

LAND NORTH OF ARBORFIELD ROAD

TRANSPORT ASSESSMENT

BELLWAY HOMES LTD (THAMES VALLEY)

28 AUGUST 2024



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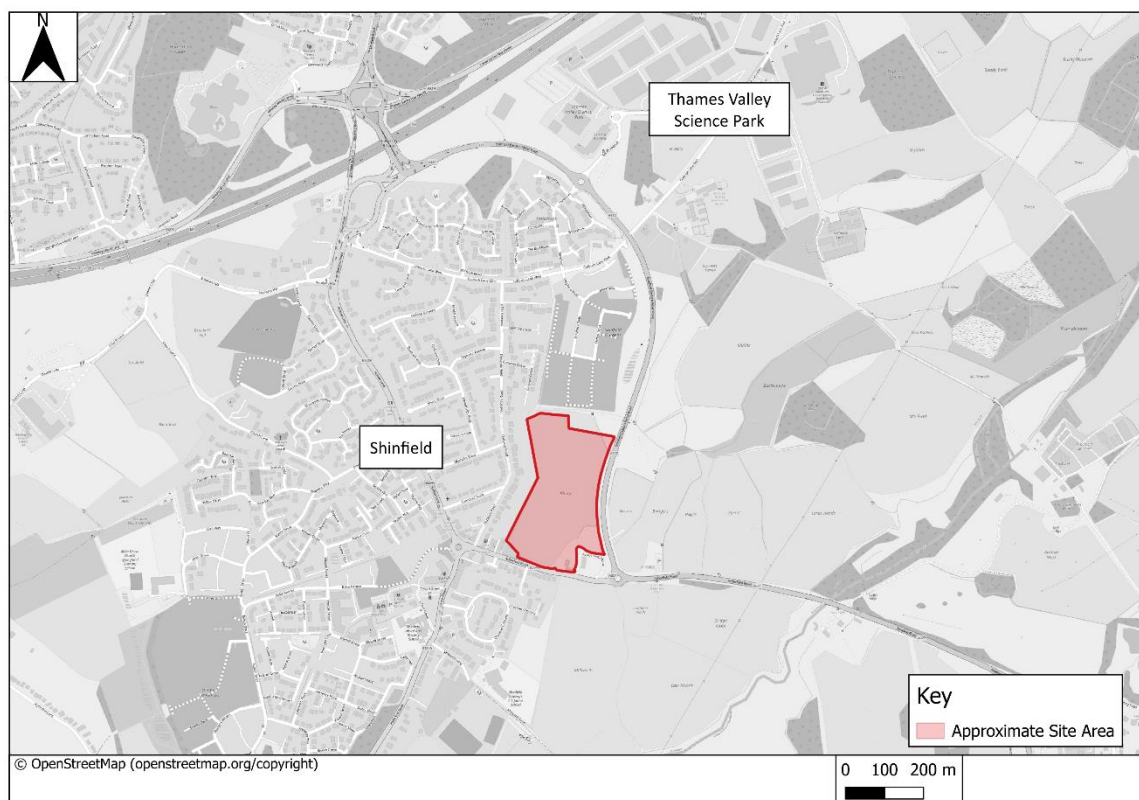
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1.0 Introduction

Context

- 1.1. This Transport Assessment has been prepared by Abley Letchford Partnership Ltd, on behalf of Bellway Homes Ltd (Thames valley), in relation to the proposed residential development on Land North of Arborfield Road, Shinfield. The site is located in Shinfield, to the south of Reading. **Figure 1.1** shows the site in its local geographic context.
- 1.2. The description of the development proposals for the site is as follows:
“Full planning application for the erection of new dwellings, open space, landscaping, supporting infrastructure and associated works.”

Figure 1.1: Site Location





Development Proposals

- 1.3. This Transport Assessment relates to a full planning application for a development of 191 residential dwellings with access to be formed from the south onto Arborfield Road. It is also proposed to connect to the existing spine road which routes through the Littlebrook and Long Acre residential estates which lie to the north of the site, thereby providing a second point of access which will deliver a through route between Arborfield Road and the Shinfield Eastern Relief Road / Thames Valley Science Park roundabout.
- 1.4. Of note is that Wokingham Borough Council is currently preparing a Local Plan Update which includes identification of the land for delivery of 191 residential units within the wider South of M4 SDL allocation site (Emerging Policy SS5 & Appendix D of the Local Plan Update, November 2021 refers).
- 1.5. A copy of the proposed Layout for the development is included at **Appendix A** of this report.

Form of Assessment

- 1.6. The planning application is a full application and as such the internal layout of the development alongside details for all points of vehicular and non-vehicle accesses are to be determined in detail.
- 1.7. Based on the thresholds set out in Appendix B of 'Guidance for Transport Assessments', published by DfT in 2007, the scale of development proposed requires a Transport Assessment Report to be prepared to analyse the impact of the development.
- 1.8. A Transport Scoping Report (ALP Report Ref: HD008-R002) has been submitted to Wokingham Borough Council (WBC). The scoping exercise set out the methodology of assessment and included the approach that should be taken to appraise the transport aspects of the proposed development. Similarly, the approach being taking in respect of the traffic modelling methodology was presented within a separate report (ALP Report Ref: HD008-R003) which was also submitted to Wokingham borough Council for review. Highway officers at Wokingham Borough Council provided confirmation in June 2024 that the approach being taken in both respects is acceptable. Of particular note is that the traffic modelling of the development proposals is being undertaken on an agreed basis using the Wokingham Strategic Transport Model (WSTM).

Structure of the Transport Assessment Report

- 1.9. This Transport Assessment Report has been produced to demonstrate the suitability of the proposed development in transport terms with all modes of travel considered and is structured as follows:
 - Section 2 : Transport Policy
 - Section 3 : Existing Transport Conditions
 - Section 4 : Development Proposals
 - Section 5 : Travel Demand
 - Section 6 : Wokingham Strategic Traffic Model (WSTM)
 - Section 7 : Assessment of Vehicular Impact
 - Section 8 : Appraisal of Non Car Travel
 - Section 9 : Summary and Conclusions

2.0 Transport Policy

Context

2.1. The following national and local planning policies have been reviewed and analysed with relevance to the development proposals and their locational context.

- National Planning Policy Framework (Updated December 2023).
- NPPG 'Travel Plans, Transport Assessments and Statements in Decision-Taking' (March 2014).
- Wokingham Borough Adopted Core Strategy (2006-2026).
- Wokingham Borough Council : Emerging Local Plan Update (November 2021)
- Wokingham Borough Third Local Transport Plan (LTP3) 2011-2026.
- Shinfield Parish Council Neighbourhood Development Plan (February 2017).

National Planning Policy Framework (Updated December 2023)

2.2. The Department of Community's and Local Government published the 'National Planning Policy Framework' (NPPF) document in March 2012, the latest update to this has occurred in December 2023. The NPPF sets out the governments planning policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and development can be produced.

2.3. The purpose of the planning system is to contribute to the achievement of sustainable development. So that sustainable development is pursued in a positive way, at the heart of the framework is a presumption in favour of sustainable development.

2.4. The NPPF states that transport issues should be considered from the earliest stages of plan making and development proposals. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering genuine choice of transport modes.

2.5. In respect of promoting sustainable travel the NPPF advocates that planning policies and decisions should consider whether:

- Appropriate opportunities to promote sustainable transport modes can be – or have been - taken up, given the type of development and its location;
- Safe and suitable access to the site can be achieved for all users;
- The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

2.6. The guidance advises that, subject to the above considerations, development should not be prevented or refused on transport grounds unless the residual impacts of the development are severe.



Planning Practice Guidance (March 2014)

- 2.7. The National Planning Practice Guidance web based resource was launched in March 2014 by the Department for Communities and Local Government. The guidance covers all aspects and procedures of the planning process and supports the National Planning Policy Framework.
- 2.8. The guidance states that supporting transport statements for planning applications are important as they should support national planning policy which sets out that the planning process should actively manage patterns of growth in order to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable.
- 2.9. Such statements should be proportionate to the size and scope of the proposed development to which they relate and build on existing information wherever possible. Further to this they should be tailored to particular local circumstances.

Wokingham Borough Adopted Core Strategy (2006-2026)

- 2.10. The Wokingham Borough Core Strategy was adopted in January 2010 and sets out a vision for how the Borough will develop in the period to 2026. Policies of relevance to this development site include:
- CP1 establishes a requirement to provide sustainable development and in particular to provide attractive, functional, accessible, safe, secure and adaptable schemes with the aim of enhancing the overall sustainability of the area through minimising impact on the environment, including access to facilities.
 - CP4 establishes the need for proposals to demonstrate that there is either sufficient infrastructure capacity or that this can be readily provided as part of any scheme. Infrastructure includes roads and other transport requirements.
 - CP6 establishes a desire to manage travel demand rather than designing for the private car. The aim of policy CP6 is to ensure that all proposals achieve sustainable development and that people have the widest range of choice in selecting transport modes thereby helping to reduce the use of the private car.
 - CP10 sets out a need to make improvements to the Strategic Transport Network including improvements to the quality and frequency of public transport services along any part of the network and improvements to increase the use of bicycles, including cycle paths.
 - CP19 establishes the need for a proposed mixed use strategic development South of the M4. The development areas encompass land at Three Mile Cross, Spencers Wood and Shinfield and requires the delivery of the Shinfield Eastern Relief Road.
- 2.11. Also of note is that Policy CP19 of the Core Strategy advocates the implementation of the Eastern Relief Road which has since been completed and opened.

Wokingham Borough Third Local Transport Plan (LTP3) 2011-2026

- 2.12. The Third Local Transport Plan for Wokingham Borough (LTP3) covers the fifteen year period between 2011-2026. The main objective articulated by the LTP3 is to provide a cost effective, inclusive transport network that enhances the economic, social and environmental prospects of the Borough whilst promoting the safety, health and well being of those that use it.



- 2.13. The following five goals for the LTP3 are identified which reflect the local priorities set out in Wokingham Borough's Sustainable Community Strategy and the overarching national transport priorities:
- To have a resilient, safe highway network that balances capacity for all users, enhances the economic prospects of the Borough, and promotes sustainable travel.
 - To work with partners to promote walking and cycling as a health enhancing physical activity for all of our residents through providing; connected, convenient, safe and signed pedestrian networks across the Borough to enhance existing networks; new cycleways integrated with the existing cycle network; and improved cycle parking at stations, businesses and schools.
 - To promote an integrated and inclusive public transport network that provides a convenient, acceptable, reliable and affordable alternative to car travel.
 - To enable people who live, visit and work in the Borough to make informed, safe and sustainable travel decisions from a range of transport options.
 - To manage the demand for travel in order to ensure that people have a high level of access to different destinations, with sufficient choice, whilst minimising the adverse effects of congestion.

Wokingham Borough Council – Emerging Local Plan Update (November 2018)

- 2.14. Wokingham Borough Council's Local Plan Update: Right Homes, Right Places - Revised Growth Strategy, was issued in November 2021 and then subject to public consultation during January 2022.
- 2.15. Of note is that the Land North of Arborfield Road site is identified as a preferred site allocation for the delivery of 191 dwellings as part of the wider South of M4 SDL allocation set out under Draft Policy SS5.
- 2.16. Following a formal Regulation 19 consultation (which is anticipated to commence in August and close in September 2024), the Local Plan Update is anticipated to go through Examination in Public during 2024 with a view to becoming adopted in 2025-26.

Shinfield Parish Council Neighbourhood Development Plan (February 2017)

- 2.17. Following examination and a referendum, the Shinfield Parish Council Neighbourhood Plan is part of the WBC's Development Plan and will be given full weight in the determination of all planning applications within Shinfield Parish.
- 2.18. The Neighbourhood Plan seeks to achieve the objectives of:
- Ensuring that new developments enhance the character of existing settlements;
 - Developing a vibrant and prosperous neighbourhood by encouraging development that supports a good range of housing, schools, shops and services that meets the needs of local people and protects the quality of the local environment.
 - Providing new and diverse leisure and recreational activities in order to promote healthy and crime free lifestyles for everyone.
- 2.19. In relation to transport and highways the Neighbourhood Plan sets out the following policies in Policy 4 stating that all development proposals should demonstrate appropriate levels of accessibility and highway safety. The following issues should be considered when forming such proposals.



- Restricting traffic speed through traffic calming measures such as the use of chicanes within residential streets, restricted speed limits within development roads and pedestrian priority zones.
- Make the fullest possible use of public transport, walking and cycling to school, work places and local amenities, through measures such as (but not limited to):
 - The provision of additional pedestrian footpath and cycle routes;
 - Accessibility improvements to bus stops from existing developments;
 - Real time travel information at bus stops;
 - Practical walking routes from developments to public transport, schools, work places and local amenities with proper footpaths, street lighting and safe crossing points.
- Steps to actively encourage the integration of walking and cycling routes and facilities into key destinations within the Parish
- Provision of safe routes for equestrians.

2.20. Policy 5 of the Neighbourhood Plan relates to parking. The Parish Council have stated that developments should look to deliver a parking provision of one parking space per bedroom either on-site or on-street depending on the parking capacity available in the area, unless otherwise justified. Clearly the parking levels provided, whilst being sympathetic to the aspirations of the Neighbourhood Plan, will also have to take account of Wokingham Borough Council's adopted parking standards, as set out in their Managing Development delivery DPD which was adopted in February 2014.

Summary

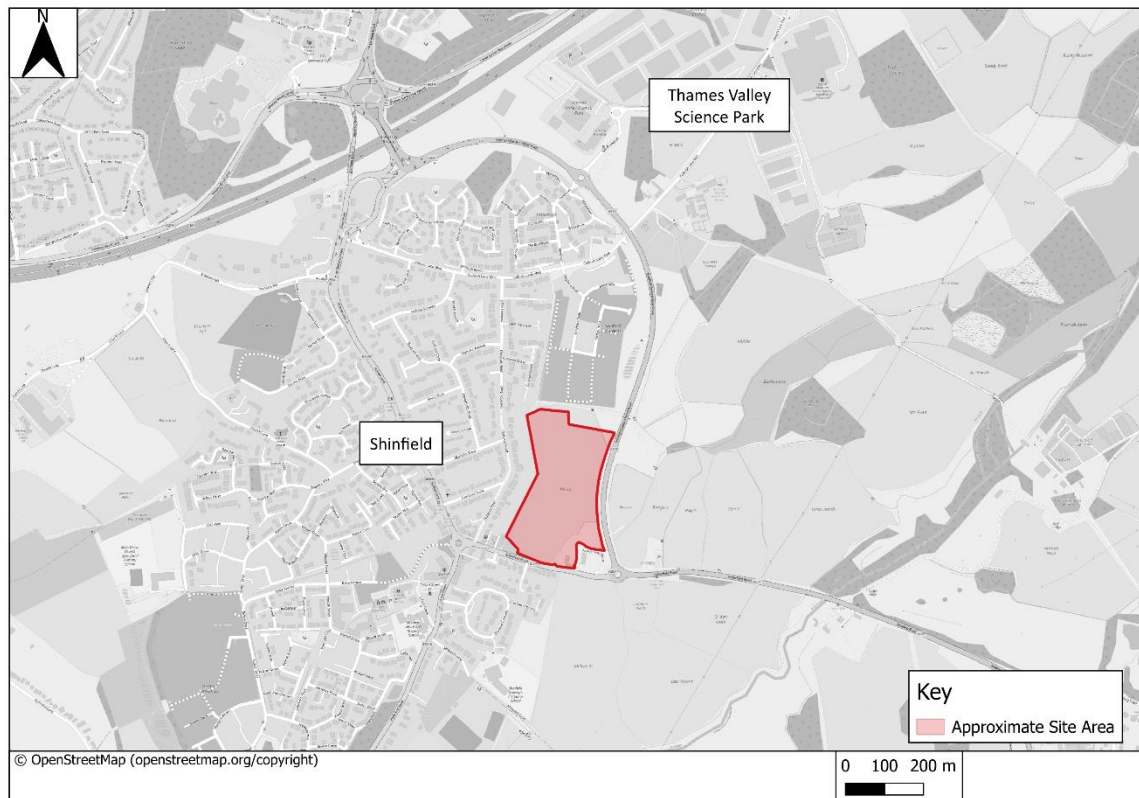
- 2.21. The overarching principle of national and local transport policy is for new development to be located where it is accessible by a range of transport including walking, cycling and public transport. Safe access and appropriate parking should be provided. Fundamentally, development should only be prevented from coming forward for transport reasons if the residual impact would be severe.
- 2.22. The following sections of the Transport Assessment describe how the development proposal complies with these national and local policy considerations.

3.0 Existing Transport Conditions

Context

- 3.1. The location of the proposed development in the context of the neighbouring area is depicted at **Figure 3.1** below.

Figure 3.1: Site Location



- 3.2. The proposed site is currently undeveloped land used for agricultural purposes. The site is bound by the earlier phase of residential development at the Long Acre estate to the north, the Shinfield Eastern Relief Road to the east, the A327 Arborfield Road to the south and existing residential dwellings on Oatlands Road to the west.
- 3.3. This Section of the Transport Assessment Report examines the existing transport provision in the vicinity of the site with all modes of travel considered.

Local Highway Network

Arborfield Road and Hollow Lane

- 3.4. The main vehicular access to the proposed development will be provided from a new priority junction to the south onto Arborfield Road. The A327 Arborfield Road routes along the southern frontage of the site and is a lit single carriageway road with a 40mph speed limit and a footway along its southern side. Approximately 200m east of the proposed site access, it forms a roundabout with the Shinfield Eastern Relief Road and 200m west of the access point there is a 4-arm roundabout with Hollow Lane/Beke Avenue and Hyde End Road.
- 3.5. Hollow Lane is a lit single carriageway road with a 40mph speed limit which changes to 30mph as it routes northwards through Shinfield village, whilst the B3349 Hyde End Road provides access to Basingstoke Road at Spencers Wood, c2.8km further to the west.
- 3.6. The Brookers Hill / Church Lane corridor connects with Hollow Lane to form a signal junction c700m north of the Hollow Lane/Beke Avenue/Hyde End Lane roundabout. The Brookers Hill / Church Lane corridor then leads to Three Mile Cross a further c2km to the west.
- 3.7. Alternatively, travelling east of the Arborfield Road / Shinfield Eastern Relief Road roundabout along the A327 corridor serves a number of settlements en-route to Wokingham, c9km east of the site.

Cutbush Lane & Eastern Relief Road

- 3.8. It is also proposed to provide a northern connection onto the spine road which routes through the Littlebrook and Long Acre residential estates which lie to the north of the site. The spine road routes through the Long Acre estate as Shepherd Road before crossing Cutbush Lane in the form of a crossroads priority junction. It then continues northwards through the Littlebrook Estate as Hawthorn before connecting onto the Shinfield Eastern Relief Road / Thanes Valley Science Park roundabout.
- 3.9. Cutbush Lane is a 30mph single carriageway road which connects with the A327 Hollow Lane c550m to the west in the form of a signal junction.
- 3.10. The Shinfield Eastern Relief Road comprises a 7.3m wide carriageway routing from Arborfield Road at its southern extent, around the eastern side of the proposed development site, before meeting with the A327 Hollow Lane corridor just to the south of the M4 motorway.
- 3.11. The Shinfield Eastern Relief Road also links to the Black Boy gyratory via the University Bridge over the M4 motorway. A separate bridge is also available for northbound buses, cyclists and pedestrians. The A327 corridor continues to the north of the Black Boy gyratory into Reading, located c6km north.
- 3.12. The B3270 Lower Earley Way is a single carriageway route running adjacent to the M4 motorway, routing east/west from the Black Boy gyratory. The route provides access to the A33 and M4 Junction 11 c1.7km to the west of the Black Boy gyratory and access to the A329 and A329(M) at Loddon Bridge, c5km to the east. The A329(M) then provides a direct connection to the M4 Junction 10 a further 4km to the east.



- 3.13. The southern section of the Shinfield Eastern Relief Road is subject to a 50mph speed limit. This reduces to 40mph along the northern section which runs between the Thames Valley Science Park roundabout and the M4 overbridge. Traffic along the remaining northern sections of the road, including at the interfaces with the Black Boy gyratory and Hollow Lane are subject to a 30mph speed limit. Street lighting is provided along the northern sections of the Eastern Relief Road, including between the M4 overbridge and the Science Park access roundabout.

Travel by Foot and Cycle

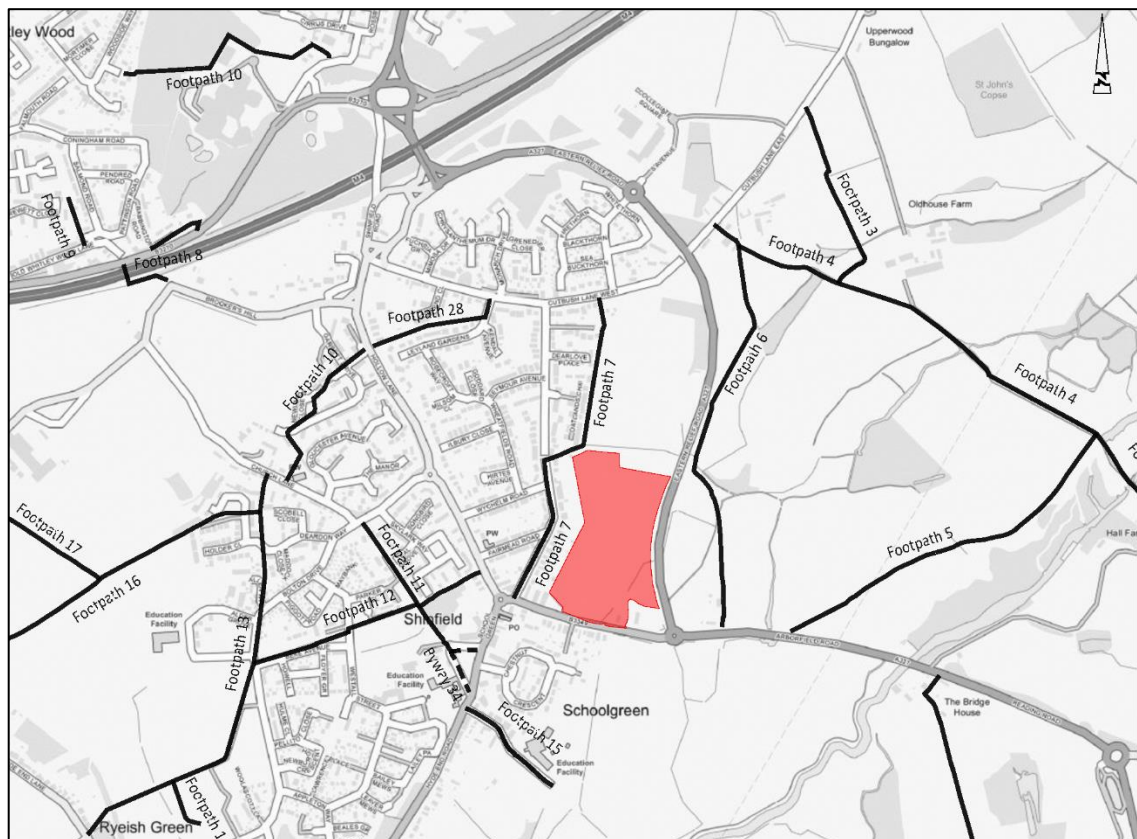
- 3.14. The proposed site has a good level of pedestrian and cycle connectivity due to the significant investment in new infrastructure that has been implemented in the area over recent years. A Wokingham Borough Council plan depicting the cycle route network in the area is attached at **Appendix B**.
- 3.15. Arborfield Road at the southern frontage of the proposed site includes a footway along its southern side which connects with the footway provision along Hollow Lane and Hyde End Road at the centre of Shinfield, approximately 200m west of the site. Beke Avenue include a 3m footway/cycleway along its northern side routing through the Local Centre of the Shinfield West Development which is currently being constructed.
- 3.16. The spine road of the existing residential parcel to the north includes a 2m footway at either side connecting to Cutbush Lane, which itself has a footway on the northern side of the road linking to the Hollow Lane corridor. A 3m cycleway also routes along the eastern frontage of the existing residential parcel north of the proposed site. The spine road between Cutbush Lane and the Shinfield Eastern Relief Road then includes a 2m footway at one side and a 3m footway/cycleway at the other.
- 3.17. To the east of Cutbush Lane, an island crossing is located on the Shinfield Eastern Relief Road, allowing pedestrians and cyclists to cross onto the lightly trafficked eastern section of Cutbush Lane which then links with the existing M4 overbridge (for non-motor vehicles only) c1km to the north-east. This forms a convenient pedestrian and cyclist route to Lower Earley.
- 3.18. A 3m footway / cycleway runs along the northern side of the Shinfield Eastern Relief Road, to the north of Cutbush Lane, providing a continuous connection running from the Thames Valley Science Park, over the M4 overbridge, linking into the facilities at the Black Boy gyratory.
- 3.19. A 3m wide cycleway is also provided along the southern side of the Shinfield Eastern Relief Road as it runs to the west between the M4 bridge and the Hollow Lane corridor. Importantly, signal controlled crossing facilities are provided at the Shinfield Eastern Relief Road's junctions with the M4 overbridge and also at the interface with the Hollow Lane corridor.
- 3.20. The University Bridge over the M4 overbridge has enabled the redundant Black Boy bridge to be utilised as an additional pedestrian / cycle / bus only bridge across the motorway.
- 3.21. The Black Boy gyratory also includes significant provision for pedestrians and cyclists which link to the footways and cycle routes that run along the B3270 corridor to the east and along the A327 corridor into Reading.

- 3.22. To the west of the site, a high standard of pedestrian and cyclist provision has been incorporated into the staggered signal junction of Cutbush Lane with Hollow Lane and Brookers Hill. A 3m cycleway then runs along the western side of the corridor to Church Lane and into the Shinfield West residential development.
- 3.23. Other notable cycle routes in the area include the shared use facility that runs along Brookers Hill, connecting Shinfield with Three Mile Cross. The cycle route along Brookers Hill also provides a connection to the footbridge over the B3270 corridor which then links into the footway provision along Whitley Wood Lane.

Public Right of Ways

- 3.24. In addition to the formal footway and cycleway routes in the area, there is also a network of recreational Public Rights of Way running in the vicinity, as identified at **Figure 3.2** below.

Figure 3.2 : Existing Public Rights of Way



- 3.25. Of note is that Public Footpath 'SHIN FP7' routes along the western flank of the Long Acre Estate to the north and then along Oatlands Road to the west of the site, providing a connection between Cutbush Lane and Arborfield Road. Public Footpath 'SHIN FP6' routes in a similar manner, albeit on land to the east of the Shinfield Eastern Relief Road. These formal public rights of way are connected by a permissive path that routes east-west on land immediately to the north of the proposed development.
- 3.26. There are also other permissive paths in the area, most notably the network of routes within the Langley Mead SANG which lies immediately to the south of the site on land south of Arborfield Road.



Pedestrian and Cycle Accessibility

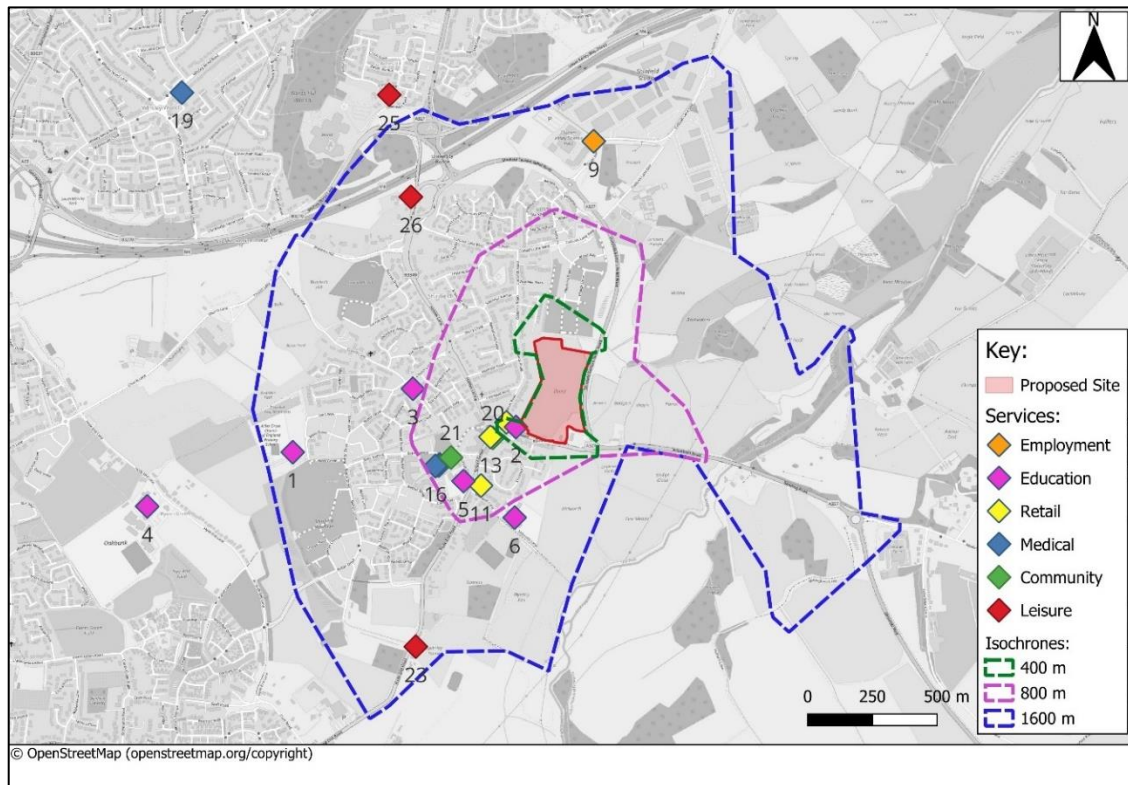
- 3.27. Walking can play an important role both in delivering accessibility at the local level and in contributing towards sustainable development patterns in the longer term. Walking is considered to be the most important mode of travel at a local level and offers the greatest potential to replace short car trips. Cycling can also contribute to transport sustainability and accessibility and is a good substitute for short car trips.
- 3.28. Government guidance on accessibility planning advises that residential development should be accessible to a range of land uses including education, employment, health and retail facilities. The provision of residential development in close proximity to such land uses helps to maximise the number of shorter distance trips and therefore capitalises on the potential for these journeys to be undertaken by non-car modes of travel.
- 3.29. It is clear that having services and facilities in close proximity is one of the primary factors in encouraging sustainable travel. In this regard it is notable that the National Travel Survey (2022) records that for the vast majority (83%) journeys of up to 1 mile (1,600m) are undertaken on foot by the general public and that even for journeys between 1 mile to 2 miles a significant proportion (40%) are still undertaken on foot. Similarly, cycling is used for accessing a variety of different destinations further afield, including educational facilities, shops and places of work.
- 3.30. On this basis, for the purposes of this Report, journeys of up to 2 miles and 5 miles are considered to represent acceptable walk and cycle distances for travel to nearby services and facilities.
- 3.31. Table 3.1 below summarises these local facilities and land uses, with actual walk distances measures along local footways from the centre of the development site. The Table also includes some key facilities that lie further afield, albeit it is not intended to represent an exhaustive list.

Table 3.1: Proximity of Key Facilities and Services

Service Type	Map ID	Facility	Approximate Distance	Within Reasonable Walking Distance	Within Reasonable Cycling Distance
Education	1	Alder Grove Primary School	1,400m		✓
	2	Happy Trails Play Nursery	400m	✓	✓
	3	Honeysuckle Day Nursery	950m	✓	✓
	-	Oakbank Secondary School	2,200m		✓
	5	Shinfield Infant and Nursery School	700m	✓	✓
	6	Shinfield St Marys C of E Junior School	900m	✓	✓
Employment	-	Green Park Business Park	4,800m		✓
	9	Thames Valley Science Park	1,150m	✓	✓
	-	Reading Town Centre	6,650m		
Retail	-	Asda Lower Early	2,530m		✓
	11	Co-Operative, Shinfield	780m	✓	✓
	-	M & S Lower Early	2,430m		✓
	13	Premier Express, Shinfield	490m	✓	✓
	-	Reading Town Centre	6,650m		
	15	Shinfield Service Station	430m	✓	✓
	-				
Health	18	Shinfield Dental Care	800m	✓	✓
	18	Shinfield Medical Centre	800m	✓	✓
	18	Shinfield Pharmacy	800m	✓	✓
	-	South Reading Surgery	3,000m		✓
	-	Royal Berkshire Hospital	5,500m		
Community	20	Shinfield Road Post Office	490m	✓	✓
	21	School Green Community Centre	700m	✓	✓
	-	Spencers Wood Library	3,650m		✓
Leisure	-	Langley Mead SANG	1,100m	✓	✓
	-	Loddon Valley Leisure Centre	1,650m	✓	✓
	-	Shinfield Players Theatre	1,800m	✓	✓
	26	The Shinfield Arms	1,200m	✓	✓

3.32. For ease for reference, the nearby facilities listed above are depicted on **Figure 3.3** below. For added context, actual walk and cycle isochrones are shown for journeys up to 1 mile (1.6km). However, for the reasons set out above, this is by no means intended to represent the outer limit of reasonable walk and cycle journeys arising from the proposed development.

Figure 3.3: Neighbouring Services and Facilities

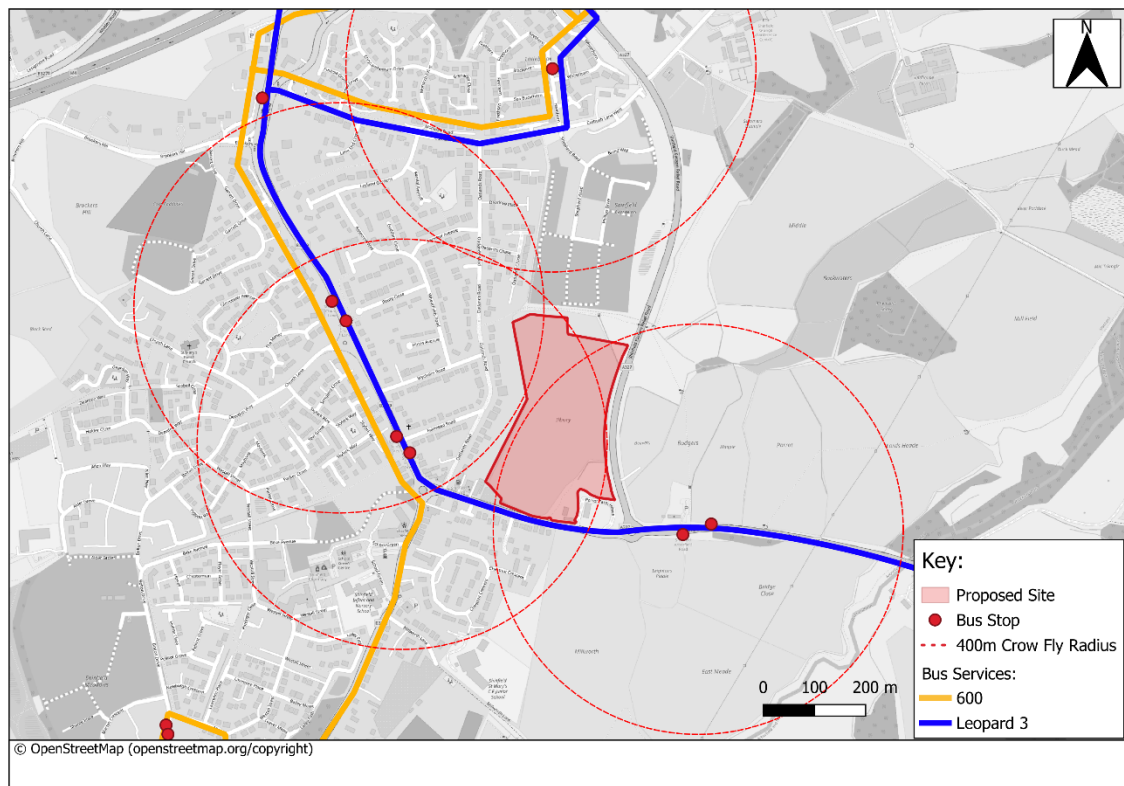


- 3.33. In addition to the range of local services and facilities located near the site and towards Reading town centre, the neighbouring consented development proposals include a variety of new services, such as the local centre at Shinfield West which will have facilities including a food store and other retail provision. There is also a network of SANG areas across the South of M4 SDL which provides access for residents to local recreation and outdoor space. These areas will be highly accessible to the future residents of the proposed Arborfield Road development, particularly given that the entrance to the Langley Mead SANG lies immediately to the south of the site.
- 3.34. The location of the proposed development is therefore consistent with national and local policy aspirations given that there are nearby services and facilities (both existing and committed) which are accessible within reasonable walking and cycling distances. There is scope therefore for journeys made in relation to the proposed development to be undertaken by non-car modes.

Travel by Bus

- 3.35. There are a number of frequent bus services operating in the vicinity of the site. The routings are depicted on **Figure 3.4** below which, for context, also shows 400m crow fly distances from the neighbouring bus stops. Of note however is that all areas of the site lie within an actual walk distance of 600m from a bus stop.

Figure 3.4: Existing Bus Stops



3.36. Bus services currently operate at bus stops along the A327 Hollow Lane corridor to the west of the site and along Arborfield Road to the south-east. There is also a bus stop along Hawthorn within the Littlebrook estate immediately to the north. Further details of the provision at the four closest pairs of bus stops set out below:

- Hollow Lane - Church Lane northbound/southbound each include a shelter and timetable information.
- Hollow Lane - School Green northbound stop includes a shelter and timetable information whilst the southbound stop includes a layby and timetable information.
- A327 Arborfield Road westbound/eastbound each include a layby and timetable information.
- Hawthorn – Timetable information

3.37. Table 3.2 below provides a summary of the services offered along the bus routes presently operating in the area.

Table 3.2 : Local Bus Services

No.	Bus Stop Locations	Route	Approximate Frequency Guide		
			Weekday	Sat	Sun
3	Hollow Lane, Arborfield Road	Central Reading – Royal Berkshire Hospital – Shinfield - Arborfield	30 mins	30 mins	30 mins
	Hollow Lane, Arborfield Road, Hawthorn	Central Reading – Royal Berkshire Hospital – Shinfield – Arborfield - Wokingham	60 mins	60 mins	-
600	Hollow Lane, Hawthorn	Reading – Mereok Park and Ride– Spencers Wood	60 mins	60 mins	-

Source: Reading Buses (June 2024)

- 3.38. As can be seen, there are a number of services operating in the locality which serve a range of destinations in the area. The Route 3 and 600 services operated by Reading Buses provide frequent services along the A327 Hollow Lane corridor through Shinfield between Reading town centre and Wokingham, resulting in 4 buses per hour routing along the corridor to Reading. Full bus service details are provided at **Appendix C**.

Travel by Rail

- 3.39. The nearest rail station to the site is at Earley which is located approximately 5.8km cycle distance to the north-east. Covered and secure cycle parking is available at the station. Earley rail station provides regular and frequent services between Reading and London Waterloo operated by South West Trains. The journey time to Reading Railway Station is c5 minutes.
- 3.40. Whilst the closest Rail Station is at Earley, it is of note that Reading rail station lies approximately 7.5km cycle distance to the north and is connected by the Thames Valley Science Park bus services described above. Reading rail station is the second busiest railway interchange in England outside London and caters for approximately 15 million passengers per year. It forms a national hub with rail services operated by Virgin Cross Country, South West Trains and First Great Western providing connections to all UK mainland destinations - including direct links to Gatwick and Heathrow International Airports. Essentially, Reading Railway Station performs three diverse roles for travellers within the Reading urban area comprising:
- Locally - connecting Reading with other adjoining local areas in the Thames Valley;
 - Regionally – forming a central Transport Hub for both the sub-region and South-east region as a whole where either connections to or interchange for services to all destinations in the south-east are possible; and
 - Nationally – forming a national hub at the cross-roads of the Great Western mainline and Cross Country networks providing connections between the sub-region and all other English regions as well as Wales and Scotland.

- 3.41. Frequent rail services operate between Reading and destinations across the UK including Wokingham and London Paddington. Table 3.3 below shows a variety of the destinations, journey time and frequency of services of rail services operating from Reading rail station.

Table 3.3: Reading Station Train Services

Destination	Journey Time	Approximate Frequency Guide			
		Peak	Off Peak	Evening	Weekend
Wokingham	9 to 15 mins	15 mins	15 mins	15 mins	15 mins
London Paddington	30 mins	8 mins	8 mins	8 mins	8 mins
Basingstoke	17 to 27 mins	20 mins	20 mins	20 mins	20 mins
Birmingham	90 mins	60 mins	60 mins	60 mins	60 mins
Bristol	49 to 70 mins	15 mins	15 mins	15 mins	20 mins
Southampton	50 mins	60 mins	60 mins	60 mins	60 mins

Source: Reading Buses (June 2024)

- 3.42. Green Park Railway station, which opened in 2023, is located c5km west of the development site and facilitates access to services along the Basingstoke to Reading line.

Accident Analysis

- 3.43. In order to establish whether there are any particular road safety issues on the local network, the most recent 5-years of Personal Injury Accident information for the highway network in the vicinity of the site has been obtained from Wokingham Borough Council. The data covers the period of December 2018 to November 2023 and the following study area has been assessed as established during the scoping exercise:

- Cutbush Lane
- Shinfield Eastern Relief Road (ERR)
- A327 Hollow Lane through Shinfield between Black Boy Gyratory and Arborfield Road
- Brookers Hill west of the A327 Hollow Lane (to Church Lane)
- Arborfield Road east of the A327 Hollow Lane Roundabout (to the ERR)
- Hyde End Road to the south of the A327 Hollow Lane Roundabout (to Appleton Way)
- Oatlands Road
- Deardon Way and Church Lane to the west of the A327 Hollow Lane

- 3.44. The accidents have been examined to determine if any patterns emerge at particular locations, relating to elements such as the type of user involved and the causes of such accidents. The accident data is summarised in Table 3.4 below while the full output is presented at **Appendix D**.

Table 3.4 : Accident Summary

Location	Severity				Road Users			
	Slight	Serious	Fatal	Total	Vehicle Only	Cycle	Pedestrian	Total
Cutbush Lane	-	-	-	-	-	-	-	-
Shinfield Eastern Relief Road	4	1	0	5	5	0	0	5
A327 Hollow Lane through Shinfield	4	2	0	6	5	1	0	6
Brookers Hill	-	-	-	-	-	-	-	-
Arborfield Road	-	-	-	-	-	-	-	-
Hyde End Road	-	-	-	-	-	-	-	-
Oatlands Road	-	-	-	-	-	-	-	-
Deardon Way/ Church Lane	1	0	0	1	1	0	0	1
Total	7	5	0	12	11	1	0	12

- 3.45. A total of 12 accidents occurred in the study area over the five-year period. None of the accidents resulted in fatalities, although three of the accidents did result in at least one serious injury. The remaining seven of the accidents were recorded as resulting in slight injuries.
- 3.46. None of the accidents involved pedestrians, one involved a cyclist and the remaining 11 accidents were vehicle-only incidents.
- 3.47. Of note is that no accidents were recorded at the site frontage along Arborfield Road which is where the proposed access junction is to be formed.
- 3.48. An appraisal of the accidents which occurred within the study area is set out below.

Shinfield Eastern Relief Road

- 3.49. Two accidents occurred at the signal junction at the northern extent of the corridor. The first involved a right turning car colliding with a motorcycle resulting in a slight injury with a variety of possible causes listed. The other accident involved a car suddenly breaking due to a malfunction then a light goods vehicle hit the rear of the car resulting in 3 slight injuries.
- 3.50. Two accidents occurred to the north of the Thames Valley Science Park roundabout. A northbound car changed lanes after failing to look properly and collided with another car resulting in a slight injury, whilst a second accident involved a southbound driver losing control on the bend resulting in a serious injury. Careless or reckless driving were listed as possible causes of the single accident which results in serious injury.



- 3.51. The final slight accident involved a southbound car to the south of the Thames Valley Science Park access roundabout overtaking a motorcycle then losing control as a result of a poor manoeuvre.

A327 Hollow Lane through Shinfield

- 3.52. Three accidents occurred in the vicinity of the Hollow Lane / Arborfield Road/ Hyde End Road roundabout. A serious injury occurred when a car entered the roundabout and collided with a motorcycle after failing to look properly. In another incident a car reversing from a parking space collided with a car waiting to turn causing a slight injury, whilst the final accident involved a southbound car at Hollow Lane shunting a car waiting at temporary lights.
- 3.53. Two accidents occurred at the Hollow Lane/Brookers Hill signal junction. One, which resulted in slight injuries, occurred when a right turning car hit another after disobeying the traffic signal. The other accident happened when a fatigued southbound driver crossed the carriageway and collided with another car, resulting in a serious injury.
- 3.54. The last accident was at the northern extent of Hollow Lane near the Foot/Cycle/Bus bridge over the M4 motorway when a cyclist hit a car as a result of defective breaks which resulted in a slight injury.

Deardon Way/ Church Lane

- 3.55. The slight accident at Church Lane/Skylark Way involved a right turning car hitting another after failing to look properly.

Summary

- 3.56. Whilst all accidents are regrettable, based on the above analysis it is not considered that there are any specific issues with highway safety in the area that would be significantly exacerbated by the additional traffic that would be attributable to the development proposals.

Baseline Traffic Flows

- 3.57. An Automatic Traffic Counter (ATC) was placed on Arborfield Road, in the vicinity of the proposed site access, to record the existing flows and speeds of traffic at the site frontage over a 7-day period between Tuesday 11th June and Monday 17th June 2024 inclusive. A summary of the ATC results are presented in **Appendix E**.
- 3.58. The results of the ATC indicate that Arborfield Road typically accommodates approximately 830 two-way movements during the busiest hour. The predominant direction of travel exhibits a slight bias away from Shinfield during the morning peak with a reversal during the evening peak hour.
- 3.59. The ATC surveys also recorded a 7-day average 85th percentile speeds of 38.7mph (eastbound) and 38.4mph (westbound), indicating that vehicles predominately adhere to the posted 40mph speed limit.

4.0 Development Proposals

Context

- 4.1. This Section of the Transport Assessment Report outlines the transport measures that will accompany the proposed development which have been derived to facilitate movement by all modes of travel in a satisfactory manner.
- 4.2. A copy of the proposed Layout is attached as **Appendix A** of this report. Further details which set out how the Layout has been developed to reflect a number of considerations, including access and movement, are set out in the Design and Access Statement which accompanies the planning submission.
- 4.3. Primary vehicular access is proposed to be provided via a new priority junction to the south onto Arborfield Road. It is also proposed to connect to the existing spine road which routes through the Littlebrook and Long Acre residential estates which lie to the north of the site, thereby providing a second point of access which will deliver a through route between Arborfield Road and the Eastern Relief Road / Thames Valley Science Park roundabout.
- 4.4. Pedestrian and cycle access into the development will be delivered through connections onto the Arborfield Road frontage as well as a southerly continuation of the facilities being promoted along both sides of the spine road which routes through the Long Acre estate immediately to the north.

Travel by Foot and Cycle

- 4.5. Careful consideration has been within the proposed Layout with regard to the integration of the proposed development with the surrounding facilities and infrastructure in order to deliver a high level of connectivity for movements to and from the site.
- 4.6. A number of design measures to cater for pedestrian and cycle movements within the development have been employed, including:
 - A street pattern that generates natural surveillance where entrances and frontages face all public routes.
 - An internal layout that encourages low vehicle speeds and therefore creates an environment where pedestrians and cyclists are not intimidated by motor traffic.
 - A permeable hierarchy of direct routes within the development comprising a range of shared, segregated and recreational links which would connect all internal areas of the development to the points of access.
- 4.7. A dropped kerb and tactile paving crossing is proposed across the access arm of the junction onto Arborfield as well as a new pedestrian island crossing of Arborfield Road which afford direct to Langley Mead SANG which lies immediately to the south. The proposed access arrangement also accommodates a 3m footway / cycleway routing westwards along Cutbush Lane connecting to the Shinfield Eastern Relief Road roundabout approximately 100m to the east of the proposed access junction.
- 4.8. Further to the site access arrangements, the following footway and cycleway provision has been incorporated into the proposed Layout:



- 2.0m footways provided on both sides of the carriageway along the primary street network within the development.
 - 2.0m footways along the secondary streets.
 - 3m wide off carriageway footway / cycleway which routes along the eastern frontage of the site.
- 4.9. Within areas such as private drives, shared streets will be promoted allowing pedestrians and drivers to share the carriageway where lower volumes and speeds of vehicles permit this.
- 4.10. Residents at the proposed development would therefore enjoy attractive and continuous routes within the development providing connection between Arborfield Road, Cutbush Lane and Oatlands Road.

Travel by Public Transport

- 4.11. As has been established in Section 3 of this report, the Leopard 3 service operates along the southern frontage of the site offering a 20 minute frequency service between Reading and Arborfield and an hourly service to Wokingham. In addition, the 900 service operates at an hourly frequency through the Littlebrook estate to the north. All areas of the development are within a 600m actual walk distance from the nearby bus stops. These services will therefore offer future residents a good level of accessibility for bus journeys.
- 4.12. Notwithstanding, care has been taken during the design of the main spine road through the Layout to ensure that the carriageway is of a sufficient width to accommodate two-way buses routing through the site. This is demonstrated on the swept path analysis which is presented within **Appendix F**. The Layout therefore safeguards the ability for buses to travel through the development between Arborfield Road and the Shinfield Eastern Relief Road / Thames Valley Science Park roundabout should there be a desire to adopt such a routing in the future.

Travel by Car

- 4.13. Whilst the development proposals seek to maximise connectivity for non-car modes of travel, it is also important that a satisfactory level of highway provision is allowed for within the internal layout of the development which, in turn, affords a satisfactory access arrangement onto the surrounding highway network.
- 4.14. Vehicular access at the southern frontage of the site will be formed by way of a priority junction with a ghost island right turn lane onto Arborfield Road. The proposed access arrangement is depicted on Drawing No. HD008-006/P1, attached as **Appendix G**. The design of the access junction accommodates visibility spays of 2.4 x 120m, commensurate with the speed limit of 40mph.
- 4.15. Swept path analysis has been undertaken to demonstrate that large vehicles including a refuse vehicle and buses can manoeuvre at the proposed site accesses in a safe and satisfactory manner. The results of the swept path analysis are shown on the Drawings included within **Appendix H**.
- 4.16. At the northern end of the site, it is proposed to connect into the Shepherd Road corridor which runs through the Long Acre estate. This will then create a new vehicular route between Arborfield Road and the Thames Valley Science Park access roundabout.



- 4.17. Mindful that the earlier phases of development to the north, it is proposed that the highway hierarchy and carriageway dimensions align with those being provided within the recently constructed Long Acre estate.
- 4.18. The primary street routes north to south through the development and provides access to a number of secondary streets which have carriageways of 4.8m in width. The remaining tertiary streets, private drives and parking courtyards within the development will generally comprise shared surface streets. The use of shared surface streets recognises that the volume and speeds of traffic in these areas will be low. The approach taken will therefore deliver well designed safe streets that contribute to the quality of the built environment.

Servicing

- 4.19. The swept path analysis presented on the drawings at **Appendix F** demonstrate that a fire tender is able to manoeuvre within 45m of every property in a satisfactory manner. Similarly, the design of the internal street network has been assessed to identify that a large refuse vehicle can be accommodated with sufficient allowance for turning manoeuvres.
- 4.20. Of note is that Bin Collection Points provided to prevent excessive carry distances for either residents or waste vehicle operatives.

Parking Guidance

- 4.21. Wokingham Borough Council's Parking Standards are presented within Appendix 2 of its Managing Development Delivery DPD which was adopted in February 2014.
- 4.22. The standards no longer identify maximum numbers of parking spaces to be provided within residential developments. This approach is in line with national guidance presented in the National Planning Policy Framework (March 2012) and Planning Practice Guidance (October 2014) which recognise that the level of parking provided should be based on a number of local factors including car ownership, dwelling type and size as well as being mindful of local constraints such as the availability of on-street parking facilities in the locality.
- 4.23. The Wokingham Borough Council Parking Standards advocate the use of a 'Demand Calculator' which helps to establish the level of parking demand at a development. With regards to residential parking, the 'Demand Calculator' appraises the level of on-plot parking in order to establish the level of ancillary, unallocated parking that should be provided within a development. The 'Demand Calculator' also makes an allowance for instances when not all garages provided within a development will be fully utilised for car parking.
- 4.24. It is however important to note that the Wokingham Borough Council Parking Standards acknowledge that the standards and the 'Demand Calculator' should be regarded as only a starting point and that the overall level of parking provided will need to be assessed on its own merits within the wider context of the area within which the development sits.

Vehicular Parking Strategy

- 4.25. When determining the precise level and type of parking throughout the wider development, consideration has been given to the housing types proposed. A design led approach has been adopted which seeks to provide parking that is well integrated and compliments, rather than dominates, the street scene.
- 4.26. The objective is to provide an adequate level of parking and, importantly, to ensure that the spaces that are designed for parking are used for parking, and that places where parking will cause problems are not going to be used for that purpose. This approach will help to prevent the problems such as cars parked indiscriminately which obstruct pavements and restrict access along a street.
- 4.27. Most car owners like to be able to see their vehicles and / or to know that they are securely parked. On plot parking satisfies this strong desire. Acceptance of this means that the significant majority of the parking at the proposed development is designed to be provided within the curtilage of dwellings through the use of on-plot spaces.
- 4.28. The proposed Layout allows for unallocated parking, predominantly through the use of on-street parking bays. In this respect, care has been taken to ensure that the on-street parking areas are designed so that they do not impinge on the operation of the street or footways.

Allocated Parking

- 4.29. The proposed layout provides for some 304 allocated spaces and a further 43 spaces within garages.
- 4.30. Table 4.1 below provides a summary of the level of allocated parking provision for each of the dwelling sizes while a plot-by-plot appraisal of the allocated parking is presented in **Appendix I** of this report. For the avoidance of doubt, Table 4.1 identifies all garages as contributing to an 'allocated space.'

Table 4.1: Summary of Allocated Parking Provision

Dwelling Size	No of Dwellings	0 Spaces	1 Space	2 Spaces	3 Spaces
1 Bed Flat	17	17	-	-	-
2 Bed Flat	11	11	-	-	-
2 Bed House	18	-	6	12	-
3 Bed House	98	-	14	84	-
4 Bed House	47	-	-	6	41
Total	191	28	20	102	41

- 4.31. As can be seen, all of the houses within the development have at least one allocated parking space and the majority of houses with 2 or more bedrooms have at least 2 spaces. Parking for the apartments is provided in the form of unallocated spaces within the separate parking courtyards that serve each of the apartment blocks.

- 4.32. It is noted that based on Wokingham Borough Council's research, garages are only used around 50% of the time for parking. The provision has therefore been re-presented in Table 4.2 below, but this time excluding all garages from the calculation, to provide reassurance that if the resident chooses to not use their garage for parking, they still have access to sufficient numbers of allocated parking spaces.

Table 4.2: Summary of Allocated Parking Provision (Excluding Garages)

Dwelling Size	No of Dwellings	0 Spaces	1 Space	2 Spaces	3 Spaces
1 Bed Flat	17	17	-	-	-
2 Bed Flat	11	11	-	-	-
2 Bed House	18	-	6	12	-
3 Bed House	98	-	14	84	-
4 Bed House	47	-	2	45	-
Total	191	28	22	141	-

- 4.33. As Table 4.2 identifies, even when excluding garages, all houses still have benefit of an allocated space which is not a garage. Furthermore, the significant majority of 3-bed houses and nearly all of the 4-bed houses are provided with 2 allocated spaces which are not garages.

Visitor Parking

- 4.34. In order to cater for the demands of visitors, a blanket requirement of 1 visitor space for every 5 dwellings is required. This equates to a total visitor provision of 38.2 visitor spaces across the proposed development.

Unallocated Parking

- 4.35. The Wokingham Borough Council Parking 'Demand Calculator' appraises the level of on-plot parking in order to establish the level of ancillary, unallocated parking that should be provided within a development.
- 4.36. It is important to reiterate that the Wokingham Borough Council Parking Standards acknowledge that the standards and the 'Demand Calculator' should be regarded as only a starting point and that the overall level of parking provided will need to be assessed on its own merits. Nevertheless, the 'Demand Calculator' does provide a useful indication against which the level of provision within the layout can be assessed.
- 4.37. The identification of the demand for unallocated spaces on a plot-by-plot basis is based on the coefficients set out in the parking standards.
- 4.38. The single garages within the layout, which in almost all cases are provided as the 3rd parking space for each dwelling, have generally been sized as 6.5m x 3.4m in accordance with the minimum dimensions of 3m x 6m required within the Wokingham Borough Council parking standards. However, the 2no. plots provided with 1 garage and 1 allocated space have a larger 3.1m x 7.3m garage dimension.



- 4.39. The Wokingham Borough Council Parking Calculator does not require unallocated demand to be provided at properties with more than 2 spaces (other than the blanket 0.2 visitor spaces per unit). Therefore, in the instances where the inclusion of the additional garage provides such plots with a total of three parking spaces, the unallocated demand has been excluded for such properties when ascertaining the total unallocated parking requirement for the development.
- 4.40. As can be seen from the parking appraisal at **Appendix I**, this yields a total requirement for 36 communal unallocated parking spaces on top of the 38.2 visitor spaces required, thereby equating to a requirement for at least 74 such spaces across the development. The Layout responds positively to this requirement by delivering a total of 78 unallocated / visitor spaces, thereby according with the parking requirement. The location of each parking space and garage is identified on the layout provided at **Appendix A**.
- 4.41. Of note is that if all 43 garages were ignored within the appraisal then the unallocated demand calculation would yield an alternative demand of 42.4 spaces. When combined with the 38.2 visitor spaces this would result in an overall demand for 81 visitor / unallocated spaces. The 78 spaces being provided remains broadly in accordance with the standards, even in the unrealistic scenario where the benefit of all garages is excluded entirely.

Summary of Vehicular Parking

- 4.42. For ease of reference, the parking provision throughout the development, expressed as ratios per dwelling, is summarised in Table 4.3 below.

Table 4.3: Vehicular Parking Summary

Unit Mix	No of Spaces	Ratio per Dwelling
Visitor / Unallocated	78	0.41
Allocated	304	1.59
Garages	43	0.23
Total Allocated + Garages + Visitor / Unallocated	425	2.23

- 4.43. As can be seen, the resultant parking provision at the development equates to an average of 2.23 spaces per dwelling.

Cycle Parking

- 4.44. Wokingham standards identify a requirement based on habitable rooms provided which typically results in a provision of 1,2 or 3 spaces per 1/2/3+ bed house.
- 4.45. Cycle parking will generally be accommodated within the curtilage of each individual house, including within garages where these are provided as detailed below.
- A total of 41no. 4-bed dwellings are provided with a 6.5 x 3.4m garage to accommodate 3 cycles. Note that each of these units has 2no. allocated car parking spaces in addition to the garage.



- A further 2no. 4-bed dwellings are provided with a larger 7.3 x 3.1m garage to accommodate 3 cycles and a car. Note that each of these units has 1no. allocated car parking space in addition to the garage.
- 4.46. For the remaining 119 units where garages are not provided, each house will be provided with a storage shed in their back gardens suitable for the storage of typically 2no. bikes, with rear accessing gates meaning that residents will not need to bring their bicycles through the house.
- 4.47. Based on the habitable rooms for each flat type proposed, Wokingham's standards set a provision of 1 cycle space per flat for the 28no. flats. These are provided within secure stores for each of the blocks of flats within the development with further details shown on the ground floor plans for each apartment type.

Travel Plan

- 4.48. As part of the scoping discussions it has been agreed that, instead of preparing a new Travel Plan for the development, a S106 financial contribution will be provided instead given that matters relating to Travel Planning are now addressed through WBC's 'My Journey Wokingham' initiative.

5.0 Travel Demand

Introduction

- 5.1. This Section of the Transport Assessment Report outlines the forecast trip generation of the proposed development in respect of vehicular trips. Trips in relation to other modes of travel are set out in Section 8.
- 5.2. The appraisal focuses on the weekday morning and evening peak hours which represent the busiest periods along the local highway network.

Vehicular Trip Rates and Trip Generation

- 5.3. The vehicular trip generation for the proposed development has been assessed using approved peak hour trip rates which Wokingham Borough Council has used within its Wokingham Strategic Transport Model (WSTM). Although the proposed development will comprise a mixture of apartments and housing, for robustness, the trip generation is based on all units being houses. This is a robust assumption since houses typically have a higher trip rate than apartments.
- 5.4. Table 5.1 below shows the vehicle trip rates and the resultant number of trips related to the proposed development of 191 dwellings.

Table 5.1 : Vehicular Trip Generation

Residential Trip Rates	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
	In	Out	Two Way	In	Out	Two Way
Vehicular Trip Rate (per unit)	0.17	0.41	0.58	0.36	0.16	0.51
Proposed Development (191 Units)	32	78	111	69	31	97

- 5.5. As can be seen the development proposals would generate less than 120 peak hour trips during the morning and evening peak hours.

Trip Distribution and Assignment

- 5.6. The distribution and assignment of the development generated vehicular trips is being undertaken using the Wokingham Borough Council WSTM traffic model. Further details of the approach taken are set out in Section 6 of this report.

6.0 Wokingham Strategic Transport Model (WSTM)

Context

- 6.1. Wokingham Borough Council has developed a Wokingham Strategic Traffic Model (WSTM) which enables the assessment of traffic impact arising from development sites within the Borough. The model has been produced to assist Wokingham Borough Council in assessing the traffic impact and possible mitigation requirements relating to such development sites.
- 6.2. Information on the access arrangements, development quantum and peak hour vehicular trip generation has been supplied to Wokingham Borough Council. These inputs have then been used by their modellers to provide a bespoke model run to assess the impact the proposed development will have on the local highway network. The use of the WSTM model therefore allows the traffic impact assessment to be undertaken on a common and agreed basis.

Assessment Scenarios

- 6.3. The WSTM model contains outputs for morning and evening peak periods.
- 6.4. The model includes outputs for a future year of 2026, albeit it is currently being updated to allow for a 2038 future year which accounts for development proposed within Wokingham Borough Council's Draft Local Plan. Given the proposed development would not be operational until after 2026, future year flows for 2032 and 2038 are being obtained for the local highway corridors. The use of such design years complies with the DfT guidance which advises that the impacts of a development should be assessed using a design year that is at least 5 years beyond the date of submission of a planning application.
- 6.5. In order to derive traffic flow data specific to the proposed development, WSTM model outputs are being obtained for two baseline scenarios, namely:
 - 2032 'Forecast Base'
 - 2038 'Forecast Base'
- 6.6. These two scenarios will enable a future baseline to be derived against which the impacts of the proposed development can be appraised.
- 6.7. The proposed development flows arising from the 191 units have then been incorporated into each scenario to derive two additional WSTM model outputs, namely:
 - 2032 'With Proposed Development'
 - 2038 'With Proposed Development'



- 6.8. Both the 2032 'With Development' and 2038 'With Development' scenarios allow the impact of the development proposals to be assessed when the development is fully operational. The design flows also allow for traffic growth and committed development, thereby ensuring that the impact of the proposed development is assessed in a cumulative manner which accounts for the effects of other strategic planned development in the area.



7.0 Assessment of Vehicular Impact (2032)

Context

- 7.1. This Section of the Transport Assessment Report assesses the impact of the vehicular trips generated by the proposed development for a future assessment year of 2032. This represents a design year where the development will be fully operational and is more than 5 years from the submission of the planning application.

Detailed Junction Assessments

- 7.2. The detailed appraisals of the junctions in the vicinity of the site have been undertaken by using outputs from the Wokingham Strategic Transport Model (WSTM) for the 2032 'Forecast Base' and 2032 'With Development' scenarios to demonstrate the future conditions when the proposed development is fully implemented. Importantly the analysis appraises the impact of the proposed development while also including for the traffic associated with other planned developments in the area that will be operational by 2032.
- 7.3. The 2032 'Forecast Base' and 2032 'With Development' traffic flows derived from the WSTM model for the morning and evening peak hours are depicted on the diagrams attached within **Appendix J**.
- 7.4. As would be expected, flows across the majority of the network are slightly higher during the 2032 'With Development' scenario which allows for the traffic arising from the proposed development. However, of note is a slight reduction of flows on the Eastern Relief Road corridor south of the Thames Valley Science Park access roundabout. This reflects the benefit of the new link through the proposed site which facilitates more direct routing for the existing residential developments at Long Acre and Littlebrook located immediately to the north.
- 7.5. It should be noted that output from the WSTM model is available as either 'Actual Flows' or 'Demand Flows'. 'Demand Flows' can be defined as the level of traffic that wants to travel through a particular junction or link during a specific time period, but may be prevented from doing so by queuing at upstream areas of the network (i.e. the 'Demand Flows' represent unsuppressed demand). The use of 'Demand Flows' is therefore considered to present an exaggerated and overly robust representation which can result in assumed traffic levels that are unrealistically high given that they ignore the effects of upstream queuing.
- 7.6. Nevertheless, the WSTM output and subsequent analysis presented within this Transport Assessment Report is based on the 'Demand Flows'. It is therefore important that this effect is given sufficient consideration when reviewing the findings of the capacity analyses that are presented below.
- 7.7. As identified within the agreed scoping exercise, the following junctions have been assessed:
1. Site Access / Arborfield Road priority junction
 2. Shepherd Road / Cutbush Lane / Hawthorn crossroads
 3. Shinfield Eastern Relief Road / Science Park Roundabout
 4. Shinfield Eastern Relief Road / Arborfield Road Roundabout
 5. Hollow Lane / Arborfield Road / Hyde End Road / Shinfield West Roundabout

7.8. The findings of the future year capacity analysis for each of the junctions is set out below.

Site Access / Arborfield Road priority junction

- 7.9. The assessment of the proposed Site Access / Arborfield Road Priority Junction has been undertaken using JUNCTIONS 10 for the 2032 'With Development' scenario for both the AM and PM peak hours.
- 7.10. The JUNCTIONS 10 software relates certain variables such as the geometry of a junction and the traffic flow to predict the capacity of a junction. The software calculates a useful measure of performance of a junction represented as a Ratio of Flow to Capacity (RFC) of which an RFC of 1.00 indicates that a junction is operating at its theoretical capacity.
- 7.11. The result of the assessment is summarised at Table 7.1 below whilst the full capacity assessment outputs are included at **Appendix K**.

Table 7.1: Proposed Site Access / Arborfield Road Priority Junction

Approach	AM Peak Hour		PM Peak Hour	
	Queue (Vehs)	RFC	Queue (Vehs)	RFC
2032 With Development Analysis				
Site Access - Left Out	1	0.08	0	0.04
Site Access - Right Out	1	0.27	1	0.30
Arborfield Road - Right in	0	0.03	0	0.05

Note : Analysis based on Drawing No. HD008-006/P1

- 7.12. The results in Table 7.1 above indicate that the proposed site access would operate well within capacity with minimal queuing along the approaches during both peak hours. The proposed layout can therefore readily accommodate the future year traffic flows generated by the proposed development with significant spare capacity.

Shepherd Road / Cutbush Lane / Hawthorn crossroads

- 7.13. Capacity assessments of the existing Shepherd Road / Cutbush Lane / Hawthorn crossroads junction have been undertaken using JUNCTIONS 10 software for the 2032 'Forecast Base' and 2032 'With Development' scenarios for both the AM and PM peak hours.
- 7.14. The result of the assessments for each scenario is summarised at Table 7.2 below whilst the full capacity assessment outputs are included at **Appendix L**.

Table 7.2: Shepherd Road / Cutbush Lane / Hawthorn crossroads Junction

Approach	AM Peak Hour		PM Peak Hour	
	Queue (Vehs)	RFC	Queue (Vehs)	RFC
2032 Forecast Base Analysis				
Shepherd Road	1	0.12	0	0.05
Cutbush Lane (E)	0	0.00	0	0.00
Hawthorn	0	0.04	1	0.20
Cutbush Lane (W)	0	0.03	0	0.03
2032 With Development Analysis				
Shepherd Road	1	0.11	1	0.05
Cutbush Lane (E)	0	0.00	0	0.00
Hawthorn	0	0.04	1	0.19
Cutbush Lane (W)	0	0.01	0	0.04

Note : Analysis based on Existing Junction Layout

- 7.15. The results in Table 7.2 above indicate that the existing junction would operate well within capacity in both the 2032 Forecast Base and the 'With Development' scenarios during both peak periods.

Shinfield Eastern Relief Road / Thames Valley Science Park Roundabout

- 7.16. Capacity assessments of the existing Shinfield Eastern Relief Road / Science Park Roundabout have been undertaken using JUNCTIONS 10 software. The analysis tests the performance of the roundabout for the 2032 'Forecast Base' and 2032 'With Development' scenarios for both the AM and PM peak hours.
- 7.17. Drawings depicting the junction geometries that have been used are provided at **Appendix M**. The result of the assessments for each scenario is summarised at Table 7.3 below whilst the full capacity assessment outputs are included at **Appendix N**.

Table 7.3 : Science Park / Eastern Relief Road Roundabout (Existing Layout)

Approach	AM Peak Hour		PM Peak Hour	
	Queue (Vehs)	RFC	Queue (Vehs)	RFC
2032 Forecast Base Analysis				
TVSP Access	1	0.10	12	0.94
Eastern Relief Road (S)	12	0.93	2	0.69
Hawthorn	1	0.48	1	0.10
Eastern Relief Road (N)	44	1.02	3	0.76
2032 With Development Analysis				
TVSP Access	1	0.10	12	0.94
Eastern Relief Road (S)	5	0.84	2	0.67
Hawthorn	1	0.43	1	0.06
Eastern Relief Road (N)	24	0.98	4	0.78

Note : Analysis based on Existing Roundabout Layout

- 7.18. The results in Table 7.3 above indicate that the existing junction would operate slightly over capacity with an RFC of 1.02 predicted during the AM peak period for the 2032 Forecast Base scenario. During the PM scenario the junction would operate close to capacity with an RFC of 0.94 at the TVSP Access arm.
- 7.19. As mentioned above, the WSTM flows which allow for the proposed development identify a slight reduction of flows along the southern section of the Shinfield Eastern Relief Road corridor as a result of the benefit of the new link through the proposed site which facilitates a more direct routing for some existing traffic in the area. This change is evident from the 'With development' results at Table 7.3 which indicate that the roundabout would perform slightly better when the development is in place during both the morning and evening peak hours. The results therefore indicate that the proposed development would not have a significant impact on the operation of the Thames Valley Science Park access roundabout.
- 7.20. Notwithstanding the above, it is of note that an improvement scheme which would deliver additional capacity at the roundabout has already been secured through S106 Agreement as part of the Thames Valley Science Park planning consent. The improvement scheme provides additional capacity along the Eastern Relief Road northern approach and hence, if implemented, the predicted queuing identified in Table 7.3 would be less pronounced.

Shinfield Eastern Relief Road / Arborfield Road Roundabout

- 7.21. Capacity assessments of the Shinfield Eastern Relief Road / Arborfield Road Roundabout have been undertaken using JUNCTIONS 10 software. The analysis tests the performance of the roundabout for the 2032 'Forecast Base' and 2032 'With Development' scenarios for both the AM and PM peak hours.
- 7.22. The result of the assessments for each scenario is summarised at Table 7.4 below whilst the full capacity assessment outputs are included at **Appendix O**. As before, drawings depicting the junction geometries that have been used are provided at **Appendix M**.

Table 7.4: Eastern Relief Road / Arborfield Road Roundabout

Approach	AM Peak Hour		PM Peak Hour	
	Queue (Vehs)	RFC	Queue (Vehs)	RFC
2032 Forecast Base Analysis				
Arborfield Road (E)	3	0.73	8	0.89
Arborfield Road (W)	7	0.88	1	0.49
Eastern Relief Road (N)	2	0.64	25	0.98
2032 With Development Analysis				
Arborfield Road (E)	3	0.74	8	0.89
Arborfield Road (W)	3	0.76	1	0.46
Eastern Relief Road (N)	2	0.62	18	0.96

Note : Analysis based on Existing Roundabout Layout

- 7.23. The analysis in Table 7.4 shows that the existing roundabout is forecast to operate close to capacity during the 2032 Forecast Base scenario with an RFC of 0.98 during the PM peak period. As with the TVSP access roundabout, the slight reduction in flows along the southern section of the Shinfield Eastern Relief Road corridor when the development is implemented does mean that the approaches to the roundabout perform marginally better in the 2032 'With Development' scenario.

Hollow Lane / Arborfield Road / Hyde End Road / Shinfield West Roundabout

- 7.24. Capacity assessments of the Hollow Lane / Arborfield Road / Hyde End Road / Shinfield West Roundabout have been undertaken using JUNCTIONS 10 software for the 2032 'Forecast Base' and 2032 'With Development' scenarios for both the AM and PM peak hours. The result of the assessments for each scenario is summarised at Table 7.5 below whilst the full capacity assessment outputs are included at **Appendix P**. Drawings depicting the junction geometries that have been used are provided at **Appendix M**.

Table 7.5: A327 / Arborfield Road / Hyde End Road / Beke Avenue Roundabout

Approach	AM Peak Hour		PM Peak Hour	
	Queue (Vehs)	RFC	Queue (Vehs)	RFC
2032 Forecast Base Analysis				
Arborfield Road (E)	1	0.29	2	0.60
B3349 Hyde End Road	6	0.85	1	0.49
Beke Avenue	1	0.30	1	0.29
Hollow Lane	1	0.49	1	0.43
2032 with Development Analysis				
Arborfield Road (E)	1	0.32	2	0.62
B3349 Hyde End Road	6	0.86	1	0.50
Beke Avenue	1	0.32	1	0.30
Hollow Lane	1	0.51	1	0.43

Note : Analysis based on Existing Roundabout Layout

- 7.25. Table 7.5 indicates that each of the arms of the Hollow Lane roundabout would operate within capacity during the 2032 'Forecast Base' scenario and would continue to do so during the 'With development' scenario. The Hyde End Road approach has the highest predicted RFC (0.85) during the AM peak period, which increases to 0.86 when allowing for the proposed development. The marginal increase in RFC does not however result in a change to the predicted queue of 6 vehicles along this approach.

Wider Highway Network

- 7.26. In addition to assessing the impact of the proposed development at the local junctions, an appraisal of traffic flows has also been undertaken along the main corridors in the vicinity of the site in order to ascertain the level of impact of the development along the wider highway network.

7.27. Table 7.6 below identifies the number of vehicles that are predicted along the wider highway corridors during the morning and evening peak hours in the 2032 'Forecast Base' and 2032 'With Development' scenarios.

Table 7.6: Two-Way Flows Along Wider Highway Network

Link	AM Peak Hour				PM Peak Hour			
	2032 Base	2032 With Dev	Change	% Change	2032 Flow	2032 With Dev	Change	% Change
A327 Shinfield Road	1,888	1,889	+1	0%	1,878	1,886	+8	0%
B3270 Lower Earley Way (West)	3,893	3,896	+3	0%	3,415	3,429	+14	0%
B3270 Lower Earley Way (East)	2,621	2,633	+12	0%	2,668	2,682	+13	+1%
Shinfield Road (West of University Bridge)	1,924	1,922	-1	0%	1,694	1,727	+33	+2%
Beke Avenue	335	345	+10	+3%	537	538	+2	0%
Reading Road (East of Observer Way)	523	532	+9	+2%	796	808	+11	+1%
Hyde End Road	1,931	1,977	+47	+2%	1,380	1,410	+30	+2%
Observer Way	2,074	2,123	+49	+2%	2,215	2,233	+18	+1%

Note : Flows are Two-Way Total Vehicles

- 7.28. The appraisal of changes in traffic flows along the wider highway network demonstrates that the traffic flows generated by the proposed development would soon dissipate onto the various road corridors.
- 7.29. As Table 7.6 shows, the predicted traffic increases along the wider highway network are low, typically equating to less than 3% when compared to the 'Forecast Base' flows. Traffic increases of these magnitudes lie within the day-to-day variation of traffic flows and would therefore not have a material impact on the performance of junctions along these areas of the wider highway network.
- 7.30. The NPPF in setting a benchmark of a 'Severe' impact is deliberate in that it should not prevent development with high sustainable credentials from preceding unless the residual traffic impacts are clearly unacceptable. In this respect it is evident that the proposed development would not have any discernible effects on the operation of the junctions along the surrounding highway network and hence the resultant impact cannot be considered as being severe.



8.0 Assessment of Vehicular Impact (2038)

Context

- 8.1. The analysis presented within Section 7 of this Transport Assessment Report for the future year scenario of 2032 already allows for full completion and occupation of the proposed development. The appraisal therefore already provides a robust assessment of the vehicular impact of the proposed development in the context of planned developments in the area.
- 8.2. Notwithstanding the above, at the request of Wokingham Borough Council during scoping discussions, this section of the Transport Assessment Report presents the findings of supplementary analysis which assesses the impact of the vehicular trips generated by the proposed development during a future assessment year of 2038. It should be noted however that this assessment scenario represents a design year which is 14 years into the future and hence lies beyond the requirements set out in transport policy guidance. Accordingly, the results set out below should be considered in this context and are provided for information purposes only.

Detailed Junction Assessments

- 8.3. The detailed appraisals of the suite of junctions have been undertaken by using the WSTM outputs from the 2038 'Forecast Base' and 2038 'With Development' scenarios to demonstrate the future conditions.
- 8.4. The 2038 'Forecast Base' traffic flows derived from the WSTM model for the morning and evening peak hours are depicted at **Appendix Q**. The corresponding morning and evening peak hour flows from the 2038 'With Development' model are also presented at **Appendix Q**.
- 8.5. Similarly to the 2032 flow scenarios, flows across the majority of the network are slightly higher when allowing for the proposed development. There is however a marginal reduction of flows on the southern section of the Eastern Relief Road corridor south of the Thames Valley Science Park access roundabout which again is attributable to the benefit of the new link through the proposed site which facilitates a more direct routing for some existing traffic in the area.
- 8.6. The junctions have again been assessed using the robust 'Demand flows' obtained from the WSTM model.

Site Accesses

- 8.7. The assessment of the proposed Site Access / Arborfield Road Priority Junction and existing Cutbush Lane / Shepherd Lane priority junction has been undertaken using JUNCTIONS 10 for the 2038 'With Development' scenario for both the AM and PM peak hours. The result of the assessments are summarised at Table 8.1 and Table 8.2 below whilst the full capacity assessment outputs are included at **Appendix R**.

Table 8.1: Proposed Site Access / Arborfield Road Priority Junction

Approach	AM Peak Hour		PM Peak Hour	
	Queue (Vehs)	RFC	Queue (Vehs)	RFC
2038 With Development Analysis				
Site Access - Left Out	1	0.08	1	0.07
Site Access - Right Out	1	0.29	1	0.42
Arborfield Road - Right in	0	0.03	0	0.04

Note : Analysis based on Drawing No. HD008-06/P1

Table 8.2: Shepherd Road / Cutbush Lane / Hawthorn crossroads Junction

Approach	AM Peak Hour		PM Peak Hour	
	Queue (Vehs)	RFC	Queue (Vehs)	RFC
2038 Forecast Base Analysis				
Hawthorn	1	0.11	0	0.04
Cutbush Lane (E)	0	0.00	0	0.00
Shepherd Road	1	0.05	1	0.31
Cutbush Lane (W)	0	0.01	1	0.02
2038 With Development Analysis				
Hawthorn	1	0.12	1	0.05
Cutbush Lane (E)	0	0.00	0	0.00
Shepherd Road	0	0.04	1	0.22
Cutbush Lane (W)	0	0.01	1	0.05

Note : Analysis based on Existing Layout

- 8.8. The results in Table 8.1 and Table 8.2 above indicate that the proposed site accesses would continue to operate within capacity with minimal queuing along all approaches during the 2038 future year scenarios.

Other Junction Assessments

- 8.9. Capacity assessments of the remaining junctions have been undertaken for the 2038 'Forecast Base' and 2038 'With Development' scenarios for both the AM and PM peak hours. The results are summarised in Tables 8.3 to Table 8.5 below whilst the full capacity assessment outputs are also included within **Appendix R**.

Table 8.3 : Science Park / Eastern Relief Road Roundabout (Existing Layout)

Approach	AM Peak Hour		PM Peak Hour	
	Queue (Vehs)	RFC	Queue (Vehs)	RFC
2038 Forecast Base Analysis				
TVSP Access	1	0.10	28	1.00
Eastern Relief Road (S)	16	0.95	3	0.73
Hawthorn	1	0.52	1	0.11
Eastern Relief Road (N)	79	1.06	4	0.81
2038 With Development Analysis				
TVSP Access	1	0.10	23	0.99
Eastern Relief Road (S)	6	0.86	2	0.69
Hawthorn	1	0.49	1	0.06
Eastern Relief Road (N)	40	1.01	4	0.81

Table 8.4: Eastern Relief Road / Arborfield Road Roundabout

Approach	AM Peak Hour		PM Peak Hour	
	Queue (Vehs)	RFC	Queue (Vehs)	RFC
2038 Forecast Base Analysis				
Arborfield Road (E)	4	0.79	10	0.92
Arborfield Road (W)	8	0.89	1	0.54
Eastern Relief Road (N)	2	0.67	44	1.01
2038 With Development Analysis				
Arborfield Road (E)	4	0.79	10	0.91
Arborfield Road (W)	4	0.79	1	0.50
Eastern Relief Road (N)	2	0.65	36	1.00

Table 8.5: A327 / Arborfield Road / Hyde End Road / Beke Avenue Roundabout

Approach	AM Peak Hour		PM Peak Hour	
	Queue (Vehs)	RFC	Queue (Vehs)	RFC
2038 Forecast Base Analysis				
Arborfield Road (E)	1	0.32	2	0.62
B3349 Hyde End Road	6	0.86	1	0.51
Beke Avenue	1	0.33	1	0.30
Hollow Lane	1	0.52	1	0.46
2038 with Development Analysis				
Arborfield Road (E)	1	0.34	2	0.67
B3349 Hyde End Road	6	0.86	1	0.50
Beke Avenue	1	0.34	1	0.30
Hollow Lane	1	0.54	1	0.43

- 8.10. The analysis demonstrates that the two roundabout junctions on the Shinfield Eastern Relief Road would operate at capacity during the 2038 baseline scenario. During the 'with development scenarios,' flows along the southern section of the Eastern Relief Road reduce slightly which results in both roundabouts performing slightly better with the development.
- 8.11. At the Hollow Lane Roundabout in Shinfield, the effect of the proposed development traffic on queuing levels in 2038 would be minimal with no significant changes to the RFC of the roundabout during each peak period.
- 8.12. Of note is that the 2038 future year scenario allows for planned development within the borough of which a significant part may compromise strategic development at the proposed Loddon Garden Village SDL development to the east of Shinfield. If the future growth was to manifest in this way, then the Loddon Garden Village site is likely to include measures to mitigate impacts in the area, including along the Shinfield Eastern Relief Road corridor.

Wider Highway Network

- 8.13. Similarly to that undertaken in Section 7 of this Transport Assessment Report, in addition to assessing the impact of the proposed development at the local junctions, an appraisal of traffic flows has also been undertaken along the main corridors in the vicinity of the site in order to ascertain the level of impact of the development along the wider highway network during 2038.
- 8.14. Table 8.6 below identifies the number of vehicles that are predicted along the wider highway corridors during the morning and evening peak hours in the 2038 'Forecast Base' and 2038 'With Development' scenarios.

Table 8.6: Two-Way Flows Along Wider Highway Network

Link	AM Peak Hour				PM Peak Hour			
	2038 Base	2038 With Dev	Change	% Change	2038 Flow	2038 With Dev	Change	% Change
A327 Shinfield Road	2000	2020	+20	+1%	1892	1915	+23	+1%
B3270 Lower Earley Way (West)	3932	3952	+20	+1%	3443	3493	+50	+1%
B3270 Lower Earley Way (East)	2665	2662	-3	0%	2696	2718	+22	+1%
Shinfield Road (West of University Bridge)	1996	1954	-43	-2%	1683	1738	+55	+3%
Beke Avenue	346	354	+8	+2%	543	547	+4	+1%
Reading Road (East of Observer Way)	538	551	+12	+2%	826	846	+21	+3%
Hyde End Road	2013	2008	-4	0%	1422	1432	+10	+1%
Observer Way	2192	2237	+45	+2%	2248	2268	+20	+1%

Note : Flows are Two-Way Total Vehicles



- 8.15. As Table 8.6 shows, the predicted traffic increases along the wider highway network are very low, typically equating to less than 3% when compared to the 'Forecast Base' flows. Traffic increases of these magnitudes lie within the day-to-day variation of traffic flows and would therefore not have a material impact on the performance of junctions along these areas of the wider highway network.
- 8.16. There are some instances where traffic flows would decrease slightly. This is due to the traffic adopting different routings in response to the different traffic flows and highway infrastructure that is reflected within the future year WSTM traffic model as well as the additional route choice as a result of the new road link through the proposed site.
- 8.17. Based on the above it is concluded that the traffic attributable to the proposed development would not result in any significant impacts to the operation of the wider highway network during the 2038 future year scenario.

9.0 Appraisal of Non-Car Travel

Context

- 9.1. The significant majority of the trip generation in the morning and evening peak hours will be related to residents departing and returning from work. Journey to Work census data has therefore been used as a reasonable proxy for determining the number of movements for non-car modes during these peak hours.
- 9.2. The proposed development lies within the vicinity of the Shinfield North and Shinfield South wards. Journey to Work Census Data for 2011 has been used to establish the mode share of person trips in these two local wards and averaged.
- 9.3. The census travel to work data is provided at Table 9.1 below as well as the associated number of trips for each mode. This has been calculated using the vehicle trip rates identified at Section 5.

Table 9.1: Non Car Trip Generation

Mode of Travel	2011 Census Mode Share	Two Way Development Trips (Peak Hour)
Pedestrian	5%	7
Cyclist	3%	4
Bus	5%	7
Rail	4%	6
Vehicular	79%	111
Passenger	4%	6
Total	100%	141

- 9.4. An appraisal of the suitability of the non-car networks to accommodate the trips that will be generated is presented below for each mode of travel.
- 9.5. It should also be noted that a full assessment of existing transport conditions including the accessibility of local services is provided at Section 3 of this report and details of the proposed transport links within the development to existing routes are included at Section 4.

Walk and Cycle Trips

- 9.6. Table 9.1 identifies that 7 walk trips and 4 cycle trips would arise from the development site during each peak hour. Furthermore, a further 7 trips would be undertaken by bus which will manifest in walk trips to the local bus stops. Similar, the 6 trips by rail are likely to occur by residents first walking to bus stops to access services at Reading or instead cycle to either Earley or Reading train stations.



- 9.7. The peak hour walk and cycle trips are likely to represent residents walking to work from the site to nearby locations such as the Thames Valley Science Park or local facilities within Shinfield. Such journeys will also be represented in the cycle trip forecasts, albeit these may also include trips to destinations which are further afield. A proportion of the cycle trips may also comprise residents performing linked trips to/from work via Reading and Earley rail stations.
- 9.8. In light of the above it is considered that the walk and cycle trips are likely to occur along the following key routes to and from the proposed development.
- Route A : To the north-east through to TVSP, Lower Earley and beyond.
 - Route B : To the south-west to Shinfield village centre.
 - Route C : To the north-west via Brookers Hill or Black Boy gyratory.

Route A : To the North-East to TVSP or Lower Earley and beyond

- 9.9. The continuation of the spine road with 2m footways at either side into the site and the 3m footway/cycleway at the eastern frontage will provide convenient and direct access for trips with destinations to the north-east.
- 9.10. Future residents could travel along the 3m wide footways / cycleway which continues north along the eastern side of the Littlebrook Estate and then along Hawthorn through the Long Acre estate before connecting into the footways / cycleways that route along the Shinfield Eastern Relief Road and through Thames Valley Science Park. Alternatively, pedestrians and cyclists could route east along Cutbush Lane, using the refuge island to cross the Shinfield Eastern Relief Road to continue along Cutbush Lane (east)
- 9.11. Both routes lead to the Cutbush Lane foot/cycle bridge over the M4 motorway. An at-grade crossing of the B3270 Lower Early Way is provided at the northern end of the bridge which enables those on foot and cycle to continue to the north-east along the footways and cycleways that are present through Lower Earley. The pedestrian and cycle routes then continue to the north-east, providing connections to an Asda Store and the Loddon Valley Leisure Centre.

Route B : To the South-West to Shinfield Village Centre

- 9.12. Future residents located towards the north of the proposed site could route westwards using the existing Public Right of Way (SHIN FP7) which provides access to Oatlands Road. From this point, pedestrians could continue southwards through to Shinfield using the footways along Oatlands Road whilst cyclists can conveniently travel along the lightly trafficked carriageway. There are also footways / cycleways along Hollow Lane which provide links to the village centre as well as connecting to the footway / cycleway provision along Church Lane which continues through the Shinfield West development
- 9.13. Alternatively, pedestrians and cyclists could travel south onto Arborfield Road, then route to the west using the carriageway or the new footway being provided as part of the access proposals which link into the existing footway provision towards Shinfield village centre.
- 9.14. Connections can then made to the footway / cycleway links being provided along Beke Avenue which serves the Local Centre area within the Shinfield West development as well as continuing through past the primary school and onwards to Spencers Wood.



Route C : To the North west via Brookers Hill or Black Boy Gyratory

- 9.15. Pedestrians and cyclists traveling to the north-west would route onto the Hollow Lane corridor, either by using the routes that connect northwards to the footway / cycleway provision along the Shinfield Eastern Relief Road or the similar provision along the A327 Hollow Lane corridor.
- 9.16. Those travelling northwards towards Reading would use the University Bridge or the adjacent pedestrian / cycle / bus only bridge which connect to the Black Boy gyratory before continuing along the shared use footway / cycleway that runs along the eastern side of the A327 corridor as it routes northwards into Reading.
- 9.17. Connections to the north-west can also be made along the 3m wide shared use footway / cycleway along the Brookers Hill corridor which continues to Three Mile Cross. The Brookers Hill footway / cycleway also connects to a footbridge which offers an alternative crossing of the M4 motorway, connecting into the pedestrian and cycle facilities that route towards Reading along the Whitley Wood Lane corridor.

Public Transport Trips

- 9.18. It is evident from Table 9.1 that, based on the existing local mode share, the development would generate some 7 bus trips during each peak hour. A further 6 rail trips would be generated which are most likely to also manifest as either bus trips (or cycle trips to a lesser degree).
- 9.19. As detailed within Section 3, there are a number of frequent bus services operating near to the proposed development. Services operate at bus stops along Arborfield Road to the south, Hollow Lane to the west and Hawthorn to the north providing access to a range of destinations including Reading, Arborfield and Wokingham.
- 9.20. Notably, all areas of the proposed development lie within an actual walk distance of 600m from a nearby bus stop. Moreover, the high level of footway and cycleway provision that will be promoted within the development will ensure that residents enjoy a high level of connectivity when travelling to and from the surrounding bus stops.

10.0 Summary and Conclusions

Context

- 10.1. This Transport Assessment has been prepared by Abley Letchford Partnership Ltd, on behalf of Bellway Homes Ltd (Thames valley), in relation to the proposed residential development on Land North of Arborfield Road, Shinfield. A copy of the proposed site layout for the development is included at **Appendix A** of this report.
- 10.2. The development proposals comprise 191 residential dwellings. with access to be formed from the south onto Arborfield Road. It is also proposed to connect to the existing spine road which routes through the Littlebrook and Long Acre residential estates which lie to the north of the site, thereby providing a second point of access which will deliver a vehicular through route between Arborfield Road and the Shinfield Eastern Relief Road / Thames Valley Science Park roundabout.

Accessibility

- 10.3. The location of the proposed development is consistent with national, regional and local policy aspirations. There is a range of existing and planned jobs, schools, shops, community facilities and amenities, which are accessible within reasonable walking and cycling distance reducing the need to travel by private car. The proposed development is also well positioned relative to a wider range of major employment, commercial, retail and recreational facilities located in the town centres of Reading and Wokingham which are currently accessible by public transport. A significant proportion of journeys arising from the proposed development could therefore be undertaken by non-car modes in accordance with the transport policy aspirations articulated at all levels of government.

Travel by Foot and Cycle

- 10.4. The proposed pedestrian and cycle provision has been designed to provide a permeable network within the site. Particular emphasis has been given to creating direct routes through the proposed development in response to the pedestrian and cyclist desire lines that are likely to be created between Shinfield village to the south-west and to northern destinations such as Thames Valley Science Park, Lower Earley and Reading.
- 10.5. Notably, an off road 3m shared use pedestrian / cycleway is being provided along the eastern flank of the development linking to a new crossing point along Arborfield Road that will afford direct connectivity into Langley Mead SANG which lies immediately to the north.

Travel by Public Transport

- 10.6. The Leopard 3 service operates along the southern frontage of the site offering a 20 minute frequency service between Reading and Arborfield and an hourly service to Wokingham. In addition, the 900 service operates at an hourly frequency through the Littlebrook estate to the north. All areas of the development are within a 600m actual walk distance from the nearby bus stops. These services will therefore offer future residents a good level of accessibility for bus journeys.



- 10.7. Moreover, care has been taken during the design of the main spine road through the Layout to ensure that the carriageway is of a sufficient width to accommodate two-way buses routing through the site. The Layout therefore safeguards the ability for buses to travel through the development between Arborfield Road and the Shinfield Eastern Relief Road / Thames Valley Science Park roundabout should there be a desire to adopt such a routing in the future.

Travel by Car

- 10.8. Vehicular access at the southern frontage of the site will be formed by way of a priority junction with a ghost island right turn lane onto Arborfield Road. The proposed access arrangement is depicted on Drawing No. HD008-006/P1, attached as **Appendix G**. The access junction has been designed to cater for visibility spays of 2.4 x 120m, commensurate with the speed limit of 40mph.
- 10.9. At the northern end of the site, it is proposed to connect into the Shepherd Road corridor which runs through the Long Acre estate. This will then create a new vehicular route between Arborfield Road and the Thames Valley Science Park access roundabout.
- 10.10. The internal streets within the development, including the access junction onto Arborfield Road, have been designed to accommodate large service and emergency vehicle movements throughout the development in a same and satisfactory manner.
- 10.11. Vehicular parking will be provided in a combination of ways including on-street parking, front and rear courtyards, within squares and mews, on-plot driveways and garages. The application of the Wokingham Borough Council parking calculator identifies a requirement for 74 visitor and unallocated spaces. The proposals respond positively to this requirement by providing 78 visitor / unallocated spaces throughout the Layout, in accordance with the minimum standard. The resultant parking provision equates to an overall ratio of 2.23 spaces per dwelling.

Traffic Impact

- 10.12. Use has been made of Wokingham Borough Council's Strategic Traffic Model (WSTM) in order to ensure that the traffic impact of the development proposals is assessed on a common and agreed basis. Information on the access arrangements, development quantum and peak hour vehicular trip generation has been supplied to Wokingham Borough Council. These inputs have enabled their modellers to provide a bespoke model run to assess the impact the proposed development will have on the local highway network.
- 10.13. The modelling scenarios allow for committed and planned development throughout Wokingham Borough. The impact of the proposed development is therefore assessed in a cumulative manner which accounts for the effects of other strategic planned development in the area.
- 10.14. As would be expected, flows across the majority of the network are slightly higher during the 'With Development' scenarios when compared to the 'Forecast base' scenarios. However, of note is a slight reduction of flows on the southern section of the Eastern Relief Road corridor south of the Thames Valley Science Park access roundabout. This reflects the benefit of the new link through the proposed site which facilitates more direct routing for the existing residential developments at Long Acre and Littlebrook located immediately to the north.



- 10.15. It has been demonstrated that the proposed site access junctions would operate within capacity with minimal queuing along the approaches during both peak hours. This is the case for both the 2032 and 2038 future year scenarios. It is concluded therefore that the proposed access arrangements can satisfactorily accommodate the traffic generated by the proposed development.
- 10.16. The capacity analysis for the nearby junctions on the highway network has demonstrated that the effect of the proposed development traffic on capacity and queuing levels would be minimal during the 2032 and 2038 scenarios.
- 10.17. Similarly, the appraisal of changes in traffic flows along the wider highway network demonstrates that the traffic flows generated by the proposed development would soon dissipate onto the various road corridors. The resultant increases in traffic along the road corridors beyond Shinfield village lie within the day-to-day variation of traffic flows and would therefore have no discernible impact.
- 10.18. It is therefore concluded that the traffic attributable to the proposed development at Arborfield Road would not result in any significant impacts to the operation of the highway network in the vicinity of the development.

Conclusion

- 10.19. The analysis within this Transport Assessment Report has demonstrated that the proposed development accords with the key transport tests as set out in the NPPF. Accordingly, the proposed development is considered to be acceptable in terms of highways and transport matters.



Appendices



Appendix A - Proposed Layout