is an area identified in order to ensure due consideration of the possibility of mineral extraction prior to development or of the compatibility with current or future mineral operations is undertaken in the determination of certain non-mineral planning applications. Although it is Government policy to ensure that mineral resources that are of economic importance should not be sterilised, the economic value of the resources on the site is considered to be low and their extraction is unlikely to be justified on economic or environmental grounds.

² BJSPU (2007) Berkshire Unitary Authorities Minerals and Waste Development Framework. Berkshire Joint Strategic Planning Unit, Maidenhead, Berkshire.

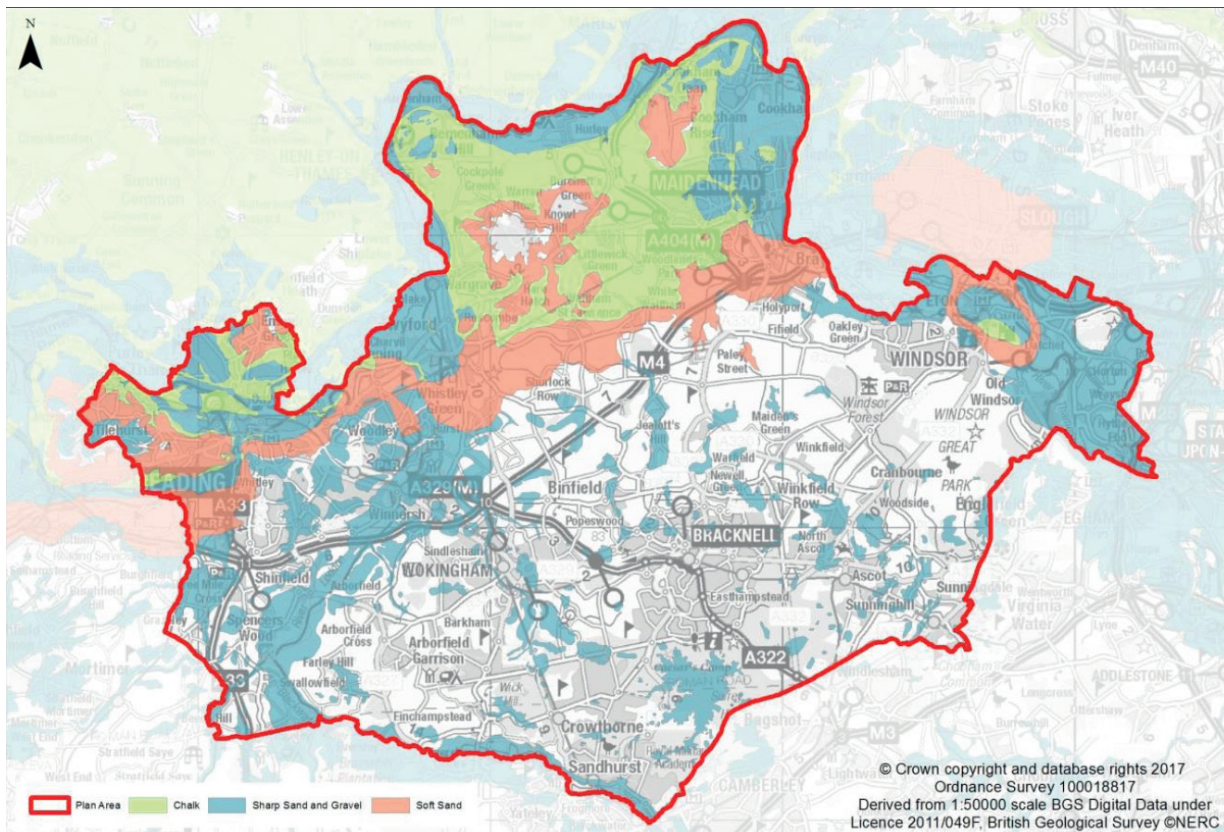


Figure 3.7: Geological map of central and eastern Berkshire (Source: Central & Eastern Berkshire Authorities Minerals Background Study)

3.31 The natural ground conditions can be expected to form a suitable platform for the construction of any proposed development. The exception is any Alluvium owing to its relatively low strength and high compressibility, is likely to require additional works to allow construction of any proposed development within the historic flood plain of the River Loddon and Barkham Brook. Although expected to be suitable for construction of the proposed development, the London Clay comprises clays with high shrinkage or swelling potential. As such any buildings and pavements founded on these clays will need to be designed in accordance with appropriate guidelines for building near trees.

3.32 Many of the buildings on the site are low-rise lightly loaded structures and it is expected that the existing buildings on the site are typically founded on shallow strip or spread foundations resting on the near surface natural soils. It is expected that Made Ground associated with the previous and existing development of the site is only present to limited depth primarily comprising the sub-base to access roads and areas of hard surfacing, and the backfill to foundations and utility trenches. As such, the foundations and any Made Ground associated with the previous and existing development of the site are not expected to represent a significant constraint to development with the exception of the infilled gravel pits and the historical landfill where significant thickness of Made Ground may be present. Overall the geotechnical constraint to the development of the site associated with the previous and current use of the site is considered to be very low in areas agricultural land and woodland and low in the limited areas of previous or existing development. The constraint is slightly more significant where infilled gravel pits and historical landfill are present.

Waste

- 3.33 There is an emerging Minerals and Waste Plan for central and eastern Berkshire. The site will be subject to review for mineral deposits and possibly the search for a waste to energy facility by Hampshire County Council who currently act as the waste and mineral planning authority on behalf of WBC and the other central and eastern Berkshire authorities who are jointly preparing a Minerals and Waste Plan.

Agricultural Land

- 3.34 Agricultural land is classified according to its quality, productivity and versatility. Grade 1 land is 'excellent', Grade 2 'very good', Grade 3a 'good', Grade 3b 'moderate', Grade 4 'poor' and Grade 5 'very poor'. Grades 1, 2 and 3a are considered 'Best and Most Versatile' and are capable of producing the best crops. The Hall Farm site is predominantly Grade 3 (good to moderate) with some areas of Grade 4 (poor). Sub classification of 3a and 3b are not known.

Ecology

- 3.35 The southern part of the site falls within the zone which is within 5km from the closest part of the Thames Basin Heaths SPA and the remainder falls within 5-7km. The Impact Risk Zone determines that any residential development with a net gain of greater than 50 units is identified as being a potentially damaging activity. The Thames Basin Heaths Mitigation Strategy provides framework for delivery of appropriate mitigation for residential development in this area. However, appropriate SANG (Suitable Alternative Natural Greenspace), either within or close to Site needs to be identified. In this regard, Habitats Regulations Assessment, as well as Environmental Impact Assessment for any development will be required.
- 3.36 In addition, there are habitats of ecological value associated with the site. This includes floodplain grassland and the River Loddon on the western boundary. There are also pockets of deciduous woodland on the site, some of which is designated Ancient Woodland. Hedgerows, scattered trees and parkland with trees are present, and the habitats within the site have the potential to support a variety of protected or otherwise notable species. Survey work will need to be undertaken to determine which are present and recommend appropriate mitigation.
- 3.37 The Hall Farm site is set within an area that is identified as an Impact Risk Zone (IRZ) for nearby nationally (Site of Specific Scientific Interest (SSSI) and internationally (Special Protection Areas (SPA)), designated areas. The closest statutory designated area to the site is Stanford End Mill and River Loddon SSSI, which lies approximately 1km to the south-west. However, the designation most relevant to the form of the proposed development is likely to relate to the Thames Basin Heaths SPA and SSSI. Impact Risk Zones (IRZs) are a Geographic Information Systems (GIS) tool used by Natural England to identify zone in the vicinity of Nationally and Internationally designated areas where certain development activities may adversely affect designated areas.

3.38 Much of the Hall Farm site itself is dominated by arable or pasture fields, of limited ecological value. However, there are also habitats of ecological value associated with the site. This includes the floodplain grassland and the River Loddon on the western boundary. Pockets of deciduous woodland, and some Ancient Woodland are located on the site in addition to hedgerows, scattered trees and parkland with trees. The habitats within the site have the potential to support a variety of protected or otherwise notable species including:

- Bats: Potential for roosting bats most likely in older trees or woodland, potential for farm buildings to also support roosting bats and potential for the site to support foraging and/or commuting bats;
- Breeding birds: Potential for the site to support a good variety of breeding birds associated with farmland and woodland;
- Reptiles: Potential for the site to support common species of reptiles;
- Badgers: Potential for the site to support badgers;
- Great crested newt: Species known to be present in the area; have the potential to be present within ponds in the Site and immediate surrounding area; and
- Otter, water vole and white-clawed crayfish: Potential to be supported by watercourses.

3.39 Development of the site presents an opportunity to improve its ecological value in the long-term, given the current predominance of arable and pasture fields of low ecological value. The principles for any development at the site should include:

- Retention, protection and enhancement of key habitats.
- The creation of a variety of new habitats across the site, including wetlands, reedbeds, hedgerow, woodland planting and species-rich grassland. Such habitats would be able to provide replacement habitat to accommodate the species-specific mitigation requirements.
- Consideration of impacts on nearby designated areas, including the Thames Basin Heaths SPA and SSSI and the likely need to provide Suitable Alternative Natural Greenspace (SANG) within the Site or in nearby areas, along with contributions to Strategic Access Management and Monitoring (SAMM) measures.

Heritage

3.40 The site has a number of listed buildings and structures including listed farm buildings and the remains of a Church. On the site and forming part of Hall Farm is the site of St Bartholomew's Church which is scheduled under the Ancient Monuments and Archaeological Areas Act 1979 (as amended). In addition, there is a listed family tomb on the site, and a listed Farmhouse. The village of Arborfield itself also contains the listed Church of St Bartholomew and the Old Rectory Building. The site is adjacent to Bearwood College, a registered Historic Park and Garden to the east of the site. The area is therefore very sensitive in terms of heritage assets which should be sensitively incorporated and considered as part of any development.

Sustainability

- 3.41 There are no explicit reasons why the development could not achieve high levels of resource efficient design and meet the current WBC Sustainable Design Guidance SPD requirements. The development would be expected to fall into line with Government's requirements for nearly zero energy buildings by 2020 (EU Directive 2010/31/EU). There is also a good potential to use Natural Capital Assessment to promote and value natural resources in the decision-making process.
- 3.42 Water resource consumption is increasingly becoming an issue in Wokingham, with potable water providers working closely with the Environment Agency in managing drought restrictions. Emergency procedures associated with drought will continue to be applied to the wider area, which needs to be considered within the strategic planning of growth in the area. A water cycle study prepared in support of the emerging local plan would support the evidence base to manage this resource constraint.
- 3.43 WBC are looking to safeguard minerals as part of the evolving Minerals and Waste Local Plan and therefore, the potential for strategic development of this site should be considered within this process.

Utilities

- 3.44 This section reviews the existing utilities infrastructure for the Hall Farm site that is being considered for residential development. A desktop study has been undertaken which includes a review of information available via linesearch, the HSE Planning Advice Web App and Google Earth. Information has also been obtained from a PBA utility stakeholder engagement meeting and the Thames Water Key Stakeholder Position Statement dated May 2018. This section provides a summary on existing infrastructure (electricity, gas, potable water, wastewater and telecommunications) and then the requirements to deliver new infrastructure to supply development.
- 3.45 There are 3 high voltage (expected to be 33kV or above) overhead electricity cables located in the centre of the site (north to south); parallel to Mole Road; and to the south west corner of the site also crossing the A327. These cables have an associated easement and "sag and sway" envelope that limits development directly adjacent to the asset. Any development on site will need to consider the no build zones from these cables. A network of overhead and underground cables service the existing properties on the site and this network will need to be diverted to accommodate the new development.
- 3.46 Discussions have been held with an SSE System Planning and Investment Engineer and it is anticipated that the borough of Wokingham has more than adequate capacity within the electricity network. However, SSE has advised that a new primary substation will be required within the borough.

- 3.47 A line search enquiry of the area has identified that SGN assets are located within the site boundary. However, the HSE Planning Advice Web App has not identified any major accident hazard pipelines within the site boundary. It is likely that low pressure gas mains serve the existing properties on site and this network may need to be diverted to accommodate any new development. SGN has identified that there are capacity restrictions in the Wokingham and Reading areas and are in the process of producing a strategy to provide more capacity in the area.
- 3.48 Thames Water own and operate the potable water network in the area. Small diameter pipes are likely to supply the existing properties on site and may have to be diverted to accommodate any new development. Thames Water has indicated that there is anticipated to be sufficient available capacity within the Thames Valley Berkshire's Water Resource Zones to maintain supply up to 2035.
- 3.49 Thames Water also own and operate the wastewater network in the area. Small diameter sewers are likely to be connected to the existing properties on site and may have to be diverted to accommodate any new development. The latest position statement received from Thames Water indicates that an upgrade to the Arborfield Sewage Treatment Works and sewerage network will be required to accommodate the proposed growth in the area.
- 3.50 A line search enquiry has identified that Openreach and Virgin Media ducts are present on site. These are likely to be insignificant in scale and may be required to be diverted to accommodate the development proposals. For a scheme of this size, Openreach will automatically provide fibre to the home. It is also highly likely that many alternative fibre infrastructure providers will be interested in laying their infrastructure within the development boundary. Therefore, it is likely that development will receive superfast broadband (greater than 24Mbps).

SUMMARY OF OFFICERS' WORKSHOP

Constraints Discussion

- 3.51 The principal constraint discussed related to transport, given the poor existing connections and some discussion took place on the potential capacity for more than 1,000 dwellings on such a large-scale site.

Concepts Discussion

- 3.52 WBC considered that the overall site capacity could be more like 3,000-4,000 dwellings given the extent of the land being promoted. Consequently, there are options for where a development of just 1,000 dwellings could be located. This was agreed as most appropriate to the north as an extension of Winnersh or alternatively to the south of the site as an extension of Arborfield. The group agreed that new links would be needed to the south and to the north (with Lower Earley) to serve such extensions.
- 3.53 The area suffers from transport issues and capacity constraints on the current road networks. Some thoughts on potential ways to alleviate these included a new motorway junction, and/or the A33 Relief Road. However, it is clear that these would not form part of a 1,000 dwelling development promoted by the University. More opportunities would arise from strategic scale development and this should be balanced with what would, or would not, be achieved through the provision of 1,000 dwellings.
- 3.54 The site comprises part of the University estate, therefore there were suggestions that a mixed-use housing and research park might have potential at this location if the whole landholding were to be proposed for development.

UNDERSTANDING THE LOCAL MARKET

Overview of Residential Market

3.55 Given the development numbers promoted at this site are just 1,000 dwellings, the market research undertaken has been focused on residential markets only. The average house prices in Wokingham Borough are higher than those in the south east. HM Registry data shows average prices as at April 2018 for Wokingham compared with the South-East region as a whole (see table 3.1 below).

Table 3.1: House Values in Wokingham compared with the wider south-east region

Dwelling type	Wokingham Borough	South East Region
Detached	£644,391	£555,533
Semi-detached	£406,507	£347,267
Terraced	£319,315	£272,407
Flat/Maisonette	£236,864	£203,726

Source: Zoopla

3.56 ONS data for lower quartile prices shows a price paid of £330,000 in Wokingham Borough (March 2018). This has resulted in pressures on affordability. The ratio of median property values to median gross average income for Wokingham Borough in 2017 was 11.48, compared to 9.79 for the south east. Wokingham Borough house prices are in part driven by its demographics with higher than average owner occupation and residents in managerial and professional occupations; and lower unemployment and deprivation. It also regularly appears in the Top Ten places to live in the country (Halifax Quality of Life Survey). In combination, these factors have led to strong demand and higher house prices.

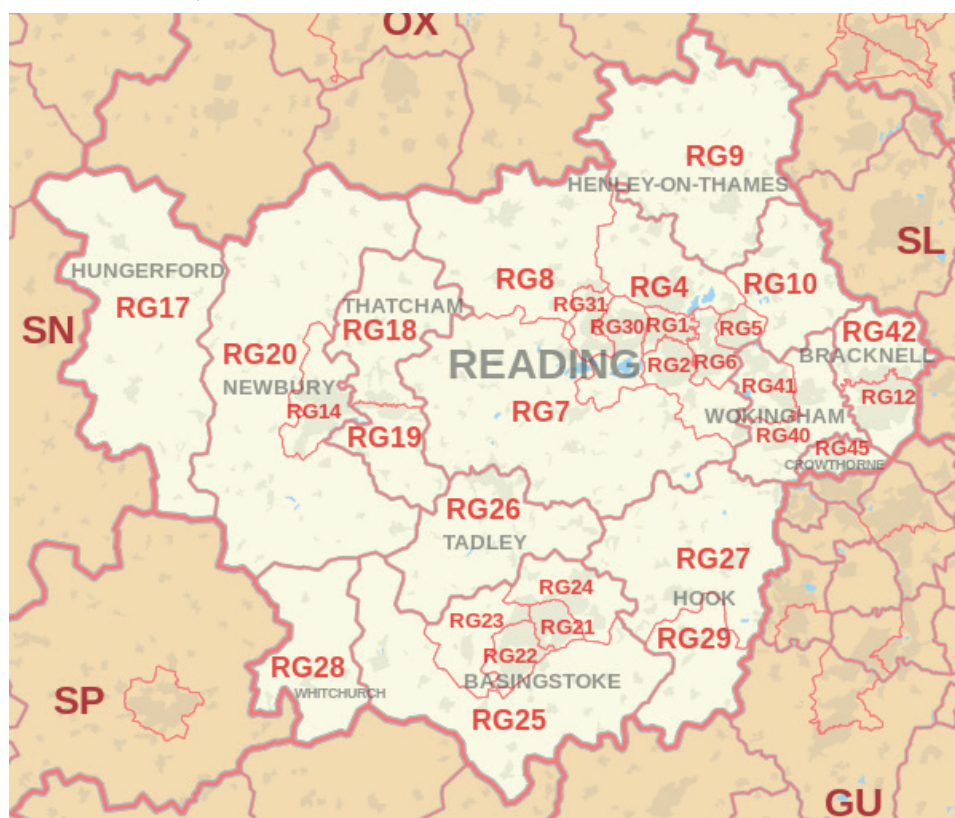


Figure 3.8: RG Area Postcode Map. Source: <https://en.wikipedia.org>

HALL FARM - POTENTIAL STRATEGIC DEVELOPMENT LOCATION

- 3.57 The Hall Farm site is located west of Wokingham and south of Reading/the M4 and north of Mole Road within postcode area RG2. RG2 comprises the area of Arborfield, Shinfield and Whitley (south Reading). Table 3.2 (see below) shows averages price paid, sales and mean current asking prices and rents for this postcode area.

Table 3.2: Postcode RG2 data

Area Statistics	Hall Farm (RG2)
Mean Average price paid (July 2018)	£372,415
No. of sales (July 2017- July 2018)	488
Mean Average current asking prices (July 2018)	£393,064
Mean Average current asking rent (average)	£1,263pcm

Source: Zoopla

- 3.58 In terms of values the data shows the following for the Hall Farm area:

Table 3.3: House type values for RG2

Property type	Mean average current value	Mean average £/m2
1 bed flat	£220,000.00	£4,358.51
2 bed flat	£289,990.00	£3,691.87
2 bed house	£341,650.00	£5,046.45
3 bed house	£459,985.71	£4,309.74
4 bed house	£872,356.25	£4,566.05
5 bed house	£989,987.50	£4,295.69

- 3.59 It should be noted that the figures recorded above reflect the sales of all stock throughout the area. New housing developments seek to set a new value tone for an area and the asking prices of new homes can be considerably higher than that for existing homes (as much as 20% according to an article 'Old v New' from onthemarket.com, 2015).

Local Demand Perspective for Wokingham

- 3.60 Local agents, Vail Williams undertook a review of current market conditions which established that overall demand is strong, especially in areas close to a direct rail link to London (Wokingham, Twyford). Developer build-out rates have been typically 4-6 sales per week for each development being brought forward. This equates to 48-72 per annum per individual developer site. Land values vary according to site specifics, site size and services but vary from about £2.1m per ha to £3.7m per ha for fully serviced sites where major infrastructure is being facilitated by a lead developer. Average plot values are in the range of £95,000-£125,000 per dwelling. The rates assessed are not those for a whole development site, but for a single residential outlet.

HALL FARM CONCEPT PLAN

3.61 The growth scenario produced for this report has sought to accommodate the promoted 1,000 dwellings on the site alongside mixed uses and required infrastructure. The site comprises of gently sloping terrain approximately 45-50m AOD bounded by a river to the west. The land adjacent to this river is unsuitable for development, however it lends itself to habitat enhancement and green spaces. The promoted land is 245 hectares of predominantly open farmland, including the University of Reading's Hall Farm site which serves their department of Agriculture. The site has hedgerows and trees along its boundaries. The whole of the promoted site has been analysed for the purposes of this report, however a concept plan has been prepared for only 1,000 dwellings on land adjoining Arborfield.

3.62 Figure 3.8 shows the concept plan which includes the following features:

- Development as a village extension to Arborfield with main vehicular access taken from the A327.
- Residential development of approximately 1,000 dwellings located off a spine road, retaining existing woodland around Arborfield and bounded by open space provision to the north and west.
- SANG to the western boundary which would be a use more suited to this area because of its proximity to the river, and the listed buildings and structures in this area of the site. In addition to this being an attractive area for SANG provision, it would also protect the existing assets and preclude built development on areas in Flood Zone near to the river. Existing woodland would also be retained in this area to buffer residential development from this area and provide an attractive boundary to the development.
- A mixed-use local centre including a primary school would be co-located in the centre of the development, accessed from the spine road which would minimise vehicle journeys due to the facilities being in walking distance of new residential development.
- Densities at approximately 25-60 dwellings per hectare would be appropriate but typically an average of about 35dph.

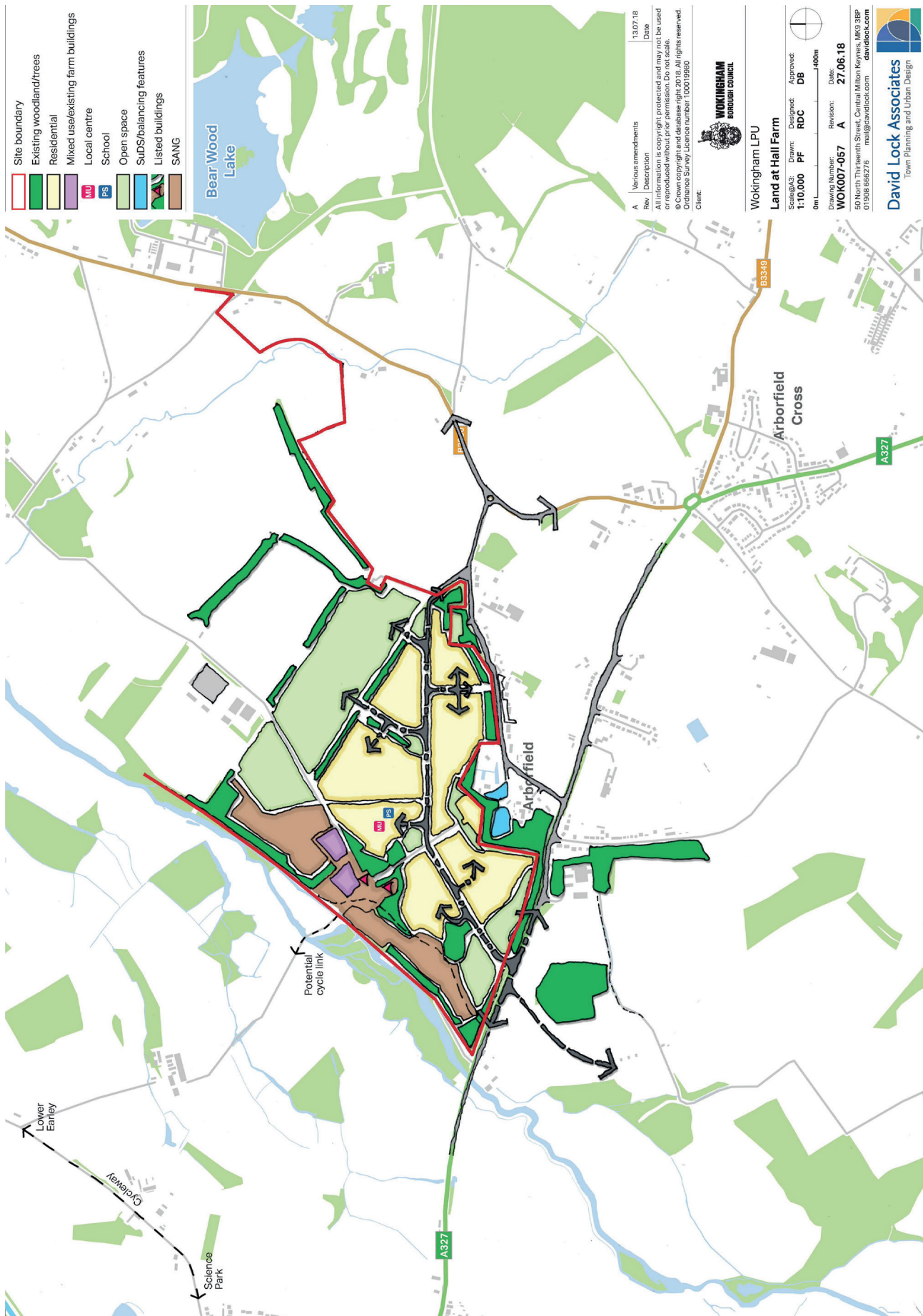


Figure 3.9: Hall Farm Concept Plan

Access & Movement

3.63 For further detail on transport and movement, see Appendix 3 for the associated Access and Movement Report. An access and movement strategy for the site is based on the utilisation of public transport and potential for cycling routes alongside a need to avoid highways impacts. This involves consideration of access to Wokingham and Reading for employment, secondary schools and further facilities. At 1,000 dwellings, provisions have been difficult to incorporate, with travel to the main towns reliant on car travel and potential for improvements to local roads and junctions.

3.64 To achieve some improvements to sustainable travel for new and existing residents, the following provisions are made for access and movement:

- access is to be taken to and from the A327 the main road providing access to this area;
- potential for a link to an existing cycleway running between the Science Park and Lower Earley (Cutbush Lane) and future potential for a route to Wokingham given the poor existing cycling infrastructure on this route; and
- provision of a minor pedestrian, cycle and emergency accesses from the site to connect directly to Arborfield.

Other Infrastructure

3.65 In addition to the transport infrastructure above, the site would also need to deliver:

- two form of entry (2FE) Primary School;
- SANG to mitigate potential impact on the Thames Basin Heath SPA;
- public open space including sports and play areas;
- on-site sustainable drainage measures; and
- the provision of utilities to serve new dwellings.

Table 3.4: Summary of infrastructure requirements

Infrastructure Required	Indicative Funding
Highway Access	
Internal residential roads	Developer
Off-site highway and junction works to enhance capacity	Developer
Public footpaths to connect to existing	Developer
A327 improvements	Developer
Sustainable Transport	
My Journey Travel Planning	Developer
Bus services and bus stop infrastructure	Developer
Off-site pedestrian and cycle improvements	Developer
Strategic Flood Alleviation	
Site preparation and drainage works	Developer
Utilities	
Energy, water and waste	Providers + Developer
Education	
1 primary school	CIL (S106 for land)
secondary schools (off site)	CIL
Further education & adult learning	CIL
Public Open Space	
SANG	Developer
Allotments	S106 for land
Children's play	Developer
On-site parks and amenity space	Developer
Sports pitches	S106 for land
Community facilities	
Community centres	S106 for land

Viability

- 3.66 The LPU must be supported by evidence which demonstrates the viability of development and infrastructure provision.
- 3.67 A high-level viability appraisal has been carried out based on a series of assumptions, see Appendix 1. A Residual Land Value has been derived, which has then been compared to the benchmark land value applied to greenfield sites in the CIL viability studies carried out for the setting of CIL. This was originally set at £300,000 per hectare but has been increased by the same indexation as CIL over the period since the CIL baseline figures were set and has therefore been tested at a fairly high hurdle rate of £375,000 per hectare.
- 3.68 This benchmark land value is set at a level which is intended to indicate that if this is exceeded, then development is viable, and will provide an appropriate incentive for a landowner to sell their land. It is considerably in excess of Existing Use Value in each of the locations considered.
- 3.69 In the test, all policy requirements including CIL and the required level and mix of affordable housing provision have been accounted for. A land value would be generated which exceeds existing use value and benchmark land value and is therefore viable based on the assumptions set out above.

- 3.70 Table 3.5 below uses a traffic light system to show where development is viable against the benchmark land value test (amber and green), and where it is not viable (red). The amber setting reflects a residual land value that is above the Benchmark Land Value, but by no more than 20%. The recently updated Government Planning Practice Guidance requires benchmark land values to be calculated based on the existing use value of the land, plus a premium for the landowner (EUV+). For the purposes of this viability exercise, EUV+ is assumed to be the benchmark land value.

Table 3.5: Viability outcomes for Hall Farm

Hall Farm units	Baseline cautious	Realistic	Slightly Optimistic
1,000			

Benchmark Land value £375,000 per ha	
	Below Benchmark Land Value
	Benchmark Land Value + up to 20%
	Benchmark Land Value + > 20%

4.0 ASHRIDGE - SITE ANALYSIS

4.1 This section summarises the analysis of the site conditions and surrounding area for the Ashridge site including:

- technical and environmental constraints including flooding, drainage, utilities, noise, air quality, ecology, landscape and heritage;
- findings from the Officer's workshop held at WBC; and
- a summary of local market conditions.

SITE DESCRIPTION

4.2 The site comprises different land parcels totalling approximately 260 hectares located north of Wokingham between the A329(M) and the M4 and to the west of Warren House Road. Two parcels are exceptions: one parcel lies immediately north of the M4 off Twyford Road and one lies to the east of Warren House Road. The land has been promoted by different landowners and developers as part of the Council's Call for Sites exercise. Figure 1.1 shows the extent of the land under consideration.

4.3 The site lies to the north of the A329(M) and the North Wokingham Strategic Development Location (SDL) which is under construction. Wokingham town centre is approximately 2km to the south from the edge of the site. The village of Hurst lies about 2km to the north of the site boundary, beyond which is the village of Twyford (approximately 5km). Currently, Twyford Road (A321) and Warren House Road are the only connections into Wokingham but there are road connections eastwards to Binfield and Bracknell via Forest Road.

4.4 The site itself is relatively flat and characterised by scattered farms, open fields, woodland areas and woodland or hedgerow boundaries. The site slopes gently from the edges (approximately 45-50m AOD) to the centre which reaches a high point of 69m. The whole of the site is shown as within flood zone 1 (less than 1 in 1,000 annual probability of river flooding) but there are identified areas of surface water flooding, for example to the south of Ashridge Farm, off Warren House Road.

4.5 The M4 and A329(M) form the north, southern, and western boundaries, except for one parcel of land shown beyond the M4, to the west of Twyford Road. Twyford Road (A321). Warren House Road/ Maidenhead Road running south-north and Forest Road running east-west essentially form an 'H' structure across the site. There are two bridges crossing each motorway. Both routes run between Wokingham and Twyford. Forest Road, to the east, provides access to Binfield and on to Bracknell. There is the need to design-in a set-back from both motorways to mitigate air quality and noise impacts. Views into the site from the motorways are limited by embankments and woodland.

4.6 There is some protected woodland, including ancient woodland at Ashridge Manor, and there are listed buildings (notably clustered at Bill Hill). The farm complexes themselves are relatively large with a mix of agricultural uses and other rural businesses, for example a garden centre at Ashridge Manor, building supplies at Warren Farm and various stables and equestrian uses.



Figure 4.1: The extent of land under consideration at Ashridge

SITE CONSTRAINTS ANALYSIS

Landownership and planning history

- 4.7 The broad study area comprises a number of sites submitted to the Call for Sites Local Plan process. These comprise a number of different land ownerships which may be complex for future site assembly.
- 4.8 A recent appeal at land south of Foxley Lane, Binfield in the neighbouring authority of Bracknell Forest Borough Council (APP/R0335/W/17/3177088) discussed the gap between Bracknell and Wokingham. The Inspector considered that:
- "The gap serves the purpose of separating settlements ...The gap is rural in nature and is experienced as a tract of countryside with limited scattered development, save for Amen Corner North development which was excluded from the gap as a major location for growth".*
- 4.9 Overall the Inspector did not look favourably upon the appeal site and cites significant harm to the character and appearance of surrounding landscape; the location is not close to sustainable transport; and there would be harm to the character of the adjacent lanes (especially Murrell Hill Lane). The Inspector's report concluded that the proposed development was: "the wrong scheme in the wrong place". Ashridge is not far from the appeal site and therefore will face much of the same issues, however it is unlikely to impact the gap between Wokingham and Bracknell to the same extent as the appeal development. The transport conditions and lack of sustainable transport raised in the appeal required consideration during the drawing up of concept plans and consideration of mitigation for development of this site.
- 4.10 The planning history for the Ashridge area itself relates to the clusters of employment and agricultural uses across the site as well as agricultural uses.

Environmental Constraints

- 4.11 Key site environmental constraints are shown in figure 4.2 and are summarised below. The site contains no insurmountable environmental risks to development but there is very little access to the strategic road network, particularly connecting back into Wokingham.

Flooding and Drainage

- 4.12 There are no Environment Agency (EA) designated Main Rivers through the site. The nearest Main River to the site is the Emm Brook, which lies on the opposite side of the A329(M) to the south of the site. Fluvial Flood Zone information is available from the EA Flood Map for planning (<https://flood-map-for-planning.service.gov.uk/>). Surface Water and Reservoir information is available from the EA long-term flood risk information maps (<https://flood-warning-information.service.gov.uk/long-term-flood-risk/map>).
- 4.13 Fluvial Flood Risk Environment Agency flood mapping data indicates that the majority of the site lies within Flood Zone 1. However, there is a small area of Flood Zone 2 which encroaches onto the northernmost point of the site.
- Flood Zone 1, is categorised as low annual probability of less than 1 in 1,000 (<0.1%) of river flooding.
 - Flood Zone 2, is categorised as medium annual probability of less than 1 in 100 (<1%) but greater than 1 in 1,000 (>0.1%) of river flooding.
- 4.14 The areas of Flood Zone 1 are not expected to present any significant fluvial flood risk constraints for the site. There will be constraints for any proposed residential development within Flood Zone 2, but development can be achievable in Flood Zone 2 with appropriate mitigation measures.



Figure 4.2: The site boundary at Ashridge with environmental constraints.

- 4.15 The appropriate climate change scenarios for consideration in development (to the year 2115) for the site are the Thames River Basin District allowances.
- Central – 25%
 - Higher Central – 35%
 - Upper End – 70%
- 4.16 The EA Surface Water Flood Maps indicates surface water flooding within the site boundary through several corridors. These corridors are mostly along the main rivers, but they also follow existing field boundaries/land drains. There is significant ponding behind the M4 and the A329(M) and surface water flooding could represent a constraint within these locations. However, the EA's Flood Risk from Reservoirs mapping indicates that there is expected to be a negligible residual flood risk from the failure of any reservoirs.
- 4.17 Wokingham Borough Council SFRA (2012), 'historic incidents of flooding' map indicates no flood events on the site. The SFRA is in the process of being updated and amendments to this section will be updated at this time. The Wokingham Borough Council Flood Risk Management Strategy (2015) includes the Areas Susceptible to Ground Water Flooding map (AStGWF). This map indicates 500m square areas where the underlying geology could, theoretically allow ground water flooding. The AStGWF map indicates that the site is expected to have a low potential for ground water flooding. The underlying ground conditions are understood to make ground water flooding unlikely, however ground conditions and the underlying water table on site should be confirmed.
- 4.18 The SFRA geology map indicates that the site is partially within a ground water protection zone. This would represent a constraint in terms of utilising infiltration type Sustainable Drainage Systems (SuDS) which is promoted in national and local policy. Some of the developable area may require setting aside for surface water attenuation features such as swales and attenuation basins.
- 4.19 National and local planning policy promotes the use of Sustainable Drainage Systems (SuDS) along a 'hierarchy' whereby reuse (rainwater harvesting etc.) and 'natural' process such as infiltration are used in preference to storage and discharge into watercourse and sewers. Surface water drainage would need to follow this hierarchy as far as possible and justify (through ground investigations etc.) where other methods are used. As the site is shown partially within a ground water protection zone in the SFRA, additional pollution control measures or alternatives to infiltration SuDS may be required.

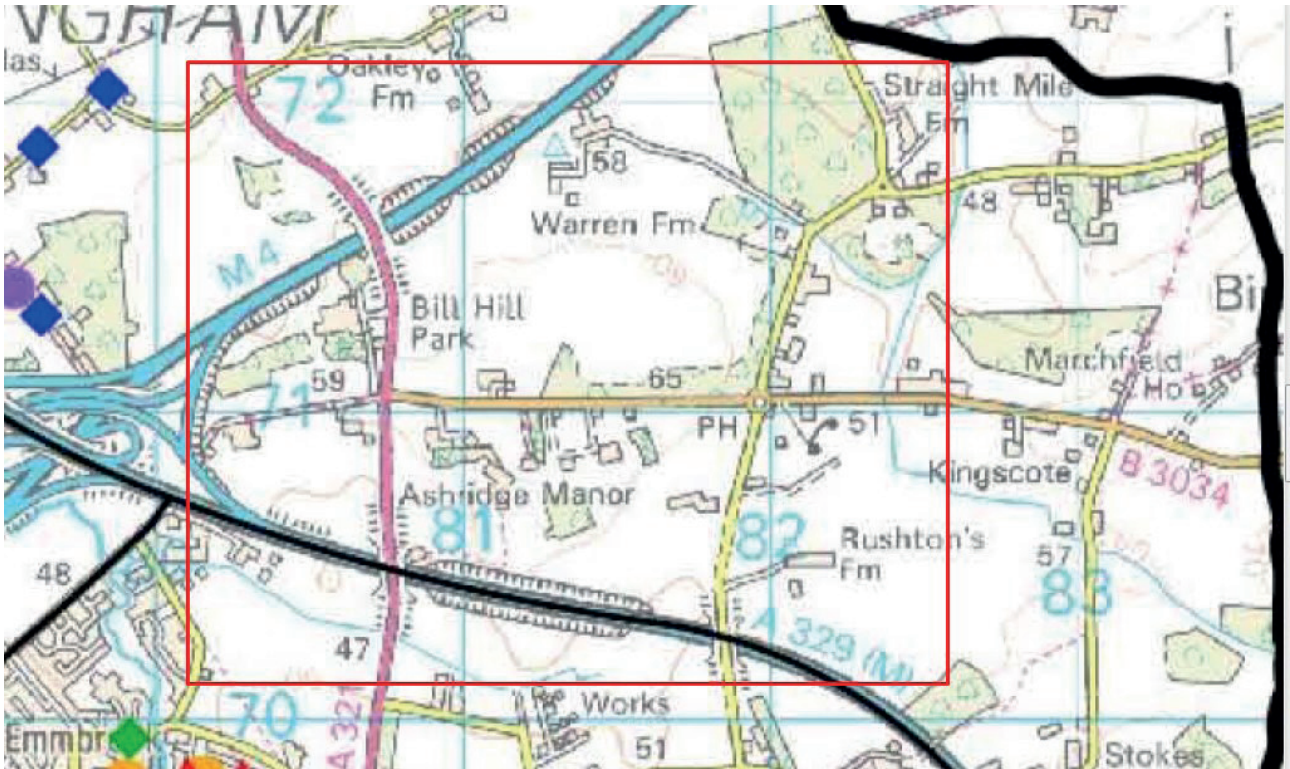


Figure 4.3: Map of historic flooding in the area

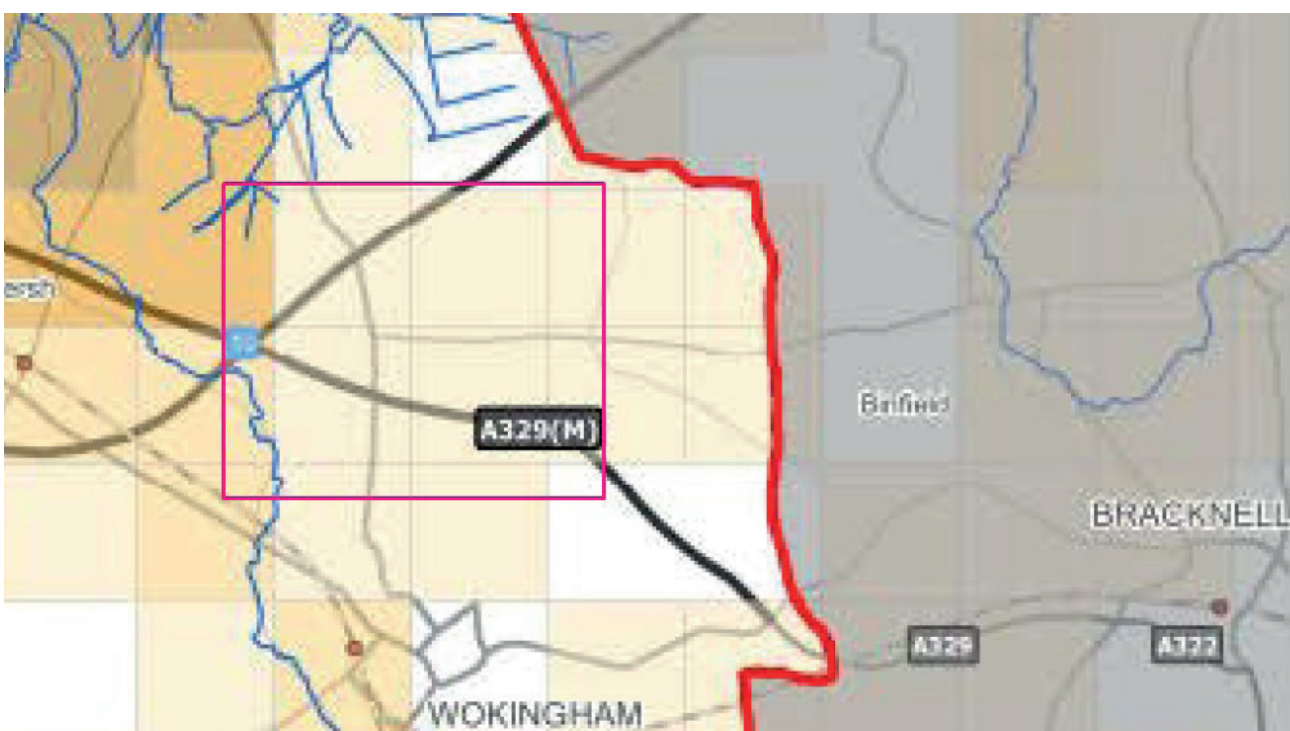


Figure 4.4: Ground water flooding map

Transport and Highways

- 4.20 The site is well located at a strategic level given that the major highways of the M4 and A329(M) are bordering the site to the north and south respectively. However, there are no direct accesses onto these roads which would be necessary to improve strategic access. Twyford Road, Forest Road, and Warren House Road pass through the site and connect the site into the local network. Both Twyford Road and Warren House Road provide the north/south connections bridging over the A329(M) linking the site to the North Wokingham Major Development area and newly constructed relief road. Forest Road provides a direct link into the settlement of Binfield to the east of the site and onwards to Bracknell.
- 4.21 Transport and highways issues require careful consideration as the site does not currently have strong connections with Wokingham. In order to maximise the proposed sites sustainability, access points to the site will also be critical. Bounded on two sides by a motorway and dual carriageway, options for connecting and crossing these will need to be well considered. The concept plan prepared for this report explores options for incorporating mass rapid transport connection directly from the A329(M) link the site to Bracknell and Reading.
- 4.22 The existing roads through the site have characteristics of rural high-speed roads containing national speed limits. Therefore, these roads would need upgrading for walking and cycling provisions. There is one existing footpath through the site north-south from Forest Road B3034 to the A329(M). The A321 provides one of the two existing roads which serve the site and therefore this would require upgrading if it were to serve a significant number of dwellings. Connections may be required to link the site on both sides of the M4 Junction 10 and the proximity of this site to the North Wokingham Major Development means that appropriate connections over the A329(M) would be required.
- 4.23 There is limited access to public transport for this site at present. Wokingham train station lies approximately 1.5 miles directly from the centre of the site. The route along existing roads is 2.1 miles. Twyford station is situated 3.3 miles to the north directly, or 4 miles along existing roads. The provision of exemplar public transport routes would be desirable given the limited road capacity. Currently, the nearest bus routes are located to the south of the site, within north Wokingham, using Warren House Road/Keepatch Road link both the 121 and 151 services use this route. To the east of the site, the 151-bus service through the village of Binfield provides the next closest public transport connection. Travelling north-south towards Twyford station, there are two routes either along Warren House Road/B3018 or Twyford Road/A321 through Hurst. All bus services are outside of acceptable walking distances. Therefore, there is an opportunity to improve bus services along north-south routes as a strategic high-speed route.

- 4.24 Pedestrians and cyclists travelling north-south could use the same two routes as for buses. However, with Maidenhead Road utilised for buses, it is recommended that Twyford Road is promoted for walking/cycling as a quieter route option. This would require cycle route improvements and given that Twyford Road also has capacity constraints forecast, additional improvements need consideration. Cycle improvements could be implemented further south of the site to link in with the North Wokingham Development Site. There is one footpath through the site north-south from Forest Road B3034 to the A329(M). This can be incorporated and/or relocated/improved into the Master Plan.
- 4.25 Future transport considerations would be delivered if the Ashridge site was developed. There may be desire from new residents at Ashridge to travel both south and west to Wokingham and Reading, however movements cannot be concluded at this stage. Given the proximity of this site to the North Wokingham Major Development, it would be necessary for appropriate connections over the A329(M) to be provided. Local networks may relieve pressure on connections over the A329(M) where trips are to/from the north of the site towards Twyford. Due to its location, the parcel of land located to the north of M4 is unlikely to be developed but could provide SANG.
- 4.26 The transport considerations lead to a possible phasing of development build, with an initial build at 500 homes seeking to utilise any remaining capacity in the existing network. Strategic transport modelling currently suggests there is no remaining capacity on Twyford Road therefore this would need to see improvements in conjunction with small-scale development of approximately 500 dwellings. Development over this scale and up to the 3,000 proposed would then trigger major highway infrastructure works.
- 4.27 However, the close vicinity of the entry and exit slips lanes off the M4 Junction 10, means there is limited opportunity to directly link from the A329(M) into the site. To unlock the future potential of the site (3,000 homes), there is the potential to provide a new junction along the A329(M), in the form of a Grade Separated 'Dumbbell' layout. There is the option to locate the proposed junction on Warren House Road, using the existing bridge structure connecting either side of the new junctions. However, the primary risks associated with this option are outlined below:
- Proximity to M4 Junction 10 on/off slips;
 - Interaction with the possible MRT route;
 - Proximity of the westbound slip road to the North Wokingham Development Area; and
 - The A329(M) becoming a 'Smart Motorway' would require additional width requirements along the corridor.
- 4.28 There is a possible opportunity to create a public transport interchange located centrally along the southern boundary of the site comprised of left in / left out slips for both direction of travel along the A329(M), with a pedestrian bridge linking both sides of the A329(M). Improvements to the cycling network into Wokingham are currently limited and would likely be required to facilitate sustainable travel from this site into Wokingham. It is envisaged that this could form part of the wider MRT route creating the extension of the MRT from Winnersh cross roads to Coppid Beech roundabout. These improvements would be subject to viability and feasibility considerations which would influence whether they could be delivered.

- 4.29 The nature of arrivals to the interchange would not be solely restricted to a typical Park and Ride, with the view that a 'Walk and Ride' journey would also be created through the attraction of residents within walking distances both from the site in question, and the north Wokingham Major development area. The public transport interchange has the potential to provide circa. 600 car parking spaces. To allow residents north of the site to access the MRT more easily, a new 'Walk and Ride' stop could be positioned along a new east-west link road through the site south of the B3034. This would also allow the bus to enter the MRT interchange, loop around the site and exit via Maidenhead Road/B3018.
- 4.30 Future public transport services could connect Wokingham station and Twyford Station, via the new Public Transport interchange within the site. The development would also improve cycling connectivity over Twyford Road, further providing connections to the North Wokingham Development Area and cycling routes to Wokingham Station. There may be opportunities to connect to other planned public transport improvements such as the East Reading MRT.
- 4.31 The potential movement of people from the site to the key locations around the area can be seen on Figure 4.5 and Figure 4.6, this shows the main demands will be Reading, Slough and London, but also South of Wokingham is also key to areas such as Farnborough and Camberley.

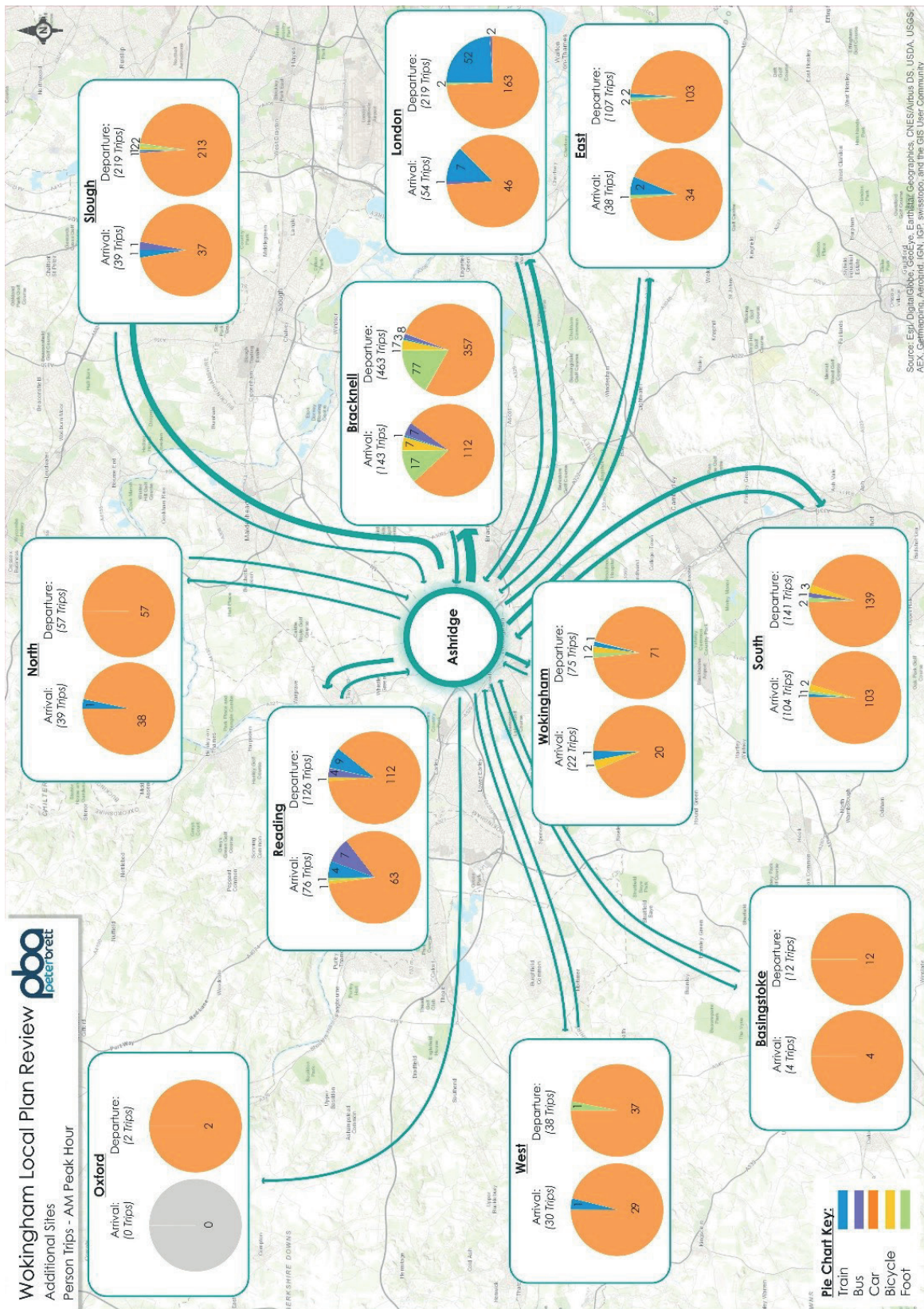


Figure 4.5: Potential movements from Ashridge AM (PBA)

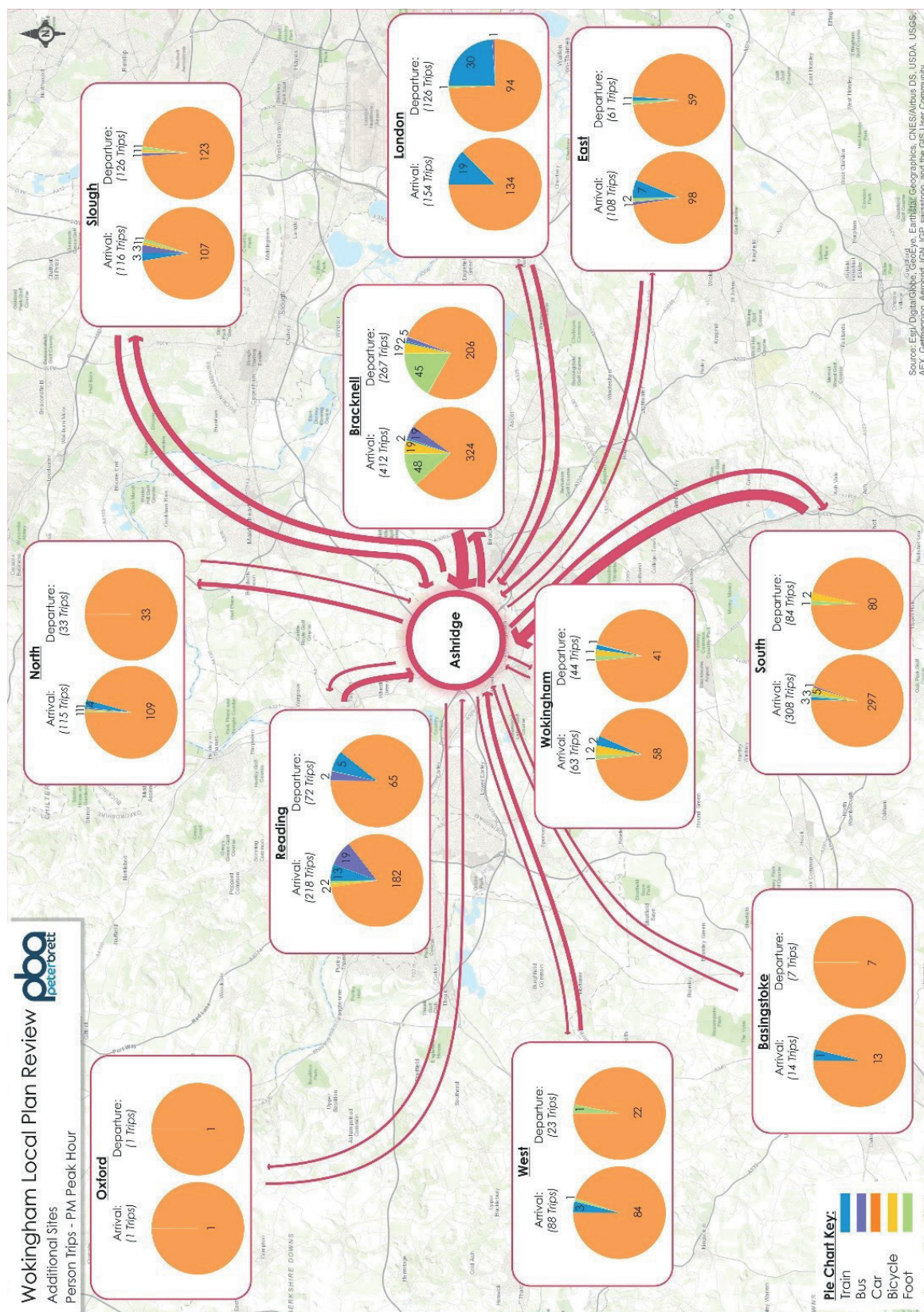


Figure 4.6: Potential movements from Ashridge PM (PBA)

Air Quality

4.32 The M4 borders the northern perimeter of the site and an Air Quality Management Area (AQMA) runs along the extent of the M4 on both sides extending for 60m. The next nearest AQMA is located within Wokingham, which is approximately 1.6km east of the site. Traffic emissions from the M4 (north of the site) and from the A329(M) to the south are an additional constraint to developing the site. Additional traffic from further development may exacerbate air quality issues so suitable mitigation should be put in place. Residential development should be located away from the AQMA and as this runs along the M4, this would also help with related noise issues.

4.33 A constraint on the site will be emissions from traffic using the M4, to the north of the site, and to a lesser extent, the A329(M) to the south. Development proposals on the site will need to ensure an appropriate standoff distance between proposed housing and the M4 and A329(M). Alternatively, commercial development, which is less sensitive to air quality constraints, could be placed alongside the M4 and A329(M). Existing roads through and adjacent to the site, including Forest Road, Twyford Road, and Warren House Road, would be the only potential constraints on the site from road traffic emissions. However, the roads are unlikely to be heavily trafficked and therefore only a nominal offset distance to the roads is likely to be required to ensure adequate air quality within the site.

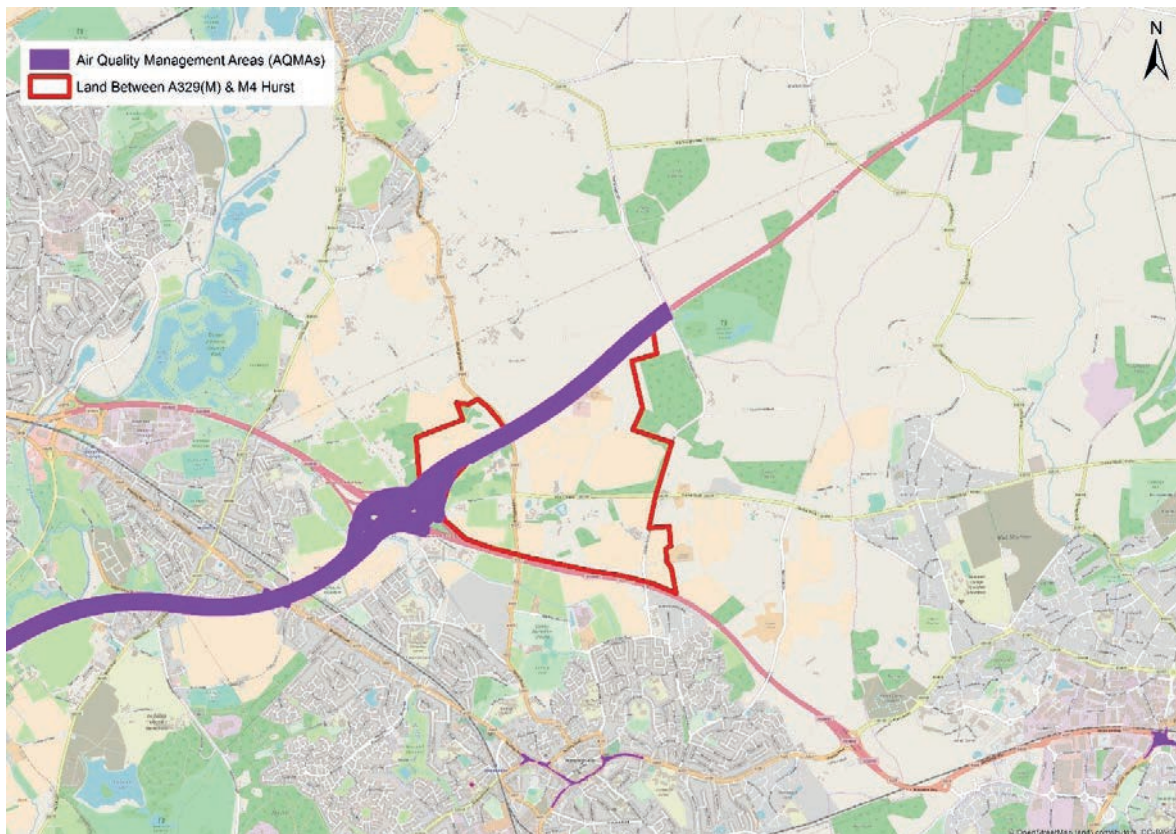


Figure 4.7: AQMA locations in the vicinity of Hall Farm

- 4.34 An appropriately detailed air quality assessment will be required to accompany any planning application for the site in order to demonstrate that the site layout is acceptable and development traffic is not having an undue impact on local air quality. It is likely however, that with improvements in vehicle emissions due to the introduction of tighter emission standards, and the move to electric vehicles, that the constraint will not be significant in the medium to long term.

Noise and Vibration

- 4.35 The M4 to the north and A329(M) to the south are potentially significant sources of noise and vibration. The motorway is located above ground level at this location and therefore mitigation of noise issues will be more difficult. Development on the site would need to consider proximity distance and/or barrier mitigation to reduce these impacts. This would be similar to those used for the North Wokingham Major Development. Sensitive residential users should be located further away from these sources and therefore some distance from the M4 and A329(M).

Geotechnical

- 4.36 No information on the concentrations of potential contaminants or hazardous ground gases in the soils and groundwaters across the site is currently available. There are no known major sources of potential contaminants and hazardous ground gases within the site and the largely agricultural setting of the site makes the presence of significant concentrations of contaminants and hazardous ground gases unlikely. The local presence of areas of contamination associated with, for example, the storage and use of fertilisers and fuel oils cannot, at this time, be discounted.
- 4.37 There are no designated geological or geomorphological features of conservation value in this area. On this basis, the constraints to the development of the site associated geological and geomorphological features are assessed to be very low.
- 4.38 The Minerals and Waste Local Plan (MWLP) for the Central and East Berkshire Authorities (including Wokingham Borough Council), is currently being updated. Mineral deposits within the site area were not identified as Preferred Areas for sand and gravel extraction within the Replacement Minerals Local Plan for Berkshire in 2001. Given the relative size and location of these deposits, it is considered unlikely that they would be viable mineral reserves. As such, the constraints to the development of the Site associated with mineral resources are assessed to be low in areas underlain by River Terrace Deposits and very low in areas underlain directly by the London Clay Formation.

- 4.39 The natural ground conditions are, in general, expected to form a suitable platform for the construction of any proposed development. Although expected to be suitable for construction of any proposed development, the London Clay Formation comprises clays with high shrinkage or swelling potential. As such any buildings and pavements founded on these clays will need to be designed in accordance with appropriate guidelines for building near trees (including those areas of former woodland).
- 4.40 The groundwater level on the site may be close to ground level in some areas; hence excavations for development may extend below groundwater level. On this basis, groundwater control measures may be required to allow construction in dry conditions in the Made Ground and River Terrace Deposits. Owing to their low permeability, groundwater control measures are unlikely to be required in the London Clay Formation. The London Clay is known to contain sulphate minerals which in the presence of groundwater and air can give rise to aggressive conditions for buried concrete.
- 4.41 A check on ground conditions should be made prior to construction to ensure the correct concrete mix design is used for buried structural elements. The London Clay is practicably impermeable so there is no scope for the use of infiltration drainage for the attenuation of runoff from buildings and paved areas. There is some potential for soakaways in the more permeable horizons of the River Terrace Deposits, but these are not extensive and will vary in their drainage properties. The London Clay and River Terrace Deposits materials are considered to be suitable for most re-use applications for earthworks although moisture conditioning may be required to achieve optimum conditions for some applications. Overall the geotechnical constraint to the development of the Site associated with the natural ground conditions and geological hazards is assessed to be low.

Historic and Current Site Use

- 4.42 Historically the site has been used for agriculture with a series of open fields with hedges and trees marking the field boundaries with limited, primarily, agricultural and residential development.
- 4.43 Many of the buildings on the site are low-rise lightly loaded structures and it is expected that the existing buildings on the site are typically founded on shallow strip or spread foundations resting on the near surface natural soils. It is expected that Made Ground associated with the previous and existing development of the site is only present to limited depth primarily comprising the sub-base to access roads and areas of hard surfacing, and the backfill to foundations and utility trenches. As such, the foundations and any Made Ground associated with the previous and existing development of the Site are not expected to represent a significant constraint to development.
- 4.44 Overall the geotechnical constraint to the development of the site associated with the previous and current use of the Site is considered to be very low in areas of agricultural land and woodland and, in general, low in the limited areas of previous or existing development.
- 4.45 The geo-environmental constraints to the development are those related to the potential effects of the site and the proposed development on significant receptors such as site workers, future site occupiers and users, ground and surface waters, and ecology and wildlife. The identified constraints relate to the previous and current use of the Site, the nature of the ground conditions on the site, and the presence of environmentally sensitive receptors

Ground Conditions

- 4.46 The ground conditions on the site are expected to comprise natural soils with only limited quantities of Made Ground associated with the previous and existing development of the site. The natural ground conditions, in general, are not expected to represent a risk of environmental hazard to the proposed development. Overall the geo-environmental constraint to the development of the Site associated with the ground conditions is expected to be very low.
- 4.47 Given that historically the site has been used primarily for agriculture purposes with limited, primarily, agricultural and residential development the risk of significant contamination being present is expected to be very low. The presence of localised areas of more significant contamination or hazardous ground gases associated with, for example, the storage and use of fertilisers and fuel oils, cannot be ruled out at this stage. Overall the geo-environmental constraint to the development of the site associated with the previous and current use of the site is, in general, considered to be very low in areas of the site used for agricultural and residential use and low in the areas of the various farms on the site.
- 4.48 The western area of the site overlies a Zone 1 and 2 groundwater Source Protection Zone (SPZ). The SPZ relates to an abstraction point located beyond the south-west corner of the site (Wokingham Waterworks) and is likely to relate to the abstraction of groundwater from the White Chalk aquifer. The White Chalk is present at depth beneath the site, underlying a significant thickness of cohesive soils, and therefore the aquifer is unlikely to be at risk from surface activities within the site boundary. Much of the northern area of the site also overlies a SPZ (Zone 3), which appears to part of a much larger merged zone with other SPZs located at distance beyond the northern and eastern site boundaries. Overall the geo-environmental constraint to the development of the site associated with the groundwater Source Protection Zone is considered to be very low.

Waste

- 4.49 There is an emerging Minerals and Waste Plan for Central and Eastern Berkshire. The site will be subject to review for mineral deposits and possibly the search for a waste to energy facility by Hampshire County Council who currently act as the waste and mineral planning authority on behalf of WBC and the other central and eastern Berkshire authorities who are jointly preparing a Minerals and Waste Plan. Development of a 3,000 dwelling scale would need to accommodate larger municipal waste facilities.

Agricultural Land

- 4.50 Agricultural land is classified according to its quality, productivity and versatility. Grade 1 land is 'excellent', Grade 2 'very good', Grade 3a 'good', Grade 3b 'moderate', Grade 4 'poor' and Grade 5 'very poor'. Grades 1, 2 and 3a are considered 'Best and Most Versatile' and are capable of producing the best crops. The Natural England regional maps shows the land being either grade 4 or 3 but the sub-category 3a and 3b is not identified.

Ecology

- 4.51 The site falls within an area that is identified as an Impact Risk Zone (IRZ) for nearby Nationally (Site of Special Scientific Interest (SSSI)) and Internationally (Special Protection Areas (SPA)), designated areas. The closest statutory designated area to the site is Lodge Wood and Sandford Mill SSSI, which lies just under 2.5 km to the north-west at its closest point.
- 4.52 However, the designation most relevant to the form of the proposed development is likely to relate to the Thames Basin Heaths SPA and SSSI. Impact Risk Zones (IRZs) are a GIS tool used by Natural England to identify zones in the vicinity of Nationally and Internationally designated areas where certain development activities may adversely affect designated areas. Approximately 50% of the site falls within the IRZ of the Thames Basin Heaths SPA. The IRZ identifies that any residential development with a net gain of greater than 50 units is identified as being a potentially damaging activity; the potential damage arising from the increased numbers of residents, and thereby increased potential for disturbance to the ground-nesting birds for which the SPA is designated, through recreational activities.

4.53 The site itself is dominated by pasture fields, fields in agricultural production or those used for nursery plant raising. However, there are also habitats of ecological value associated with the site – including deciduous woodland, some of which is designated Ancient Woodland, as well as hedgerows, parkland with trees, ponds and ditch network. The habitats within the site have the potential to support a variety of protected or otherwise notable species including:

- Bats – potential for roosting bats most likely in older trees or woodland, potential for buildings to support roosting bats too; also potential for the site to support foraging and/or commuting bats;
- Breeding birds – potential for the site to support a good variety of breeding birds associated with farmland and woodland;
- Reptiles – potential for the site to support common species of reptiles;
- Badgers – potential for the site to support badger;
- Great crested newt – species known to be present in the area; have the potential to be present within ponds in the site and immediate surrounding area; and
- Water vole – Potential to be supported by watercourses.

4.54 The potential for the above species can be drawn into emerging scheme design for Master Planning by ensuring sufficient habitat suitable for the species is retained and/or created. Due to the proximity of the site to Thames Basin Heaths, the proposed development will require consideration through Habitats Regulations Assessment, in addition to Environmental Impact Assessment. Appropriate SANG provision will be required for residential development. As it lies within 5-7km of the Thames Basin Heath SPA, mitigation will be required through the provision of Suitable Alternative Natural Greenspace (SANG) at a standard of 2.16ha per 1,000 population (with potential overlap with semi natural open space made available).

4.55 Development of the site presents an opportunity to improve its ecological value in the long-term. The principles for any future development at the site should include:

- retention, protection and enhancement of key habitats, particularly the protection of the Ancient Woodland;
- creation of a variety of new habitats across the site, including wetlands, reedbeds, hedgerow and woodland planting and species-rich grassland. Such habitats would be able to provide replacement habitat to accommodate the requirements of species-specific mitigation requirements and would ideally link up otherwise existing isolated habitat patches; and
- consideration of impacts on nearby designated areas, including the Thames Basin Heaths SPA and SSSI and the likely need to provide Suitable Alternative Natural Greenspace (SANG) within the site or in nearby areas, along with contributions to Strategic Access Management and Monitoring (SAMM) measures.

4.56 The measures described above would allow the development to provide enhancement opportunities for a range of flora and fauna and act to enhance the biodiversity value of the site, in line with national and local guiding policies.

Heritage

- 4.57 The site includes a small number of Grade II listed buildings and associated curtilages. These are located within Bill Hill Park adjacent to Junction 10. This is the western end of the site and the new development should consider a suitable relationship with this historic estate.
- 4.58 Some areas of high archaeological potential are located within this site area, predominantly this is within Ashridge Wood and the area which historically formed part of this woodland.

Sustainability

- 4.59 There are no explicit reasons why the development could not achieve high levels of resource efficient design and meet the current WBC Sustainable Design Guidance SPD requirements.
- 4.60 The development would be expected to fall into line with Government's requirements for nearly zero energy buildings by 2020 (EU Directive 2010/31/EU). Considering this a review and update of the SPD may enable and support these developments in achieving these target requirements. There is also a good potential to use Natural Capital Assessment to promote and value natural resources in the decision-making process.
- 4.61 Water resource consumption is increasingly becoming an issue in Wokingham, with potable water providers working closely with the Environment Agency in managing drought restrictions. Emergency procedures associated with drought will continue to be applied to the wider area, which needs to be considered within the strategic planning of growth in the area. A water cycle study prepared in support of the emerging local plan would support the evidence base to manage this resource constraint.
- 4.62 WBC are looking to safeguard minerals as part of the evolving Minerals and Waste Local Plan. It will be important to engage into this process to ensure the Master Plans are considered within the wider minerals requirements of the Borough and across Central and Eastern Berkshire.

Utilities

- 4.63 This section reviews the existing utilities infrastructure for the Ashridge site that is being considered for residential development. A desktop study has been undertaken which includes a review of information available via linesearch, the HSE Planning Advice Web App and Google Earth. Information has also been obtained from a PBA utility stakeholder engagement meeting and the Thames Water Key Stakeholder Position Statement dated May 2018. Asset record data has not been reviewed as part of this assessment. Where the information is available for the site, this section details a summary on existing infrastructure (electricity, gas, potable water, wastewater and telecommunications) and then the requirements to deliver new infrastructure to supply development.
- 4.64 A high voltage overhead cable (expected to be 132kv or above) is located in the north-western section of the site and crosses the M4. A network of overhead and underground cables serves the existing properties on the site. This network will need to be adapted or diverted to accommodate the new development. Discussions with SSE System Planning and Investment established that it is anticipated that the borough of Wokingham has more than adequate capacity within the electricity network. However, SSE has advised that a new primary substation will be required within the borough.
- 4.65 A linesearch enquiry of the area has identified that SGN assets are located within the site boundary. The HSE Planning Advice Web App has however not identified any major accident hazard pipelines within the site boundary. It is likely that low pressure gas mains serve the existing properties on site and this network may need to be diverted to accommodate any new development. SGN has identified that there are capacity restrictions in the Wokingham and Reading areas. SGN are in the process of producing a strategy to provide more capacity in the area.

- 4.66 South East Water own and operate the potable water network in the area. Small diameter pipes are likely to supply the existing properties on site and may have to be diverted to accommodate any new development. South East Water has confirmed that there is currently capacity in their network for up to 2054 taking into account the predicted growth in the area.
- 4.67 Thames Water own and operate the wastewater network in the area. Small diameter pipes sewers are likely to be connected to the existing properties on site and may have to be diverted to accommodate any new development. The latest position statement received from Thames Water indicates that upgrades to both the sewerage treatment works and sewerage network will be required to accommodate the proposed growth in the area.
- 4.68 A line search enquiry has identified that Openreach and Virgin Media ducts are present on site. These are likely to be insignificant in scale and may be required to be diverted to accommodate the development proposals. For a scheme of this size Openreach will automatically provide fibre to the home. It is also highly likely that many alternative fibre infrastructure providers will be interested in laying their infrastructure within the development boundary. Therefore, it is likely that that development will receive superfast broadband (greater than 24MBps).

Conclusions on Identified Constraints

- 4.69 The Ashridge site has been promoted and could accommodate approximately 3,000 dwellings in total. The phasing of development build would allow for a 500-home initial build out. Development over this scale and up to the 3,000 proposals may then trigger major highway infrastructure works which may include wider transport improvements to the A329(M). Table 4.1 summarises the main constraints and opportunities for the site.
- 4.70 The Ashridge site is not considered to have any substantial risks for which the site would not be feasible. The site offers a possible public transport interchange, located centrally along the southern boundary of the site comprised of left in / left out slips for both direction of travel along the A329(M), with a pedestrian bridge linking both sides of the A329(M). It is envisaged that this could form part of the wider MRT route creating the extension of the MRT from Winnersh cross roads to Coppid Beech roundabout. The site would also seek to improve connectivity between Twyford and Wokingham.

Table 4.1: Summary of Constraints & Opportunities

	Opportunities / No Impact	Constraints / Potential Risks
Transport	<p>Ashridge has good existing north-south transport links with Warren House Road and Twyford Road; and an east-west link via Forest Road.</p> <p>MRT interchange located centrally along the southern boundary, with a pedestrian bridge linking both sides of the A329(M), scheme would provide some congestion relief.</p>	<p>Connectivity to the strategic road network from the site is a constraint, as the roads and junctions are heavily congested.</p> <p>Limited access to public transport directly to the site. Wokingham and Twyford are the closest train stations, up to 2.5km and 4.8km from the site.</p>
Environmental		
Air Quality		The northern boundary of the site borders an AQMA (along the M4). An appropriate detailed air quality assessment will be required to accompany planning applications.
Noise		<p>The M4 and A329(M) are significant sources of noise and vibration.</p> <p>Development inside this area will need to consider proximity distance and/or barrier mitigation to ensure that development would be within guideline noise and vibration levels.</p>
Waste		<p>Development of the site will need to fit within the evolving Minerals and Waste Local Plan.</p> <p>Ashridge does have the ability to consider large municipal waste facilities.</p>
Sustainable resources	The site should be able to meet all WBC's SPD requirements for sustainable design. This can be extended to promote the good potential to use a Natural Capital Assessments. Drought sceneries in the area is putting pressure on potable water resources. Therefore, a water cycle strategy will be required.	
Ecology	Development of the site presents an opportunity to improve ecological value of the site in the long-term	The site is set within an area that is identifies as an Impact Risk Zone (IRZ) for nearby Nationally (Site of Specific Scientific Interest (SSSI) and Internationally (Special Protection Areas (SPA)), designated areas.

	Opportunities / No Impact	Constraints / Potential Risks
Flood Risk		<p>Majority of the site lies within Flood Zone 1. However, there is a small area of Flood Zone 2 which encroaches onto the northernmost point of the site.</p> <p>Areas of Flood Zone 1 are not expected to present any significant fluvial flood risk constraints for the site. There will be constraints for any proposed residential development within Flood Zone 2 but should be achievable in Flood Zone 2 with appropriate mitigation measures.</p>
Geotechnical	<p>No known major sources of potential contaminants and hazardous ground gases, and the largely agricultural setting of the site makes the presence of significant concentrations of contaminants and hazardous ground gases unlikely.</p> <p>The constraints to the development of the site associated geological and geomorphological features are assessed to be Very Low.</p> <p>The geotechnical constraint to the development of the Site associated with the natural ground conditions and geological hazards is assessed to be Low.</p> <p>The geo-environmental constraint to the development of the Site associated with the ground conditions is expected to be Very Low</p>	
Utilities		
Gas	SGN assets located within site.	Low pressure gas mains serve the existing properties on site and this network may need to be diverted to accommodate any new development.
Electricity	High voltage overhead cable. Anticipated that that the borough of Wokingham has more than adequate capacity within the electricity network.	However, SSE has advised that a new primary substation will be required within the borough.
Potable Water	South East Water operate in the area. Sufficient capacity to maintain supply up to 2054.	

	Opportunities / No Impact	Constraints / Potential Risks
Foul Water	Thames Water operate in the area.	Upgrades to both the sewerage treatment works and sewerage network will be required to accommodate the proposed growth in the area. This has been confirmed by recent correspondence with Bracknell Forest regarding WWTW capacity.
Telecoms	Openreach and Virgin Media ducts present on site. Other providers would also be interested in providing infrastructure.	

SUMMARY OF OFFICER WORKSHOP

Constraints Discussion

- 4.71 The discussion on Ashridge focused on the local knowledge of WBC officers about the site and its wider context. Transport constraints featured heavily in discussions, both in terms of access to and from the site and the congestion in the wider area. Opportunities for transport improvements alongside existing public transport networks were also discussed.
- 4.72 WBC is committed to minimising external trips by car. Accessibility is a clear issue for the area, also demonstrated through the recent dismissal of a planning appeal at land south of Foxley Lane, Binfield. WBC aspire to achieve cycling and walking routes, particularly to encourage sustainable travel into Wokingham to access secondary schools and other facilities. WBC consider the site to lack connectivity and would require a new junction with the A329(M) in order to sustain a development of 3,000 dwellings.

Concepts Discussion

- 4.73 If there were to be transport improvements at Twyford and Twyford Station this could benefit the site at Ashridge. It was felt that that these strategic links would be required in order to support the level of infrastructure which is required. Ashridge could link to a mass rapid transit route between Bracknell and Reading and facilitate a high frequency bus service between Wokingham and Twyford Stations.

- 4.74 The workshop discussed the potential development quantum on the site, this raised potential opportunities which might arise from strategic scale development balanced with what would or would not be achieved if Ashridge were to see small incremental growth levels. Officers agreed that there were no set numbers for the site at this stage but it could deliver up to approximately 3,000 dwellings. Under current planning policies, 35% affordable housing will be required, with a mix of 1, 2 and 3 bed properties, based on 70% affordable rent and 30% shared ownership.
- 4.75 The growth potential for this site should be balanced against what is likely to be delivered given the scale of traffic and accessibility issues, the major junction and road improvements may not be viable. It was raised that some of the local roads are reaching capacity. The workshop also invited discussions on locally consented developments and proposed transport and environmental schemes which would have the potential to influence or impact upon potential development at this site.
- 4.76 The workshop also covered noise issues related to the motorway, the large SANG south of the A329(M) and approximately 70% of the site itself would be within the 7km SANG requirement. The site is not within Flood Zone 2 or 3 although suffers from surface water flooding issues near the motorway as already identified through the constraints mapping exercise.

UNDERSTANDING THE LOCAL MARKET

- 4.77 Both the commercial and residential market has been reviewed given the scale of the site would indicate a potential mixed-use development.

Overview of commercial property market

- 4.78 The Thames Valley sub-market area benefits from strong functional relationships with the key M4 markets, including outer London Boroughs, Heathrow Airport and Reading. The key sub-markets include Reading, Wokingham, Bracknell, Slough and Maidenhead. There is a substantial stock of employment space in Berkshire; some 6.5 million sqm of which the majority is offices. Take-up of stock between 2000-2012 showed a healthy level of demand, partly driven by the influence of Reading which has seen the largest increase in prices outside of London. Although the average rate of take up has slowed in the last two years the Thames Valley economy is expected to grow 2.4% per annum from 2017-2021 - ahead of the UK average. The tech market plays a significant role in the Reading office market with an estimated 44,000 jobs in the sector (14 tech jobs per 1,000 people).
- 4.79 Office supply in Wokingham Borough is lower than in the administrative areas of Reading or Bracknell although the development of Green Park business park at junction 11 of the M4 has increased the offer with 40% being located within the borough. Thames Valley Park and Winnersh Triangle Business Park operate within the Reading market and capture larger requirements and command higher rents. In contrast, Wokingham town centre office market, and Mulberry Business park, offer smaller, more diverse and competitive office space.
- 4.80 The Ashridge site to the north of the A329(M) is likely to cater for the local commercial market initially, as there is already established commercial activity taking place on the site. Improved transport links through the addition of a new junction to the A329(M) would give this location the potential to cater for significant commercial premises based on regional demand in the future.

Market activity

- 4.81 The office market has concentrated to some extent on Reading town centre following the Network Rail £900m upgrade of the railway station, but there has been a healthy investment market in the wider area, for example the £98.3m acquisition of the Foster Wheeler building in 2015. Average rents in Wokingham, however, are generally lower than the western corridor average (£230.88 per sqm compared to £286.32 per sqm) but, following a period of negative net absorption in 2012-2015, there has been healthy rental growth up to and including 2017 in Wokingham.
- 4.82 Wokingham Borough has also emerged as a hub for hi-tech/industrial space in the Thames Valley in the last 10 years linked to research companies associated with Reading University and the advent of Thames Valley Science Park.

Future requirements

- 4.83 The Economic Development Needs Assessment (EDNA) for the Central Berkshire Functional Economic Market Area (FEMA) (including WBC, Reading Borough Council, Bracknell Forest Council and the Royal Borough of Windsor and Maidenhead) (October 2016) sets out a synopsis of the employment market, concluding that:
- employment space within the Central Berkshire FEMA is now evenly split between offices and industrial, following decade or so of office growth and reduction in industrial space;
 - Reading is the dominant location for employment uses but with significant employment clusters adjoining Reading within other boroughs; and
 - Wokingham Borough recorded a net gain in employment space over the last 10 years (2006-2016).

4.84 More specifically, the study sets out scenarios for possible future employment requirements. Three scenarios were assessed:

- (i) projections of employment growth in the main B class sectors (labour demand) derived from economic forecasts from Cambridge Econometrics;
- (ii) consideration of past trends in completions of employment space using monitoring data from the boroughs; and
- (iii.) estimating future growth of local labour supply based on population projections.

Application of these scenarios to Wokingham Borough for the period 2013-2036 indicates the Gross employment land requirements shown below. Additional work to calculate employment requirements is also being undertaken as part of the evidence base to support the Local Plan Update.

Table 4.2: Gross employment land requirements (Ha) for Wokingham Borough by scenario 2013-2036

		1. Baseline Labour Demand (Ha)	2. Past Completion rates (ha)	3. Labour Supply
Wokingham	Offices B1a B1b	29.1	22.0	30.9
	Industrial B1c/B2/B8	28.0	18.4	33.0
	Total B Class Land acres (ha)	57.1	40.4	63.9

Overview of Residential Market

4.85 Average house prices in Wokingham Borough are higher than those in the south east. HM Registry data shows average prices as at April 2018 for Wokingham compared with the South East region as a whole (see table 4.3 below).

Table 4.3: House Values in Wokingham compared with the wider south-east region

Dwelling type	Wokingham Borough	South East Region
Detached	£644,391	£555,533
Semi-detached	£406,507	£347,267
Terraced	£319,315	£272,407
Flat/Maisonette	£236,864	£203,726

4.86 ONS data for lower quartile prices shows a price paid of £330,000 in Wokingham Borough (March 2018). This has resulted in pressures on affordability. The ratio of median property values to median gross average income for Wokingham Borough in 2017 was 11.48, compared to 9.79 for the south east. Wokingham Borough house prices are in part driven by its demographics with higher than average owner occupation and residents in managerial and professional occupations; and lower unemployment and deprivation. It also regularly appears in the Top Ten places to live in the country. In combination, these factors have led to strong demand and higher house prices.

Ashridge Potential strategic development location

4.87 The Ashridge site is located between the A329(M) and the M4 is within post code area RG40. Table 3.4 shows the average price paid, sales and mean current asking prices and rents for this postcode area.

Table 4.4: Postcode RG40 data

Area Statistics	Ashridge (RG40)
Mean Average price paid (July 2018)	£484,326
No. of sales (July 2017- July 2018)	378
Mean Average current asking prices (July 2018)	£506,003
Mean Average current asking rent (average)	£1,353pcm

Source: Zoopla

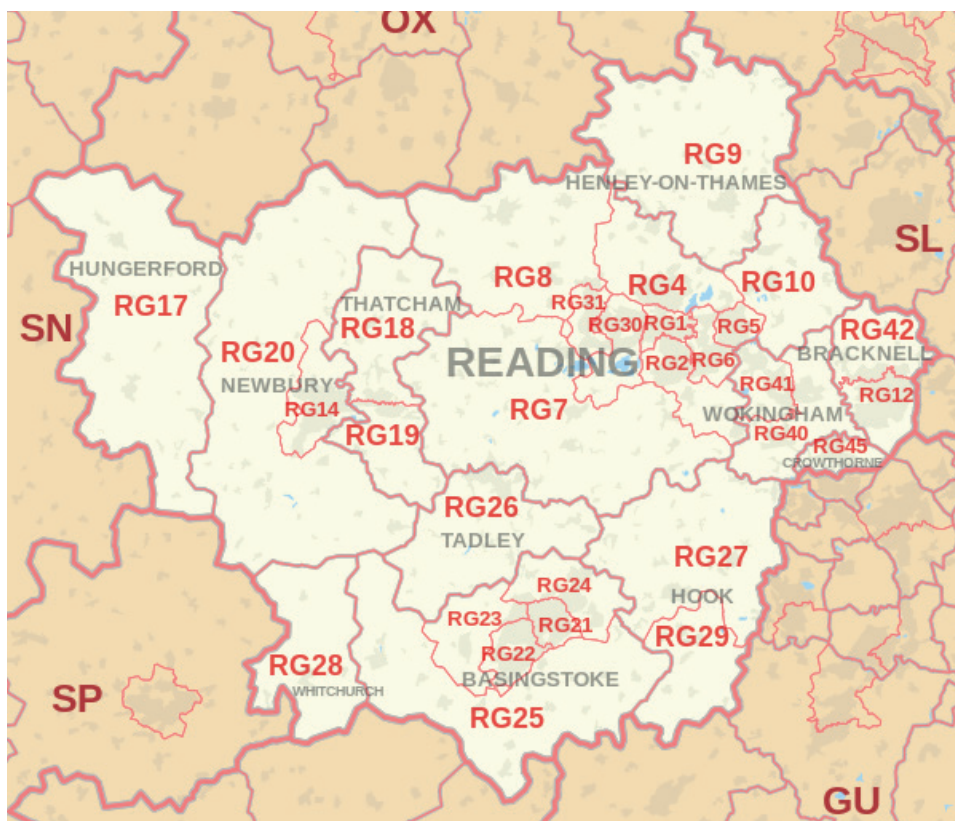


Figure 4.9 – RG Area Postcode Map. Source: <https://en.wikipedia.org>

4.88 In terms of values the data shows the following for the North Wokingham area:

Table 4.5: House type values for North Wokingham

Property type	Mean average current value	Mean average £/m2
1 bed flat	£252,850.00	£4,989.02
2 bed flat	£342,962.89	£4,509.20
2 bed house	£385,145.00	£4,791.28
3 bed house	£487,049.44	£4,838.35
4 bed house	£636,930.00	£4,536.64
5 bed house	£924,937.50	£4,451.12

4.89 It should be noted that the figures recorded above reflect the sales of all stock throughout the area. New housing developments seek to set a new value tone for an area and the asking prices of new homes can be considerably higher than that for existing homes (as much as 20% according to an article 'Old v New' from onthemarket.com, 2015). The Ashridge site will also be influenced to some extent by the more affluent areas around Twyford as well as the existing North Wokingham values.

Local demand perspective

4.90 Local agents, Vail Williams undertook a review of current market conditions which established that overall demand is strong, especially in areas close to a direct rail link to London (Wokingham, Twyford). The market intelligence also detailed that developer build-out rates have been typically 4-6 sales per week for each development being brought forward. This equates to 48-72 per annum per individual developer site. Land values vary according to site specifics, site size and services but vary from about £2.1m per ha to £3.7m per ha for fully serviced sites where major infrastructure is being facilitated by a lead developer. Average plot values are in the range of £95,000-£125,000 per dwelling.

ASHRIDGE CONCEPT PLAN

4.91 This exercise has assumed that approximately 3,000 dwellings could be accommodated on the site alongside other mixed uses and infrastructure. Figure 4.9 shows the concept plan which includes the following features:

- The structure of the plan derived from the existing 'H' shape of routes along Twyford Road, Warren House Farm Road and Forest Road; and from the pattern of field boundaries, woodlands and existing farm buildings.
- Residential development of approximately 3,000 new homes organised by a series of linked villages with shared infrastructure. A range of densities could be achieved but typically between 25 to 40 dwellings per hectare.
- A Park & Ride and public transport hub will be a key feature of the transport strategy, alongside cycling links and improvements to Wokingham, to enable a high-quality bus services to Twyford Station, to Reading and Bracknell and cycling to Wokingham.
- Two primary schools are located in the site to minimise walking distances and where they could be co-located with local community villages and services.
- Existing farm buildings are integrated as potential mixed/use employment areas which could provide new uses and support existing rural industries in the area.
- A continuous green buffer is located along the motorways except where a new Park & Ride site would be located along the A329(M).
- Existing water bodies and woodland features are incorporated into green spaces and additional planting can help reinforce hedgerows and tree belts.
- Two areas of SANG are shown: one north of the M4 and one east of Warren House Road. These would be sufficient to mitigate the impact of the entire site.



Figure 4.9: Ashridge Concept Plan

Access and Movement

4.92 For further detail on transport and movement, see Appendix 3 for the associated Access and Movement Report. An access and movement strategy for the site is predicated on public transport and cycling connections but also the need to avoid severe highway impacts. This involves investing in measures for non-car modes to get people to Wokingham town centre, station and secondary schools, to Twyford Station (given the forthcoming Elizabeth line services) and to employment in both Reading and Bracknell. These have been proposed in the context of limited capacity on the highway network, notably on the North Wokingham Distributor Road, and the limited connections from the site to Wokingham town itself. To achieve this the following is proposed:

- The extension of Reading MRT and the provision of two MRT stops alongside the A329 (M).
- A Park & Ride facility (approx.600 spaces) within the site and adjoining the new MRT service stops with a passenger hub building.
- New Pedestrian and cycle bridge over the A329(M) to enable access to the Park & Ride from west bound MRT stops as well as ped-cycle connectivity into north Wokingham.
- Provision of a peak-time high frequency bus service between Wokingham station and Twyford station via the site and the new Park & Ride. The route could run along Warren House Road and Maidenhead Road.
- A series of improvements to cycle routes into Wokingham town centre
- New grade separated junction from the A329 (M) at Warren House Road.

- Local highway improvements and traffic calming in local villages.

Other Infrastructure

4.93 In addition to the transport infrastructure above the site would also need to deliver:

- Two primary schools (one 2 form entry and one 3 form entry) plus additional safeguarded land for school expansion (1 hectare).
- Two community centres to serve the new village communities.
- SANG to mitigate any impact on the Thames Basin Heath SAC (approximately 16 hectares required but could be combined with other natural/semi natural green space).
- Other public open space including outdoor sports and play areas.
- On-site Sustainable drainage measures.
- Noise attenuation measures where necessary.
- Utilities provision including primary sub-station.

Table 4.6 summarises the assumed infrastructure requirements and whether they would be funded

through development cost or through Community Infrastructure Levy (CIL).

Table 4.6: Summary of infrastructure requirements

Infrastructure Required	Indicative Funding
Highway Access	
New access junction from A329(M)	Developer
Internal residential roads	Developer
Off-site highway and junction works to enhance capacity	Developer
Public footpaths to connect to existing	Developer
A329(M) improvements	Developer
Sustainable Transport	
My Journey Travel Planning	Developer
Bus services and bus stop infrastructure	Developer
New Park & Ride and PT interchange building	CIL
MRT stops off A329(M)	Developer
Off-site pedestrian and cycle improvements	Developer
Strategic Flood Alleviation	
Site preparation and drainage works	Developer
Utilities	
Energy, water and waste	Providers + Developer
Education	
2 primary schools	CIL (S106 for land)
secondary schools (off site)	CIL
Further education & adult learning	CIL
Public Open Space	
SANG	Developer
Allotments	S106 for land
Children's play	Developer
On-site parks and amenity space	Developer
Sports pitches	S106 for land

Community facilities	
Community centres	S106 for land

Viability

- 4.94 The LPU must be supported by evidence which demonstrates the viability of development and infrastructure provision.
- 4.95 A high-level viability appraisal has been carried out, see Appendix 2. A Residual Land Value has been derived, which has then been compared to the benchmark land value applied to greenfield sites in the CIL viability studies carried out for the setting of CIL. This was originally set at £300,000 per hectare but has been increased by the same indexation as CIL over the period since the CIL baseline figures were set and has therefore been tested at a fairly high hurdle rate of £375,000 per hectare.
- 4.96 This benchmark land value is set at a level which is intended to indicate that if this is exceeded, then development is viable, and will provide an appropriate incentive for a landowner to sell their land. It is considerably in excess of Existing Use Value in each of the locations considered.
- 4.97 In the test, all policy requirements including CIL and affordable housing provision have been accounted for, and a market level of developer's profit has been allowed.
- 4.98 The assessment indicates that at Ashridge, development would not generate a land value sufficiently above its existing use value to encourage a landowner to sell for development. This indicates that based on these assumptions the development would not be considered viable. However, if the A329(M) junction was to be

covered by CIL, then viability could be achieved, even allowing for the A329(M) improvements to be met by the developer.

4.99 The assessment indicates that at Ashridge, development would not generate a land value sufficiently above its existing use value to encourage a landowner to sell for development. This indicates that based on these assumptions the development would not be considered viable. If, however, the A329(M) junction and other infrastructure items were to be removed from the development costs and covered by CIL or other funding then viability could be achieved.

4.100 Table 4.7 uses a traffic light system to show where development is viable against the benchmark land value test (amber and green), and where it is not viable (red). The amber setting reflects a residual land value that is above the Benchmark Land Value, but by no more than 20%. The recently updated Government Planning Practice Guidance requires benchmark land values to be calculated based on the existing use value of the land, plus a premium for the landowner (EUV+).

Table 4.7 – Viability outcomes for the Ashridge site

Ashridge Farm units	Baseline cautious	Realistic	Slightly Optimistic
3,000			

Benchmark Land value £375,000 per ha	
	Below Benchmark Land Value
	Benchmark Land Value + up to 20%
	Benchmark Land Value + > 20%

4.0 CONCLUSIONS

- 5.1 This report has been prepared to assess site constraints, infrastructure requirements, viability considerations and deliverability of development of two strategic-scale sites in Wokingham Borough promoted for development at Hall Farm and Ashridge. The site assessments and analysis has informed growth scenario concept plans for each site which demonstrate the potential for strategic development on each site. The report is background evidence for WBC in determining their development strategy for the Wokingham LPU but does not recommend whether the sites should be included as allocations in the Local Plan Review.
- 5.2 In the case of Hall Farm, approximately 245ha has been included through the Local Plan Update Call for Sites process but only 1,000 dwellings is being promoted. Therefore, in order to present a concept plan for the site an assumption has been made that this would form an extension of the village of Arborfield. At 1,000 dwellings, development is limited in its ability to offer strategic benefit beyond the site itself in terms of infrastructure improvements. Development should integrate and provide facilities for the adjacent Arborfield village as demonstrated within the concept plan (a primary school, local centre and open spaces).
- 5.3 In terms of the viability of Hall Farm, all policy requirements including CIL and affordable housing provision have been accounted for, and a land value which exceeds existing use value and benchmark land value. Therefore, the development at this site is viable based on the assumptions set out above. WBC may wish to consider the potential of the wider landholdings to deliver strategic infrastructure and mixed-use employment/housing development. There is further potential for this site, given its proximity to the strategic road network with the M4 to the north.
- 5.4 In contrast, 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.
- 5.5 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.



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