BLENHEIM ESTATE

HOMES

Land East of Park View Woodstock

Environmental Statement Technical Appendix F: Transport Assessment

June 2022

DTA

Land East of Park View, Woodstock

Transport Assessment

Final

DTA

Transport Planning Consultants

Land East of Park View, Woodstock

Transport Assessment

1st June 2022
SJT/NS 23570-01a Transport Assessment_Final

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1 INTRODUCTION

1.1 David Tucker Associates has been commissioned by Blenheim Estate Homes to provide highways and transport advice, and to prepare a Transport Assessment to support a planning application for a residential development of up to 500 dwellings on land off the A4095 Upper Campsfield Road, to the southeast of Woodstock. An indicative site masterplan is attached at **Appendix A**.

1.2 This Transport Assessment ("TA") has been carried out in accordance with the NPPF, which states that all developments that generate significant amounts of movements should be supported by a Transport Statement or Transport Assessment and Travel Plan. This TA considers the transport and highways implications associated with the proposals and is structured as follows:

- Chapter 2: National and Local Planning Policy
- Chapter 3: Existing Conditions
- Chapter 4: Development Proposals
- Chapter 5: Traffic Generation and Impact
- Chapter 6: Summary and Conclusions

1.3 A detailed analysis has been carried out to assess the likely traffic generation from the proposals, the distribution of trips and the assignment of traffic onto the road network. In this way the traffic impact has been assessed, along with consideration of measures required to mitigate the impact of the traffic generated by the development.

1.4 The assessment considers the potential transport and highways impacts of the proposed development generated traffic on the capacity and safety of the surrounding road network and the implications for public transport and pedestrian and cycling movements.

1.5 A Travel Plan has been prepared to set out how the development will be managed from a sustainable travel perspective, and this includes consideration of trigger points and infrastructure requirements.

2 POLICY

2.1 National Guidance

2.1.1 In July 2021, the Government published a revised National Planning Policy Framework (NPPF). The NPPF confirms that the Government will continue to encourage sustainable development and in relation to transport issues it notes that:

> *"The planning system should actively manage patterns of growth in support of these objectives. Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health. However, opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making."*
>
> Para 105

2.1.2 It confirms that:

> *"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed".*
>
> Para 113

2.1.3 The policy test in terms of new development in the NPPF relate to the need to ensure traffic impacts are not severe whilst cost effectively limiting infrastructure. To ensure high quality development the NPPF confirms that:

> *"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."*
>
> Para 111
>
> *"Within this context, applications for development should:*
>
> *a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*
>
> *b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."

Para 112

2.2 Local Guidance

Cherwell Local Plan 2011-2031 (Part 1)

2.2.1 The Local Plan sets out strategic and local planning policies for meeting development needs and for the use of land. It is a plan which looks to the future and sets out our proposals to support the local economy and our communities over the next few decades.

2.2.2 Key transport policies include:

Policy SLE 4: Improved Transport and Connections

The Council will support the implementation of the proposals in the Movement Strategies and the Local Transport Plan to deliver key connections, to support modal shift and to support more sustainable locations for employment and housing growth.

We will support key transport proposals including:

- Transport Improvements at Banbury, Bicester and at the Former RAF
- Upper Heyford in accordance with the County Council's Local Transport
- Plan and Movement Strategies
- Projects associated with East-West rail including new stations at Bicester
- Town and Water Eaton
- Rail freight associated development at Graven Hill, Bicester
- Improvements to M40 junctions.

Consultation on options for new link and relief roads at Bicester and Banbury will be undertaken through the Local Transport Plan (LTP) review process. Routes identified

following strategic options appraisal work for LTP4 will be confirmed by the County Council and will be incorporated in Local Plan Part 2.

New development in the District will be required to provide financial and/or in-kind contributions to mitigate the transport impacts of development.

All development where reasonable to do so, should facilitate the use of sustainable modes of transport to make the fullest possible use of public transport, walking and cycling. Encouragement will be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. Development which is not suitable for the roads that serve the development, and which have a severe traffic impact will not be supported.

Cherwell Local Plan 2011-2031 (Part 1) – Partial Review – Oxford's Unmet Housing Need

2.2.3 In the Cherwell Local Plan adopted in 2015, the Council committed to working on an on-going basis under a legal Duty to Cooperate with all other Oxfordshire local authorities to address the need for housing across the Oxfordshire housing market area.

2.2.4 The Oxfordshire councils had all recognised that Oxford may not be able to accommodate the whole of its new housing requirement for the 2011-2031 period within its administrative boundary.

2.2.5 The Plan made clear that if joint work between the authorities revealed that Cherwell and other districts needed to meet additional need for Oxford, this would trigger a 'Partial Review' of the Local Plan.

2.2.6 This document is that Partial Review – a Plan to provide Cherwell's share of the unmet housing needs of Oxford to 2031.

2.2.7 In terms of transport, the document acknowledges that the road network around north Oxford suffers from high levels of traffic congestion and delay exacerbated by major road and rail intersections. The Oxford Transport Strategy responds to these issues with proposed 'Rapid Transit' routes including improved and priority bus services, a new Park and Ride Facility at the Woodstock/ A44 roundabout and an extension of the Water Eaton Park and Ride next to Oxford Parkway Railway Station.

Policy PR4a: Sustainable Transport

The strategic developments provided for under Policies PR6 to PR9 will be expected to provide proportionate financial contributions directly related to the development in order to secure necessary improvements to, and mitigations for, the highway network and to deliver necessary improvements to infrastructure and services for public transport. Where necessary, the provision of land will be required to support the implementation of relevant schemes set out in the Local Transport Plan 4 (including the Oxford Transport Strategy), the A44/A4260 Corridor Study and Local Plan Partial Review Transport Mitigation Assessment. These schemes shall include:

a) improved bus services and facilities along:

   i. the A44/A4144 corridor linking Woodstock and Oxford.

   ii. the A4260/A4165 (Oxford Road) linking Kidlington, Gosford, Water Eaton and Oxford.

   iii. Langford Lane.

b) the enhancement of the off-carriageway Cycle Track/ Shared Use Path along the western side of the A44 and the provision of at least one pedestrian and cycle and wheelchair crossing over the A44.

c) the prioritisation of the A44 over the A4260 as the primary north-south through route for private motor vehicles into and out of Oxford.

d) improved rapid transit/bus services and associated Super Cycleway along the A4260 into Oxford.

e) improvements to the public realm through the centre of Kidlington associated with (d) above.

f) the provision of new and enhanced pedestrian, cycling and wheelchair routes into and out of Oxford.

Oxfordshire Local Transport Plan 4

2.2.8 The LTP 4 was adopted in 2015 and updated in 2016 in order to strength the emphasis on improving air quality and making better provision for walking and cycling. The main goals of the LTP 4 are:

Supporting growth and economic vitality

- Maintain and improve transport connections to support economic growth and vitality across the county.
- Make most effective use of all available transport capacity through innovative management of the network.
- Increase journey time reliability and minimise end-to-end public transport journey times on main routes; and
- Develop a high quality, innovative and resilient integrated transport system that is attractive to customers and generates inward investment.

Reducing Emissions

- Minimise the need to travel.
- Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive.
- Influence the location and layout of development to maximise the use and value of existing and planned sustainable transport investment; and
- Reduce per capita carbon emissions from transport in Oxfordshire in line with UK Government targets.

Improving quality of life

- Mitigate and wherever possible enhance the impacts of transport on the local built, historic and natural environment; and
- Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties, and enabling inclusive access to jobs, education, training and services.

2.2.9 Key transport policies in the LTP 4 include:

Policy 02: Oxfordshire County Council will manage and, where appropriate, develop the county's road network to reduce congestion and minimise disruption and delays, prioritising strategic routes.

Policy 03: Oxfordshire County Council will support measures and innovation that make more efficient use of transport network capacity by reducing the proportion of

single occupancy car journeys and encouraging a greater proportion of journeys to be made on foot, by bicycle, and/or by public transport.

Policy 04: Oxfordshire County Council will prioritise the needs of different types of users in developing transport schemes or considering development proposals, taking into account road classification and function/purpose, the characteristics and function of the place and the need to make efficient use of transport network capacity.

Policy 07: Oxfordshire County Council will work with operators and other partners to enhance the network of high quality, integrated public transport services, interchanges, and supporting infrastructure, and will support the development of quality Bus Partnerships and Rail Partnerships, where appropriate.

Policy 08: Oxfordshire County Council will work with partners towards the introduction and use of smart, integrated payment solutions for a range of transport modes.

Policy 9: Oxfordshire County Council will work with the rail industry to enhance the rail network in Oxfordshire and connections to it, where this supports the county's objectives for economic growth.

Policy 17: Oxfordshire County Council will seek to ensure through cooperation with the districts and city councils, that the location of development makes the best use of existing and planned infrastructure, provides new or improved infrastructure and reduces the need to travel and supports walking, cycling and public transport.

Policy 19: Oxfordshire County Council will encourage the use of modes of travel associated with healthy and active lifestyles.

Policy 20: Oxfordshire County Council will carry out targeted safety improvements on walking and cycling routes to school, to encourage active travel and reduce pressure on school bus transport.

3 EXISTING CONDITIONS

3.1 Site Location

3.1.1 The site is located to the southeast of Woodstock and is approximately 12km northwest of Oxford in Cherwell District. It is bounded by Shipton Road to the north, the A4095 Upper Campsfield Road to the east, the A44 Oxford Road to the south and Park View to the west.

3.1.2 The site is shown on **Figure 1**.

3.2 Local and Wider Road Network

3.2.1 The main strategic access from Woodstock is via the A44 Oxford Road. This provides access to Oxford, around 13 miles (21km) to the South. The A34(T) lies around 5 miles (8km) to the south, which provides strategic Trunk Road access to the M40 and M4.

3.2.2 A44 Oxford Road runs in a northwest-southeast direction providing connections to Oxford to the southeast and Chipping Norton to the northwest. The road varies in width from a single carriageway to a dual carriageway. In the vicinity of the site the road is a single lane carriageway and is subject to a 50mph speed limit. This reduces to 30mph when entering the built-up area of Woodstock. There is a shared foot/ cycle route along the northbound side of the carriageway but no footway provision on the southbound side of the carriageway.

3.2.3 The A44 Oxford Road connects to the A4095 Upper Campsfield Road/ A44 Woodstock Road/ A4095 Bladon Road at a large priority roundabout. The A4095 routes through the village of Long Hanborough to Witney.

3.2.4 The A4095 Upper Campsfield Road runs between the A44 Oxford Road / A44 Woodstock Road/ A4095 Bladon Road roundabout to the A4260 Banbury Road and is approximately 2km long. The road is a single lane carriageway and subject to a national speed limit which reduces to 50mph through Upper Campsfield village. There is no footway provision on either side of the carriageway.

3.2.5 Shipton Road runs east to west and is approximately 1.8km long. At its eastern end it links to Upper Campsfield Road. The initial eastern section is rural in character with agricultural land both sides of the road. The alignment of the road on this

section is relatively straight except for two ninety degree bends, a right hand bend followed by a left hand bend at which point the road becomes more urban in character. Within Woodstock, Shipton Road provides access to existing residential areas and to Marlborough School. To the west it links via a mini-roundabout to Hensington Road, which in turn links to the A44 Oxford Road.

3.2.6 Shipton Road is a single carriageway approximately 6.5m wide. There is a footpath (approx. 1.8m wide) running along the frontage of the Marlborough Church of England School and to the new Marlborough Place residential area. The road is well marked and maintained between the mini-roundabout and the school.

3.2.7 Shipton Road itself is heavily traffic managed, subject to a 20mph speed limit and is well lit up to the Marlborough Church of England School. From here to the A4095 Upper Campsfield Road, the road is typically rural in nature with a national speed limit and no footway provision and no street lighting.

3.2.8 The stretch of Shipton Road between the entrance to the school and Randolph Avenue has been upgraded as part of the consent for the Marlborough Place residential development to include a give-way build out restricting traffic to one-way flow and improved footway links.

3.3 Existing Traffic Flows

3.3.1 In order to establish existing flows in the vicinity of the site, automatic traffic counts (ATC) were undertaken at various locations in proximity to the site in 2019. These include:

- A4095 Upper Campsfield Road.
- A44 Oxford Road.
- A44 Woodstock Road.
- A4095 Grove Road.

3.3.2 The ATC's were undertaken from Thursday 13th June to Wednesday 19th June 2019. A copy of the data is attached at **Appendix B**. A summary of the five-day average flows is summarised in **Table 1** below with the average speeds and 85th percentile speeds summarised in **Table 2**.

Table 1 – Five Day Average Vehicle Flows

	AM Peak (0800-0900)	PM Peak (1700-1800)	AADT
Upper Campsfield Road			
Northeastbound	394	350	4637
Southwestbound	416	424	4615
A44 Oxford Road			
Northwestbound	468	785	7881
Southeastbound	879	530	8456
A44 Woodstock Road			
Northwestbound	795	1352	12441
Southeastbound	1272	745	11886
A4095 Grove Road			
Northeastbound	816	532	7227
Southwestbound	599	1047	7970

Table 1 – Av. Mean Speeds and 85th Percentile Speeds

	Average Speeds	85th Percentile Speeds
Upper Campsfield Road		
Northeastbound	53.7	60.1
Southwestbound	53.3	59.9
A44 Oxford Road		
Northwestbound	42.5	49.7
Southeastbound	42.0	48.9
A44 Woodstock Road		
Northwestbound	55.7	66.4
Southeastbound	58.4	67.8
A4095 Grove Road		
Northeastbound	31.9	35.6
Southwestbound	29.9	34.3

3.3.3 Manual classified turning counts were undertaken at the following locations on Wednesday 4th May 2022:

- Bladon Roundabout and
- A4095 Upper Campsfield Road/ A4260 Banbury Road.

3.3.4 A copy of the data is attached at **Appendix B**.

3.4 Personal Injury Collision Data

3.4.1 Personal injury collision data has been obtained from Oxfordshire County Council for the latest five-year period from 01/01/2017 to 30/04/2022. A copy of the data is

attached at **Appendix C**. The study area includes the A4095 Upper Campsfield Road, Bladon Roundabout, A44 Woodstock Road and A44 Oxford Road.

3.4.2 There were 33 recorded collisions of which one was fatal, five were serious and 27 were slight in severity.

3.4.3 The fatal collision occurred at Bladon roundabout in 2018 and involved a motorcyclist and bus. The driver of the motorbike lost control and hit a bus.

3.4.4 There were eight collisions at Bladon roundabout, of which one was fatal, one was serious, and the remaining were slight. The majority of the collisions involved cars. There were three collisions involving a pedal cyclist.

3.4.5 There were two collisions at the A4095 Upper Campsfield Road/ Shipton Road junction. One collision was serious, and the other was slight. The serious collision involved two cars and the slight collision also involved two cars.

3.4.6 There were two collisions at the A4095 Upper Campsfield Road/ A4260 Banbury Road junction. Both collisions were slight with one involving a car and goods vehicle (under 3.5 tonnes) and the other collision involving two cars.

3.4.7 There were four collisions at the A44 Oxford Road/ Hensington Road/ High Street junction. All four collisions were slight in severity. Two collisions involved a car and pedestrian, one collision involved two cars, and one collision involved a car and pedal cycle.

3.5 Walking

3.5.1 There is a shared pedestrian and cycle path along the south-western side of the A44 Oxford Road. There is no footway on the north-eastern side of the A44 Oxford Road. There are also no footways on the A4095 Upper Campsfield Road.

3.5.2 The existing residential areas to the northwest of the site are typically residential access roads with footways either side of the roadway. These are not uniformly lit rather there is some provision at the potential conflict points e.g. junctions. The area is subject to a 30mph speed limit.

3.6 Cycling

3.6.1 The site is well located to the National Cycle Network which forms a nationwide network of paths and onto which a number of local routes link. National Cycle

Network (NCN) Route 5 runs along the A44 Oxford Road and A44 Woodstock Road to the south of the site. Within Oxfordshire the route is largely off-road, i.e. along segregated paths.

3.6.2 To the north NCN5 runs along the A44 into Woodstock, where it runs on-road through the town centre before re-joining an off-road path northwards up towards Banbury. The route ultimately continues on from Banbury up into Warwickshire. To the south NCN5 runs along the A44 towards Oxford. A short distance before the Frieze Way roundabout the route turns off the A44 across to the A40 and then southwards through Wolvercote and onto the Woodstock Road to the City Centre. Beyond the City Centre the route continues south through Oxfordshire linking to Abingdon, Didcot and then onwards to Reading.

3.6.3 Linking into NCN5 are local cycle paths and routes which are deemed to be preferable for cyclists. At Begbroke for example, there is a spur from NCN5 across to Kidlington where it joins NCN51 which runs from Oxford City Centre to the South, through Kidlington, and northwards up to Bicester and onwards to Milton Keynes and beyond.

3.6.4 The existing cycle routes are shown on **Figure 1**.

3.7 Access to Local Services and Facilities

3.7.1 The centre of Woodstock has a range of local facilities and services including independent stores, churches, post office, pubs, museums, health services. All of these facilities and services are located approximately 1.6km from the centre of the site and hence within around a 15 minute walk.

3.7.2 The nearest convenience store to the site is The Co Op located on the A44 Oxford Road in the centre of Woodstock.

3.7.3 Blenheim Palace is also located in Woodstock and is a designated World Heritage Site. The building and grounds attract visitors from all over the world with various events taking place all year round. Access into the grounds is taken from the A44 Oxford Road.

3.7.4 Leisure facilities are within walking distance of the site, in particular, the Woodstock heated outdoor swimming pool is located to the north-west of the site.

3.7.5 A summary of the local facilities is shown in **Figure 1**.

Education

3.7.6 The nearest primary school to the site is Woodstock Church of England Primary School located on Shipton Road approximately 1.4km from the centre of the site.

3.7.7 The nearest secondary school is Marlborough Church of England School located on Shipton Road, approximately 1km from the centre of the site. Distance to secondary school is therefore closer, and accordingly accessibility much higher than the national average. The majority of pupils are likely to travel independently and therefore walk or cycle.

Employment

3.7.8 Journey to work Origin-Destination statistics as reported by the 2011 Census have been obtained from the Office of National Statistics for the Super Output Area Mid Layer – Cherwell 016. This data provides the broad distribution of workplaces for residents within the study area and their main mode of transport.

3.7.9 The proposed development site is located next to West Oxfordshire 004 Super Output Area Mid Layer and therefore it is important to consider this area in terms of modal share data. The modal share data for both areas is summarised in below together with data on national modal shares.

Table 3 – JTW mode share for Cherwell 016 and West Oxfordshire 004 (2011 Census)

Mode	Cherwell 016	West Oxfordshire 004	England and Wales
Work mainly from home	0.0%	9.7%	9%
Underground	0.0%	0.2%	3%
Train	3.5%	2.8%	4%
Bus/mini-bus	5.4%	8.2%	7%
Motorcycle	0.8%	1.1%	1%
Driving a car	78.0%	55.4%	55%
Passenger in a car	5.9%	6.8%	6%
Taxi/minicab	0.2%	0.0%	1%
Bicycle	2.3%	4.1%	3%
On foot	3.5%	11.4%	10%
Other	0.2%	0.4%	0%
Total	100%	100%	100%

3.7.10 It can be seen from the above data that notwithstanding the relatively small size of Woodstock, that bus use, walking and cycling are higher than the national average that includes the large conurbations including Greater London, Greater Manchester

and the West Midlands Conurbation. Clearly, for new residential development, the main demand for travel to work is in and around the local area itself.

3.7.11 In addition, a good frequency of bus services and access is available along the A44 to provide for longer distance journey to work trips to Oxford and Witney. There is therefore scope to significantly enhance overall modal share for walking, cycling and public transport within the area as a result of development of the site.

3.8 Public Transport Provision

Bus Services

3.8.1 Woodstock is well served by a number of bus services providing high frequency services to Oxford and the surrounding areas. The town is served by bus routes S3, 7, and 233.

3.8.2 Bus service S3 connects Oxford and Chipping Norton. The nearest bus stop to the site is located on the A44 Oxford Road at Park View approximately 800m from the centre of the site. The service provides connections with Oxford's extensive and frequent bus network, and with national and regional train and coach services. North of Woodstock service S3 branches, with routes to Chipping Norton and to Charlbury.

3.8.3 Stagecoach's service 7 provides connections between Oxford and Woodstock. The nearest bus stop to the site is located on the A44 Oxford Road at Park View.

3.8.4 Stagecoach's service 233 provides a connection between Woodstock, Long Hanborough, Witney and Burford on weekdays and Saturday. The nearest bus stop to the site is located on the A44 Oxford Road at Park View.

3.8.5 A summary of service frequencies is presented in **Table 3**.

Table 3 – Bus Service Frequencies

Service	Route	Weekday Peaks	Weekday and Saturday Inter-Peak	Sunday Daytime	Evenings
S3/ NS3	Oxford – Woodstock – Chipping Norton	15-20 minutes	30 minutes	30 minutes	15-60 minutes
7/ N7	Oxford – Woodstock	30 minutes	30 minutes	30 minutes	30-60 minutes
233	Woodstock – Burford	30 minutes	30 minutes	60 minutes	30 minutes

Rail

3.8.6 The regional and national rail network can be accessed at Oxford railway station. This provides frequent train services, typically one or two trains per hour, on weekdays and at weekends to destinations including: the Great Western line to Reading and London; the Cotswold Line to Moreton-in-Marsh, Evesham, Worcester and Hereford; and the CrossCountry network to Surrey and the south coast, e.g. Basingstoke and Bournemouth, to the Midlands including Birmingham and to the north-east, e.g. Leeds and Newcastle, and to the north-west, e.g. Manchester.

3.8.7 Oxford Parkway opened in 2015 providing frequent train services to Oxford and London Marylebone. Water Eaton Park & Ride is located next to the station providing 758 parking spaces.

3.8.8 Bus route 7 provides regular services to Oxford Parkway from Woodstock at a 30-minute frequency. A summary of the rail services is provided in **Table 4**.

Table 4 – Rail services and frequencies from Oxford Parkway Station

Route	Monday to Saturday Frequency	Sunday Service	Journey times
Oxford	30 minutes	30 minutes	7 minutes
London Marylebone	30 minutes	30 minutes	57 minutes -1hr 04 mins

3.8.9 Local train services on the Cotswold line can also be accessed at Hanborough station, around 3.5km from the development site. The station has 235 car parking spaces, 10 Sheffield stands for cycle storage, self-service ticket machines, customer help points and access for the mobility impaired. A summary of the rail services is provided in **Table 5**.

Table 5 – Rail services and frequencies from Hanborough Station

Route	Monday to Saturday Frequency	Sunday Service	Journey times
Oxford	20-60 minutes	60 minutes	9-16 minutes
London Paddington	20-60 minutes	60 minutes	1hr-1hr 15 minutes
Worcester Shrub Hill	25-60 minutes	60 minutes	1hr-1hr 15 minutes

3.9 Accessibility

3.9.1 Woodstock benefits from excellent transport links including public transport, foot and cycle links to adjacent communities and good road links to the principal road network. The need to travel however is significantly reduced by the facilities already available within Woodstock.

4 DEVELOPMENT PROPOSALS

4.1 Introduction

4.1.1 The development proposals are for a residential development of up to 500 dwellings.

4.2 Access Strategy

4.2.1 Vehicular access to the site will be taken from the A4095 Upper Campsfield Road which will provide a link to the new spine road provided within the adjacent Park View Development.

4.2.2 It is proposed the connection to the A4095 will be a roundabout junction to safely accommodate the forecast traffic turning movements whilst also creating a lower speed environment to allow pedestrians and cyclists to cross. The proposed site access is shown on **DTA Drawing 23570-01d**.

4.3 Pedestrians and Cycle Access

4.3.1 The development site will be connected to the A44 Oxford Road, Bladon Roundabout and Park View through a network of 3m wide footways/ cycleways.

4.4 Car and Cycle Parking Provision

4.4.1 Residential parking standards are set out in Oxfordshire's 'Parking Standards for New Residential Development'. The policy document sits under the overarching policies set out in OCC's Local Transport Plan. Outside of the Oxford areas, the standards dictate that for 1 bedroom dwellings, 1 allocated space should be provide, plus an allowance for unallocated parking. For 2+ bedroom dwellings, 2 allocated spaces should be provided, plus an allowance for unallocated parking.

4.4.2 It is envisaged that the development will include a mix of frontage access car parking and garages for the houses.

4.4.3 The larger plots will have garages and adequate parking provision for visitors on plot. The additional unallocated provision will need to be calculated in accordance with OCC standards as they will vary depending on the site layout.

4.4.4 Any additional shortfall in unallocated parking provision can be safely accommodated on-street.

4.4.5 Electric car charging points will also be provided for every dwelling.

4.5 Travel Plan

4.5.1 Travel Plans are management tools designed to minimise the negative impact of travel and transport on the environment. A Travel Plan's aim, through a set of mechanisms, targets and initiatives, is to incorporate transport and other issues into a coordinated strategy. A Travel Plan has been prepared and is provided under a separate cover.

5 TRIP GENERATION AND DISTRIBUTION

5.1 Residential Trip Generation

5.1.1 The residential trip rates have been taken from the proposed residential development on Land at Hill Rise. The trip rates for the Land at Hill Rise application were agreed with the highway authority and are considered appropriate for use for this site. The person and vehicle trip rates are presented in **Table 6** below. The TRICS outputs are attached at **Appendix D**.

Table 6 – TRICS assessment for 'private housing' (trips/ dwelling)

Time Range	Person Trip Rate			Vehicle Trip Rate		
	In	Out	Total	In	Out	Total
AM Peak (08:00 – 09:00)	0.256	0.720	0.976	0.161	0.374	0.535
PM Peak (17:00 – 18:00)	0.515	0.339	0.854	0.336	0.210	0.546
12 Hour (07:00 – 19:00)	3.945	4.094	8.039	2.352	2.423	4.775

5.1.2 A summary of the total development generated person and vehicle trips relating to the site is presented in **Table 7**.

Table 7 – Person and Vehicle Trips – 500 Dwellings

Time Range	Person Trip Generation			Vehicle Trip Generation		
	In	Out	Total	In	Out	Total
AM Peak (08:00 – 09:00)	128	360	488	81	187	268
PM Peak (17:00 – 18:00)	258	170	428	168	105	273
12 Hour (07:00 – 19:00)	1,972	2,047	4,018	1,176	1,212	2,388

5.2 Traffic Distribution and Assignment

5.2.1 The proposed residential traffic generation has been distributed using Census Journey to Work data (2011) for the Super Middle Output Area of West Oxfordshire 004. A breakdown of the distribution trips from this area is summarised in **Table 8** below and set out in **Appendix E**. The distribution and traffic generation is shown on **Figure 2**.

Table 8 – Proposed residential trip distribution

Destination	Percentage
West Oxfordshire 004	20%
West Oxfordshire – remaining areas	20%
Oxford	34%
Cherwell	18%
Vale of White Horse	5%
South Oxfordshire	1%
Other – Westminster, Stratford-upon-Avon, City of London, Milton Keynes, Wycombe, Aylesbury Vale	2%
Total	100%

5.2.2 Using Google maps to ascertain the most direct route to the destinations, the distribution of trips by the key routes in the area are set out in **Table 9** below.

Table 9 – Residential vehicle trip assignment

Route	Percentage	AM Peak (Two-Way)	PM Peak (Two-Way)
A4095 Upper Campsfield Road North	4%	11	11
A4095 Upper Campsfield Road South	96%	254	259
A4095 Grove Road	17%	46	46
A4260 Banbury Road	1%	3	3
A44 Oxford Road	14%	38	38
A44 Woodstock Road	64%	172	175
• A34 North	6%	16	16
• A34 South	22%	59	60
• A40 (Oxford)	11%	29	30
• A40 East	15%	40	41
• Frieze Way	0%	0	0
• Kidlington	10%	27	27
Shipton Road	0%	0	0
Total	100%	268	273

6 TRAFFIC IMPACT

6.1 Future Baseline Traffic Flows and Cumulative Development

6.1.1 In accordance with DfT Guidance, the 2019 base traffic flows have been factored up to a future year of 2027, which is 5 years following submission of the planning application. A future year assessment of 2031 has also been undertaken which represents end of the Local Plan. Local TEMPRO growth factors have been used for West Oxfordshire 004 (E02005998). The resulting factors are shown in **Table 10**.

Table 10 – TEMPRO Growth Factors

Year	AM Peak	PM Peak
2019-2027	1.0420	1.0439
2019-2031	1.0675	1.0717

6.2 Committed Development Sites

6.2.1 There are a number of committed development sites in the vicinity of the proposed site to consider within the assessment. These are:

- Land North of Hill Rise, Woodstock (application reference: 21/00189/FUL): up to 180 dwellings, 120 m2 of community space, parking barns and public open space.
- Land North of Banbury Road, Woodstock (application reference: 21/00217/OUT): up to 250 dwellings, 195 m2 of community space, parking barns and public open space.
- Land North of Witney Road, Long Hanborough (application reference: 22/01330/OUT): up to 150 dwellings.

6.2.2 The committed development flows are shown on **Figure 3**.

Land North of Hill Rise, Woodstock

6.2.3 This application is currently under consideration. The Transport Assessment was prepared by DTA. Traffic flows through Woodstock are presented in **Table 11** below.

Table 11 – Land North of Hill Rise – 180 dwellings

Time Period	Arrival	Departure	Two-Way
08:00-09:00	29	67	96
17:00-18:00	60	38	98

Land North of Banbury Road

6.2.4 This application is currently under consideration. The Transport Assessment was prepared by DTA. Traffic flows through Woodstock are presented in **Table 12** below.

Table 12 – Land North of Banbury Road – 250 dwellings

Time Period	Arrival	Departure	Two-Way
08:00-09:00	40	94	134
17:00-18:00	84	53	137

Land North of Witney Road, Long Hanborough

6.2.5 An application for this site was submitted in May 2022. The Transport Assessment was prepared by DTA. Traffic flows through Woodstock are presented in **Table 13**.

Table 13 – Land North of Witney Road, Long Hanborough – 150 dwellings

Time Period	Arrival	Departure	Two-Way
08:00-09:00	11	21	32
17:00-18:00	18	11	29

6.3 Junction Assessments

6.3.1 For the operational assessment of the junctions industry standard software package has been used. Junctions 10 has the functionality to model both priority controlled 'T' junctions and roundabout junctions. The geometric parameters have been measured using OS detailed mapping.

6.3.2 The following junctions have been assessed:

- Proposed Site Access.
- A44 Oxford Road/ A44 Woodstock/ A4095 – Bladon Roundabout.
- A4095 Upper Campsfield Road/ A4260 Banbury Road.
- A44 Oxford Street/ Hensington Road/ High Street.

6.3.3 For robustness the junction assessments do not take account of reduction in flows through travel planning measures. The following scenarios have been modelled:

- 2022 Base.
- 2027 Base.
- 2027 Base + Committed Development.
- 2027 Base + Committed Development + Development.
- 2031 Base.
- 2031 Base + Committed Development.
- 2031 Base + Committed Development + Development.

Proposed Site Access

6.3.4 The proposed site access junction would be a 3-arm roundabout junction with an inscribed circular diameter of 45m. This roundabout has been modelled in the Arcady module of Junctions 10. The results are summarised in **Table 14** below and the outputs are attached at **Appendix F**.

Table 14 – Proposed Site Access Junction Modelling Results

Arm	AM			PM		
	Queue	Delay (sec)	RFC	Queue	Delay (sec)	RFC
2027 Base + Committed Development + Development						
A4095 (N)	1.7	10.41	0.61	1.7	9.97	0.63
A4095 (S)	0.7	3.60	0.40	0.9	3.92	0.46
Site Access	0.3	6.16	0.23	0.2	5.58	0.13
2031 Base + Committed Development + Development						
A4095 (N)	2.3	12.75	0.68	1.8	10.41	0.64
A4095 (S)	0.7	3.65	0.41	0.9	3.99	0.47
Site Access	0.3	6.24	0.23	0.2	5.65	0.13

6.3.5 The results of the junction modelling shows that the proposed site access roundabout is forecast to operate within capacity on all arms during the morning and evening peaks in the 2027 and 2031 scenario.

A44 Oxford Road / A44 Woodstock Road / A4095 – Bladon Roundabout

6.3.6 This junction is a four-arm priority roundabout, with the A44 Oxford Road comprising the north-west arm, the A44 Woodstock Road the south-east arm, the A4095 Upper Campsfield Road the north arm and the A4095 Bladon Road the south arm.

6.3.7 There are proposals to improve the flare length and kerb radii on the A4095 Bladon Road arm and increase the flare length on the A44 Woodstock Road (n) arm as part of the consent for Land East of Woodstock (Park View) (Ref: 16/01364/OUT). The improvements are shown on **DTA Drawing 15291-26b**.

6.3.8 The junction has been modelled in the 2026 and 2031 assessment to reflect these improvements and the junction assessment outputs are attached at **Appendix F** and the results summarised in the **Table 15** below.

Table 15 – Junction Modelling Results – Bladon Roundabout

Arm	AM Peak (0800-0900)			PM Peak (1700-1800)		
	Queue	Delay(s)	RFC	Queue	Delay(s)	RFC
2022 Base						
A4095	2.8	16.72	0.75	0.8	5.88	0.44
A44 Woodstock Road (S)	0.9	3.53	0.48	2.2	5.40	0.69
A4095 Bladon Road	1.3	5.91	0.57	1.0	5.41	0.51
A44 Oxford Road (N)	2.2	8.24	0.70	0.8	4.21	0.44
2027 Base						
A4095	3.3	19.14	0.78	0.8	6.10	0.45
A44 Woodstock Road (S)	1.0	3.63	0.50	2.4	5.77	0.71
A4095 Bladon Road	1.4	6.19	0.58	1.1	5.65	0.52
A44 Oxford Road (N)	2.5	8.93	0.72	0.8	4.35	0.45
2027 Base + Committed Development						
A4095	6.2	34.13	0.88	1.0	6.68	0.49
A44 Woodstock Road (S)	1.1	3.87	0.52	3.0	6.92	0.75
A4095 Bladon Road	1.5	6.60	0.60	1.3	6.39	0.56
A44 Oxford Road (N)	3.5	11.63	0.78	1.0	4.76	0.49
2027 Base + Committed Development + Development						
A4095	44.5	169.85	1.09	1.4	8.12	0.58
A44 Woodstock Road (S)	1.2	4.12	0.55	4.3	9.29	0.82
A4095 Bladon Road	1.7	7.16	0.63	1.6	7.62	0.62
A44 Oxford Road (N)	3.9	13.30	0.80	1.1	5.32	0.52
2031 Base						
A4095	4.0	22.66	0.81	0.9	6.37	0.47
A44 Woodstock Road (S)	1.0	3.75	0.51	2.6	6.24	0.73
A4095 Bladon Road	1.5	6.52	0.60	1.2	5.95	0.54
A44 Oxford Road (N)	2.8	9.89	0.74	0.9	4.53	0.47
2031 Base + Committed Development						
A4095	8.3	45.09	0.92	1.0	7.01	0.51

A44 Woodstock Road (S)	1.2	4.01	0.54	3.4	7.62	0.78
A4095 Bladon Road	1.6	7.00	0.62	1.4	6.77	0.58
A44 Oxford Road (N)	4.0	13.29	0.81	1.0	4.97	0.51
2031 Base + Committed Development + Development						
A4095	57.7	214.91	1.13	1.5	8.61	0.60
A44 Woodstock Road (S)	1.3	4.23	0.57	5.0	10.58	0.84
A4095 Bladon Road	1.8	7.59	0.65	1.7	8.16	0.64
A44 Oxford Road (N)	4.6	15.41	0.83	1.1	5.57	0.54

6.3.9 The above assessment show that there are periods when the junction will be operating at capacity during the peak hour periods and that additional capacity will be required to accommodate existing traffic, growth and the traffic from the proposed development. Accordingly, it is proposed to signalise the A4095 Bladon Road entry and the A44 entries as shown on **DTA Drawing 15291-14**. This offers significant benefits in terms of throughput by allowing a more even balancing of flows at the entries making better use of the existing road space. Moreover, the signal control lanes have inherently more capacity than priority-controlled lanes as the flow rate is not constrained by individual gap acceptance judgments and the formation of traffic into platoons narrows the headway between vehicles. The platooning of traffic on the approaches does require localised changes to the geometry on the approaches including additional widening on approaches and merges.

6.3.10 In addition to improving the throughput of this junction, the traffic signals should better manage the conflicts at this location and thereby improve the safety performance of this junction. The signalisation will also improve pedestrian connectivity allowing new pedestrian routes across the A44 with controlled crossing points. These crossings will operate on the basis of walk with traffic. As such the crossings will be called every cycle of the traffic signals. The results of the model is attached at **Appendix F**.

Table 16 – Junction Modelling Results – Bladon Roundabout

	AM		PM	
	Practical Reserve Capacity	Total Network Delay	Practical Reserve Capacity	Total Network Delay
2031 Base + Committed Development + Development				
Signal Option	33.9	21.10	14.1	22.13

6.3.11 As can be seen in the table above the junction operates with good levels of practical reserve capacity in both the AM and PM peak hour periods. The proposed signal junction arrangement would significantly reduce delay and queuing on all arms when compared against the existing roundabout layout.

A4095 Upper Campsfield Road/ A4260 Banbury Road

6.3.12 The A4095 Upper Campsfield Road/ A4260 Banbury Road is a priority controlled T-junction with a ghost island right turn lane. This junction has been assessed in the Arcady module of Junctions 10. The results are summarised in **Table 17** below and the outputs are attached at **Appendix F**.

Table 17 – A4095 Upper Campsfield Road/ A4260 Banbury Road Junction Modelling Results

Arm	AM			PM		
	Queue	Delay (sec)	RFC	Queue	Delay (sec)	RFC
2022 Base						
A4095 Left Turn Out	2.3	16.76	0.69	3.6	25.64	0.79
A4095 Right Turn Out	0.0	23.30	0.02	0.0	26.69	0.02
A4260 Right Turn In	2.0	11.78	0.65	1.1	8.91	0.53
2027 Base						
A4095 Left Turn Out	2.5	17.67	0.70	4.1	28.74	0.81
A4095 Right Turn Out	0.0	24.85	0.02	0.0	31.11	0.03
A4260 Right Turn In	2.1	12.34	0.67	1.2	9.23	0.55
2027 Base + Development						
A4095 Left Turn Out	2.6	18.39	0.71	4.3	29.95	0.82
A4095 Right Turn Out	0.0	25.74	0.02	0.0	32.93	0.03
A4260 Right Turn In	2.2	12.47	0.67	1.3	9.44	0.56
2031 Base						
A4095 Left Turn Out	2.7	18.89	0.72	4.8	33.01	0.84
A4095 Right Turn Out	0.0	26.94	0.02	0.0	37.80	0.03
A4260 Right Turn In	2.3	13.03	0.68	1.3	9.64	0.56
2031 Base + Development						
A4095 Left Turn Out	2.9	19.71	0.73	5.1	34.56	0.85
A4095 Right Turn Out	0.0	28.02	0.02	0.0	40.61	0.04
A4260 Right Turn In	2.3	13.17	0.69	1.3	9.83	0.57

6.3.13 The results of the modelling shows the junction is forecast to operate within capacity on all arms during the morning and evening peak in the future year assessments.

A44 Oxford Street / Hensington Road / High Street

6.3.14 This junction is a four-arm priority crossroads, with the A44 Oxford Street comprising of the northern and southern arms, Hensington Road the eastern arm and High Street the western arm. This junction has been modelled in the Picady module of Junctions 9 software. The results of the junction assessment are summarised in **Table 18** below and the outputs are attached at **Appendix F**.

Table 18 – A44 Oxford Street/ Hensington Road/ High Street Junction Modelling Results

Arm	AM Peak (0800-0900)			PM Peak (1700-1800)		
	Queue	Delay (sec)	RFC	Queue	Delay (sec)	RFC
2022 Base						
High Str	0.2	17.06	0.18	0.5	23.65	0.33
A44 (S)	0.7	5.90	0.22	1.4	5.17	0.37
Hensington Rd	1.2	26.07	0.54	0.7	17.60	0.40
A44 (N)	0.0	7.55	0.04	0.1	9.17	0.06
2027 Base						
High Str	0.2	17.82	0.19	0.5	24.65	0.34
A44 (S)	0.7	5.94	0.22	1.3	4.96	0.35
Hensington Rd	1.3	28.13	0.57	0.7	18.41	0.42
A44 (N)	0.0	7.57	0.04	0.1	9.21	0.06
2027 Base + Committed Development						
High Str	0.3	20.57	0.24	0.8	33.27	0.46
A44 (S)	1.0	6.37	0.28	2.3	6.07	0.48
Hensington Rd	2.7	49.43	0.74	1.0	23.67	0.52
A44 (N)	0.1	7.55	0.06	0.1	9.66	0.07
2027 Base + Committed Development + Development						
High Str	0.3	21.69	0.25	0.9	35.75	0.48
A44 (S)	1.0	6.31	0.29	2.4	6.22	0.50
Hensington Rd	2.9	54.14	0.76	1.1	25.18	0.53
A44 (N)	0.1	7.63	0.06	0.1	9.72	0.07
2031 Base						
High Str	0.3	18.59	0.20	0.6	26.84	0.37
A44 (S)	0.8	6.00	0.24	1.5	5.10	0.38
Hensington Rd	1.4	30.57	0.59	0.8	19.49	0.44
A44 (N)	0.1	7.61	0.04	0.1	9.34	0.07
2031 Base + Committed Development						
High Str	0.4	21.78	0.26	1.0	37.15	0.49
A44 (S)	1.0	6.47	0.30	2.5	6.35	0.51
Hensington Rd	3.2	59.06	0.78	1.1	25.44	0.54
A44 (N)	0.1	7.58	0.06	0.1	9.80	0.07
2031 Base + Committed Development + Development						
High Str	0.4	23.40	0.27	1.0	40.42	0.52
A44 (S)	1.1	6.41	0.31	2.7	6.54	0.53
Hensington Rd	3.6	66.20	0.81	1.2	27.33	0.56
A44 (N)	0.1	7.66	0.06	0.1	9.85	0.07

6.3.15 The results of the modelling shows the junction is forecast to operate within capacity on all arms during the morning and evening peak in the future year assessments.

6.4 Summary

6.4.1 The results of the junction modelling have demonstrated that the junctions modelled are forecast to operate within capacity in the 2027 and 2031 assessment scenarios with the addition of the development flows.

6.4.2 The Bladon roundabout is forecast to operate at capacity in the 2031 assessment year with the addition of committed development schemes and the proposed development. It is proposed to signalise the A4095 Bladon Road entry and the A44 entries, and this offers significant benefits in terms of throughput by allowing a more even balancing of flows at the entries making better use of the existing road space.

6.5 A44 Corridor Strategy

6.5.1 Cherwell District Council, OCC, Blenheim Estates, Begbroke Tripartite, and Merton College have, since 2018, been working co-operatively on transport issues relating to the A44 corridor and, at a strategic level, the sites allocated for residential development in the Cherwell Local Plan.

6.5.2 The Transport Statement Common Ground prepared by all parties sets out transport options and improvements that would benefit the A44 corridor and serve the proposed allocation sites in a holistic way.

6.5.3 There are opportunities to build upon and enhance the current sustainable transport networks to ensure their use is prioritised and maximised. These measures have been developed by OCC and comprise:

- A Park and Ride at London-Oxford airport.
- Public Transport priority works along the A44 corridor.
- Enhanced public transport services along the A44 corridor.

- A shared use path for pedestrians and cyclists along the A44 with signalised crossings.

- Closure of Sandy Lane to through traffic and enhancements to assist its use by pedestrian and cyclists connecting between the A44 corridor and Kidlington.

6.5.4 The outcome of this work is reflected in the Local Plan Policy PR4A which sets out a contribution strategy for all development along the A44 corridor to provide an area wide solution. The Applicant is willing to provide an appropriate contribution towards wider strategic highway infrastructure along the A44 corridor and the development is wholly compatible with Policy PR4A.

7 SUMMARY AND CONCLUSIONS

7.1 This Transport Assessment has reviewed the highways and transport implications of the proposed residential development on land to the east of Park View, Woodstock.

7.2 The proposed site is located in an accessible location close to amenities and facilities within Woodstock. The centre of Woodstock has a range of local facilities and services including independent stores, churches, post office, pubs, museums, health services.

7.3 The A44 running through Woodstock has shared walk/ cycle provision and access to bus services providing linkages to Oxford, Woodstock and Witney.

7.4 The traffic generation has been estimated using the trip rates from the Land at Hill Rise residential development and distributed onto the local network. Future year traffic forecasts also include wider development growth. This has informed the design of the accesses and the appraisal of the off-site impact. Accordingly, the operation of key junctions within the local road network have been modelled which shows that there is adequate capacity to accommodate the additional traffic generation.

7.5 The Bladon Roundabout is forecast to operate over capacity in the 2031 future with committed development and with the development proposals. It is proposed to signalise the A4095 Bladon Road entry and the A44 entries, and this offers significant benefits in terms of throughput by allowing a more even balancing of flows at the entries making better use of the existing road space. The Applicant is willing to provide an appropriate contribution towards wider strategic highway infrastructure along the A44 corridor.

7.6 The proposals include a new access junction with the A4095 Upper Campsfield Road via a priority roundabout arrangement. Pedestrian and cycle access will be provided throughout the site and the development site will be connected to the A44 Oxford Road, Bladon Roundabout and Park View through a series of 3m wide hoggin footways/ cycleways.

7.7 Parking provision on site is provided in accordance with parking standards set by the Local Authority.

7.8 A Travel Plan has been produced as part of the application, in order to encourage more sustainable travel for residents. This has been submitted under a separate cover.

7.9 Overall, suitable access can be achieved and that the impact on the local roads will not be severe in accordance with NPPF paragraph 111.

23570-01a TRANSPORT ASSESSMENT REPORT END OF PART ONE