



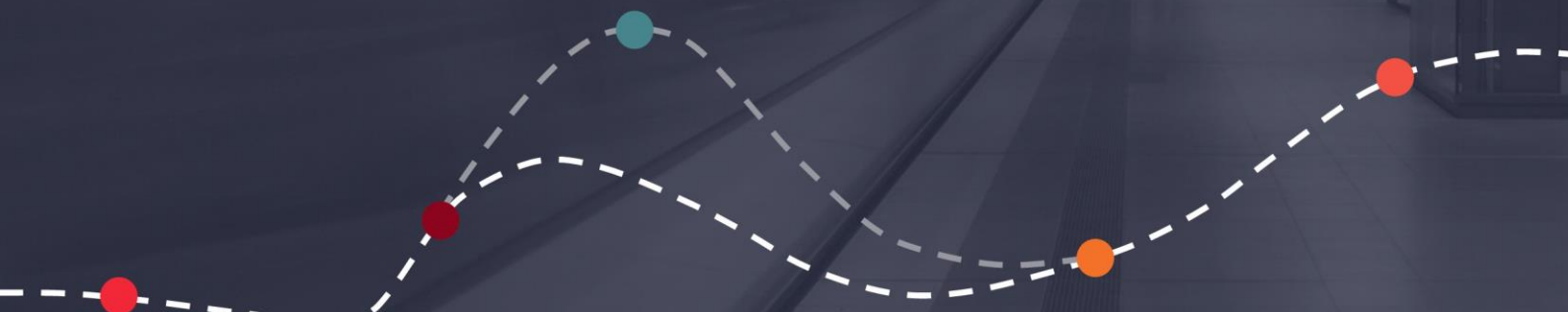
A Planning Application by
HILL RESIDENTIAL LIMITED

In respect of
**Bicester Road,
KIDLINGTON**

Transport Statement

Part 1 of 5 – Report

December 2022





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Document Management

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^b Updated Masterplan
^c Updates to parking numbers

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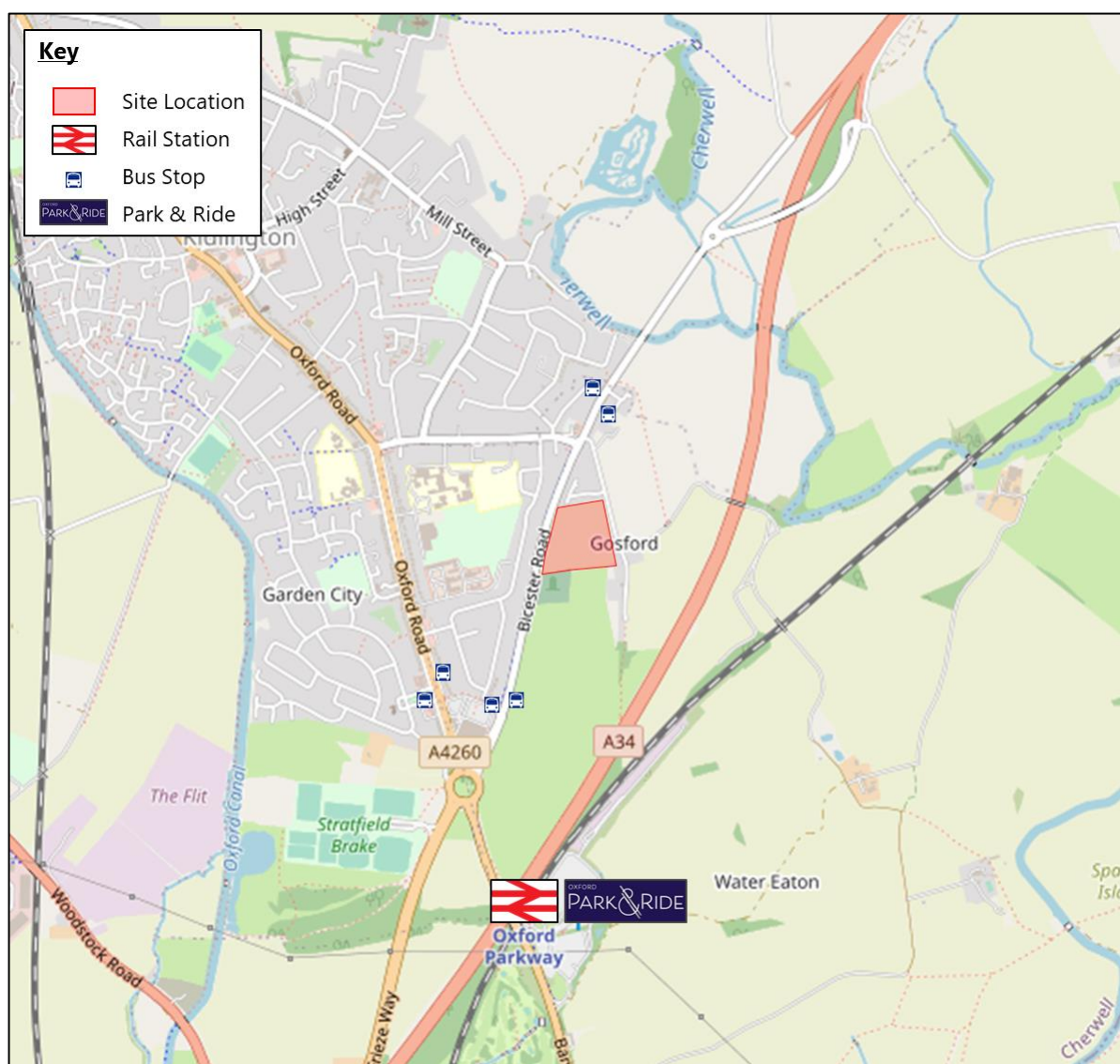
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1 Introduction

- 1.1 Transport Planning Associates (TPA) has been commissioned by Hill Residential Limited to provide transport planning consultancy services in relation to a proposed residential development on land to the east of Bicester Road, Kidlington.
- 1.2 The site, which totals approximately four hectares, is located on the eastern side of Bicester Road in Kidlington, a village in the Cherwell District of Oxfordshire. The village is located 7km north of Oxford city centre, 12km southwest of Bicester and 14km east of Witney. The site location in the context of the local highway and transport networks is illustrated in **Figure 1.1**.

Figure 1.1 Site Location Plan



Source: ©OpenStreetMap-contributors

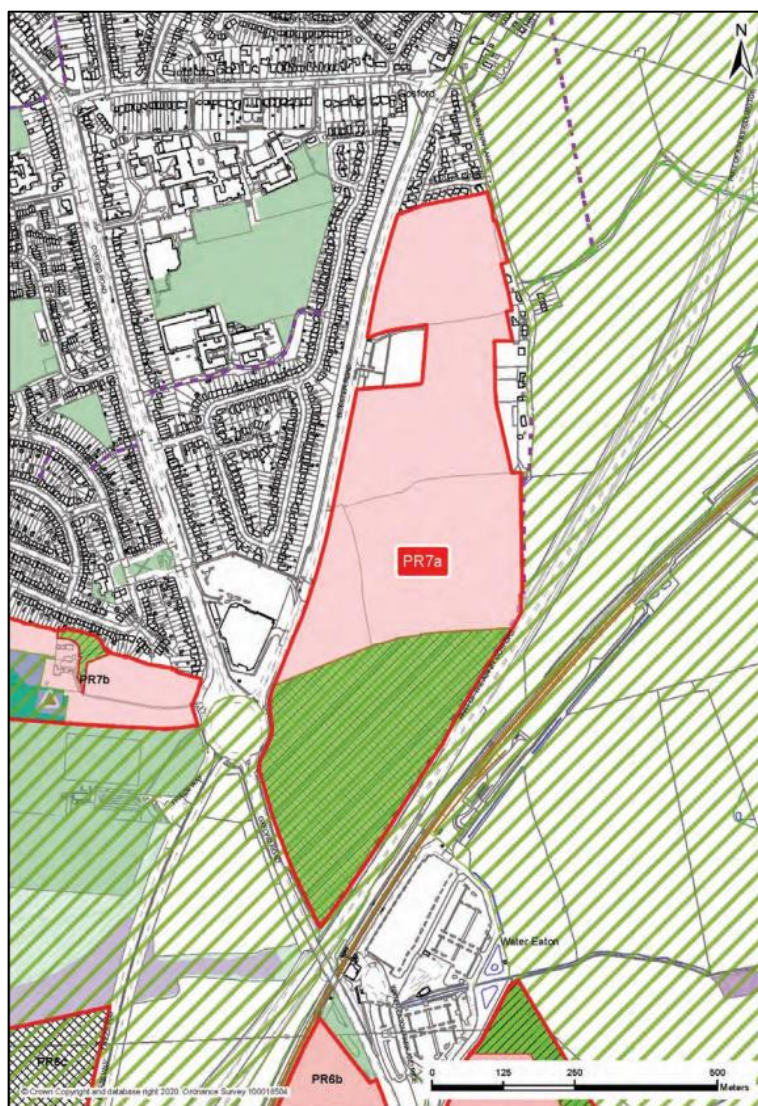
Note: site location approximated

1.3 The development proposals will replace the existing field with a residential development consisting of 96 dwellings along with suitable access for vehicles, pedestrians and cyclists as well as landscaping. In addition, a pedestrian, cycle and highway link to the southern parcel of the allocation will be provided along the site’s southern boundary.

Site Allocation

1.4 The proposed site is allocated as a ‘Strategic Development Site’ within the Cherwell Local Plan 2011-2031 (2020) and forms part of Policy PR7a, Land South East of Kidlington. The PR7a allocation will provide an extension to Kidlington through the provision of approximately 430 dwellings. The location of the site allocation is shown in **Figure 1.2** below, with the proposed development site forming the northern parcel of the PR7a allocation site.

Figure 1.2 PR7a Site Allocation



Source: Cherwell District Local Plan (2020)

- 1.5 It is noted that within Cherwell District Councils Development Brief for the PR7a allocation that the site-specific vision for the development is as follows:

"The development site will become an extension to Kidlington that will be fully integrated and connected with the surrounding built environment. It will provide an attractive residential neighbourhood, with high-quality, publicly accessible and well-connected green infrastructure and a modern, highly functioning outdoor sports facility. The development will maximise opportunities for walking, cycling and wheelchair use and will connect to sustainable movement routes towards Oxford Parkway Station, Kidlington, Oxford and Begbroke and existing footpaths."¹

- 1.6 An application for the southern parcel of the PR7a allocation site was submitted in March 2022, the application (Reference Number: 22/00747/OUT) is for:

"Outline planning application for the development of up to 370 homes, public open space (including play areas and woodland planting), sports pitches and pavilion, drainage and engineering works, with all matters reserved (appearance, landscaping, layout and scale) except for vehicular and emergency accesses to Bicester Road."

- 1.7 At this stage, the application has not been determined.

Pre-Application

- 1.8 Pre-application advice² was sought from Oxfordshire County Council (OCC), the Local Highway Authority, in respect of a detailed planning application for a 96-unit residential scheme. A Scoping Note³ was prepared and provided to OCC with the relevant background information in respect of the site and the anticipated methodology for the works.
- 1.9 In response to the request for advice and the submitted Scoping Note, OCC provided a pre-application response on 28 August 2022. This response is attached in **Appendix A** for ease of reference. Following the formal response, a pre-application meeting with OCC was held, with this taking place on 21 October 2022.
- 1.10 This Transport Statement, where required, will address the response and provide further clarifications on the points raised both within the response and at the meeting.

¹ Executive Summary. PR7a Land South East of Kidlington Development Brief. Cherwell District Council. June 2022.

² Application Number: 22/CH0015/Preapp

³ TPA Reference: 1704-10 TN02

Scope of Report

- 1.11 This Transport Statement has been prepared in support of the detailed planning application for the development of 96 residential dwellings at Bicester Road, Kidlington. The Transport Statement considers the likely transport and highways impact of the proposed development on the local transport and highway networks.
- 1.12 The Transport Statement will be structured thus:
- **Chapter 2** – sets out the Baseline Transport Conditions around the site;
 - **Chapter 3** – sets out the Car and Cycle Parking Standards;
 - **Chapter 4** – confirms the Development Proposals and sets out the proposed access and parking arrangements;
 - **Chapter 5** – reviews the likely Development Impact of the proposed development; and
 - **Chapter 6** – sets out the Summary and Conclusions of the report.

Report Conclusions

- 1.13 This Transport Statement concludes that the proposed development is located in a highly sustainable location and can be accessed through walking, cycling and public transport services. The proposals will have a minimal impact on the local highway network. As such, it is considered that there are no transport and highways reasons for the refusal of the planning application.

2 Baseline Transport Conditions

Site Location

- 2.1 The site is located on the eastern edge of Kidlington, a village in the Cherwell District of Oxfordshire. The site is bound by the residential properties of Beagles Close to the north, Water Eaton Lane to the east, a cemetery and green field to the south and Bicester Road to the west.
- 2.2 As outlined previously, the village of Kidlington is located 7km north of Oxford city centre, 12km southwest of Bicester and 14km east of Witney.

Site Access

- 2.3 Access to the site is currently via an informal agricultural access from Water Eaton Lane. The access, which has a width of approximately 4m, is located in the north-western corner of the site, approximately 20m to the south of the Beagles Close / Water Eaton Lane priority junction.

Existing Pedestrian Infrastructure

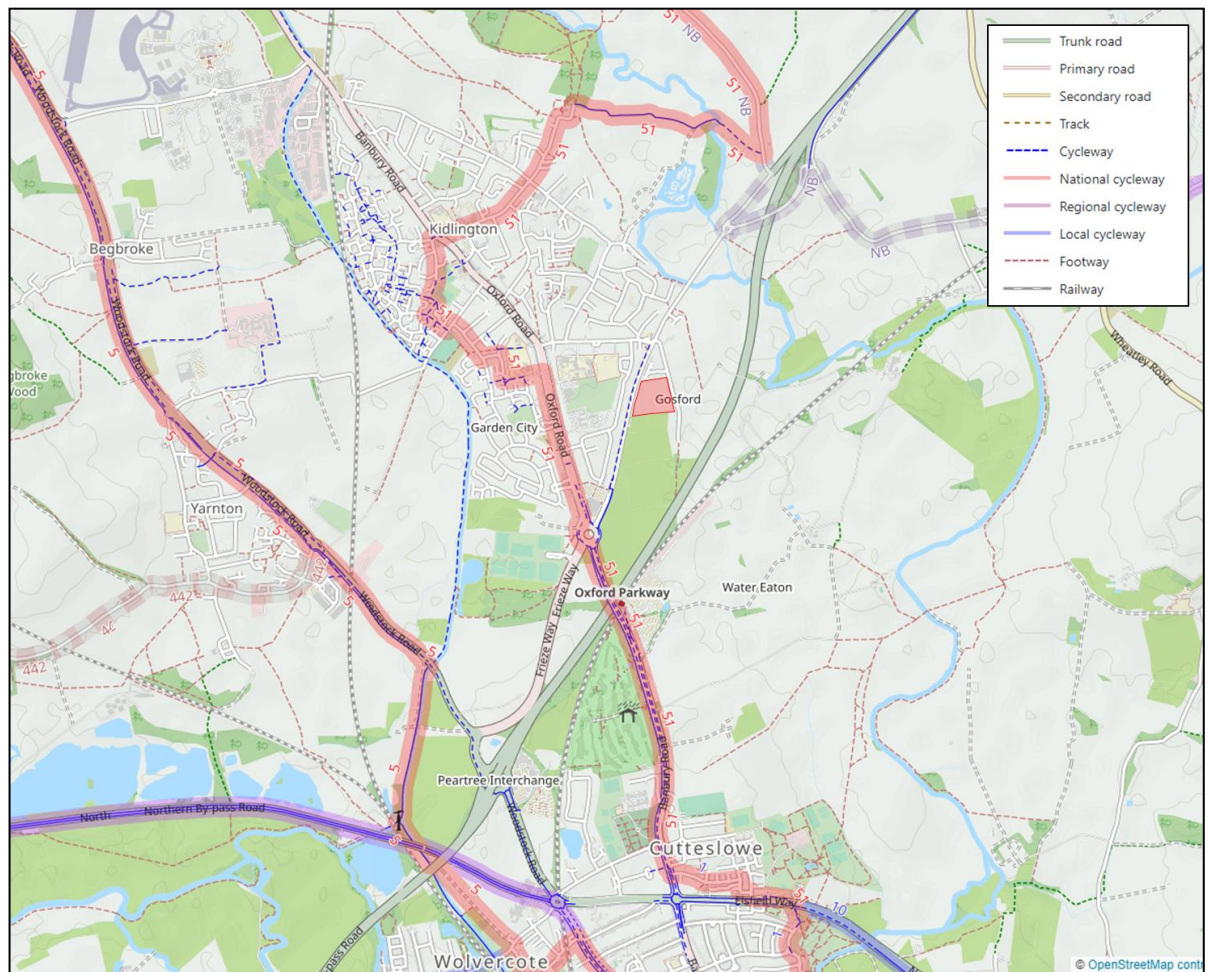
- 2.4 There is a shared footway / cycleway provided along the western side of Bicester Road, which has a width of approximately 3m and runs from the Sainsbury Supermarket at the Bicester Road / A4260 / Oxford Road roundabout, to the south, to the Bicester Road / Water Eaton Lane signal junction, to the north.
- 2.5 To the south, the shared footway / cycleway on Bicester Road provides a link to a Sainsbury's supermarket. There is also a signalised crossing located approximately 550m to the south of the site on Bicester Road which provides access to a footway on the eastern side of Bicester Road, which later becomes a shared footway / cycleway providing a connection to Oxford Parkway Rail Station and Oxford Parkway Park & Ride.
- 2.6 In addition, the footway / cycleway on Bicester Road provides access to a public footpath which in turn, provides a link to the services and facilities located on Oxford Road (A4260).
- 2.7 To the north, the shared footway / cycleway on the western side of Bicester Road provides a link to the local bus stops, schools, village centre and the wider network of footways located in Kidlington. Access to the wider network of footways is facilitated through the provision of informal crossing points, which benefit from dropped kerbs and / or tactile paving.

- 2.8 Street lighting is provided within the confines of the village, for the convenience and safety of pedestrians.

Existing Cycling Infrastructure

- 2.9 As outlined previously, a shared footway / cycleway is provided along the western side of Bicester Road. Approximately 800m to the south of the site the shared footway / cycleway provides a connection to National Cycleway Route (NCR) 51.
- 2.10 NCR 51 is a long-distance cycle route, which runs from Oxford to Felixstowe, via Bicester, Milton Keynes, Bedford, Cambridge, Bury St Edmunds and Ipswich. Within the local area, NCR 51 provides connections to Oxford City Centre, Summertown, Oxford Parkway, Blechington and Bicester Village.
- 2.11 Within approximately 5km of the site, in Yarnton, cyclists can access NCR 5 which runs between Reading and North Wales and NCR 442 which runs between Yarton and Honeybourne. The two additional NCRs provide connections to Hanborough, Woodstock, Bloxham and Banbury.
- 2.12 Cycle parking is provided within Kidlington village centre, at Oxford Parkway Park Rail Station and Oxford Parkway Park & Ride and within Woodstock, Summertown and Oxford, all of which are located within an acceptable cycle distance of the site.
- 2.13 The local cycle network is outlined in **Figure 2.1**.

Figure 2.1 Local Cycle Network



Source: © OpenStreetMap Contributors

Local Amenities

- 2.14 The National Design Guide, 2019, suggests that walkable neighbourhoods should be within walking distance of local facilities, which is generally ***“considered to be no more than a 10-minute walk (800m radius).”***
- 2.15 Manual for Streets suggests that ***“walkable neighbourhoods are typically characterised as having a range of facilities within 10 minutes (up to about 800m) walking distance of residential areas... However, this is not an upper limit and... walking offers the greatest potential to replace car trips, particularly those under 2km.”***
- 2.16 The Institute of Highway and Transportation’s *‘Providing for Journeys on Foot, 2000’* suggests that walking distances will vary depending on the journey purpose and outlines these distances, which are reproduced in **Table 2.1**.

Table 2.1 CIHT Suggests Acceptable Walking Distance

	Town Centres	Commuting / School	Elsewhere
Desirable	200m	500m	400m
Acceptable	400m	1,000m	800m
Preferred Maximum	800m	2,000m	1,200m

Source: Table 3.2 of the Institution of Highways & Transportation (CIHT) publication 'Providing for Journeys on Foot, 2000'

2.17 In addition, the Chartered Institute of Transportation’s publication ‘Planning for Walking 2015’ sets out that:

“Most people will only walk if their destination is less than a mile away. Land use patterns most conducive to walking are thus mixed in use and resemble patchworks of “walkable neighbourhoods,” with a typical catchment of around 800m, or 10 minutes’ walk”⁴

2.18 The bicycle is an effective mode of transport for short trips up to five to eight kilometres (approximately 20 – 35 minutes)⁵. Sustrans has identified a maximum distance at which daily commutes could be undertaken by cycle as:

“We know that in some areas most people are unlikely to walk for more than 2 km (1.2 miles), but are most likely to cycle between 2 (1.2 miles) and 5 km (3.1 miles) for their daily commute.”⁶

2.19 The bicycle is an effective mode of transport for short trips up to five to eight kilometres (approximately 20 – 35 minutes)⁷. Sustrans has identified a maximum distance which at daily commutes could be undertaken by cycle as:

“We know that in some areas most people are unlikely to walk for more than 2 km (1.2 miles), but are most likely to cycle between 2 (1.2 miles) and 5 km (3.1 miles) for their daily commute.”⁸

2.20 As such, it is reasonable to allow differing distances based on age, mobility issues, journey type, nature of the local facility and local topography. The distance to local facilities and services are measured from the centre of the site and set out in **Table 2.2**.

⁴ Page 29, Chartered Institute for Highways and Transportation’s Planning for Walking (2015)

⁵ Changing Journeys to Work, An Employers Guide to Green Commuter Plans, Transport (2000)

⁶ <https://www.sustrans.org.uk/blog/how-transport-modelling-helps-us-plan-cycle-friendly-cities>

⁷ Changing Journeys to Work, An Employers Guide to Green Commuter Plans, Transport (2000)

⁸ <https://www.sustrans.org.uk/blog/how-transport-modelling-helps-us-plan-cycle-friendly-cities>

Table 2.2 Local Amenities

	Amenity	Distance
Transport	King Arms Bus Stops	590m
	Bicester Road Bus Stops	720m
	Oxford Parkway Rail Station	1.5km
	Oxford Parkway Park & Ride	1.5km
Shopping & Leisure Facilities	Miller & Carter Public House	450m
	Sainsbury's	815m
	Oxford Road Local Centre <i>(Parade Pharmacy, Post Office, Newsagents, Barbers, Pet Shop Convenience Store)</i>	950m
	Gosford Hill Medical Centre	1.2km
	Kidlington & Gosford Leisure Centre	1.2km
	Coop Convenience Store	1.3km
	Exeter Hall. Recreation Ground, Health Centre and Pharmacy	1.7km
	Village Centre <i>(Library, Tesco Superstore, Post Office, Multiple Banks, Restaurants, Non-food retail, pubs and restaurants)</i>	1.8km
Educational Facilities	Edward Field Primary School	750m
	Gosford Hill School	1km
	St Thomas More Catholic Primary School	1.2km
	West Kidlington Nursery School	1.3km
	West Kidlington Primary School	1.3km

Note: Measured from the centre of the site.

2.21 As outlined above, there are a range of bus stops, educational and community facilities and shops located within walking and cycling distance of the site, which cater for the day-to-day needs of the local population.

Public Transport Services

Bus Services

- 2.22 The nearest bus stops to the site are located approximately 570m to the north of the site, along Bicester Road (Kings Arms) and as such are located within an acceptable walking distance of the site. The bus stops on Bicester Road benefit from shelters, seating, timetabling information as well as a flag and pole.
- 2.23 The bus stops along Bicester Road are serviced by bus routes S5 and 250 which both operate between Oxford and Bicester. **Table 2.3** below outlines the destinations and frequency of the local bus routes.

Table 2.3 Summary of Bus Services from Local Bus Stops

Route No.	Route	Daytime Service Frequency		
		Monday-Friday	Saturday	Sunday
S5	Oxford – Kidlington – Bicester	Every 15 Min	Every 15 Min	Every 30 Min
250	Oxford – Kidlington – Heyford – Bicester	Hourly	Hourly	Hourly

Source: www.stagecoachbus.com; www.diamondbuses.com

- 2.24 The first and last bus times of the bus services listed in **Table 2.3** are shown in **Table 2.4** below.

Table 2.4 First and Last Bus Times

Route	Direction of Travel	Towards		From	
		First Bus	Last Bus	First Bus	Last Bus
250	Oxford - Bicester	05:35	18:50	06:07	19:34
	Bicester - Oxford	06:28	19:55	06:43	20:10
S5	Oxford - Bicester	09:15	23:45	09:31	23:58
	Bicester - Oxford	07:07	22:40	07:38	23:07

Source: www.stagecoachbus.com; www.diamondbuses.com

- 2.25 As outlined in **Table 2.4** above the local bus routes operate throughout the day and into the evening.

2.26 It is noted that bus route 250 is to be withdrawn from serving Kidlington at the end of 2022. The 250 bus route will be replaced by a Demand Responsive Transport (DRT) service, which will serve Killington and the surrounding villages, details of the service including operating hours and catchment areas will be set out in due course.

2.27 In addition to the bus routes outlined above, bus routes 2, 2a, 7, S4 and N2 operate from additional bus stops provided approximately 800m south of the site on Oxford Road. The additional bus routes provide services to Woodstock as well as additional connections to Oxford.

Oxford Parkway Park & Ride


2.28 Approximately 1.5km to the southwest of the site, on Oxford Road, is the Oxford Parkway (formerly Water Eaton) Park & Ride site. Oxford Parkway Park & Ride provides 758 car parking spaces and is serviced by bus routes 7 and 700 that provide connections to / from Oxford City Centre, Woodstock, Chipping Norton, the John Radcliffe Hospital and Oxford Brookes University (Headington and Gipse Lane Campuses). Oxford Parkway Rail Station is located adjacent to the Park & Ride and is discussed below.

Local Rail Services

2.29 The closest Rail Station to the site is Oxford Parkway, which is located approximately 1.5km to the south of the site, on the Chiltern Mainline. The station and all services are operated by Chiltern Railways with services operating to Oxford, Bicester, Wycombe and London Marylebone.

2.30 **Table 2.5** provides a summary of the frequency of rail services available from Oxford Parkway Rail Station.

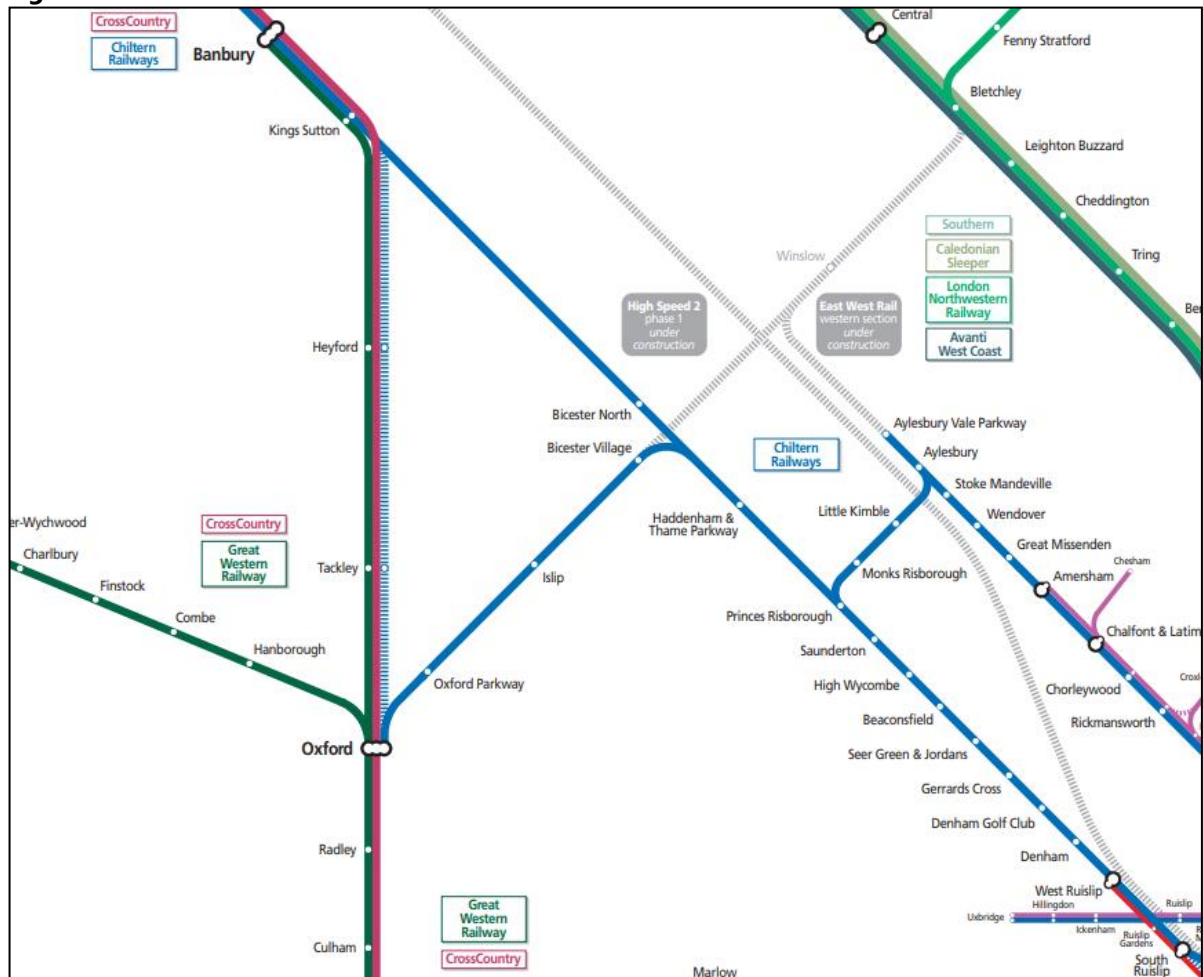
Table 2.5 Summary of Rail Services

Operator	Destination	Frequency (Trains per Hour)		
		Mon – Fri	Saturday	Sunday
	Oxford	2	2	2
	Bicester Village	2	2	2
	Haddenham and Thame Parkway	1	2	2
	Wycombe	1	2	2
	London Marylebone	2	2	2

Source: Chiltern Railways

- 2.31 Extensive cycle parking is provided at Oxford Parkway Rail Station with 150 sheltered and CCTV covered cycle parking spaces located on the station forecourt. In addition, the station benefits from the provision of ticket machines, smart card validators, a ticket office and step-free access.
- 2.32 The local rail network is illustrated in **Figure 2.2**.

Figure 2.2 Local Rail Network



Source: National Rail

Local Highway Network

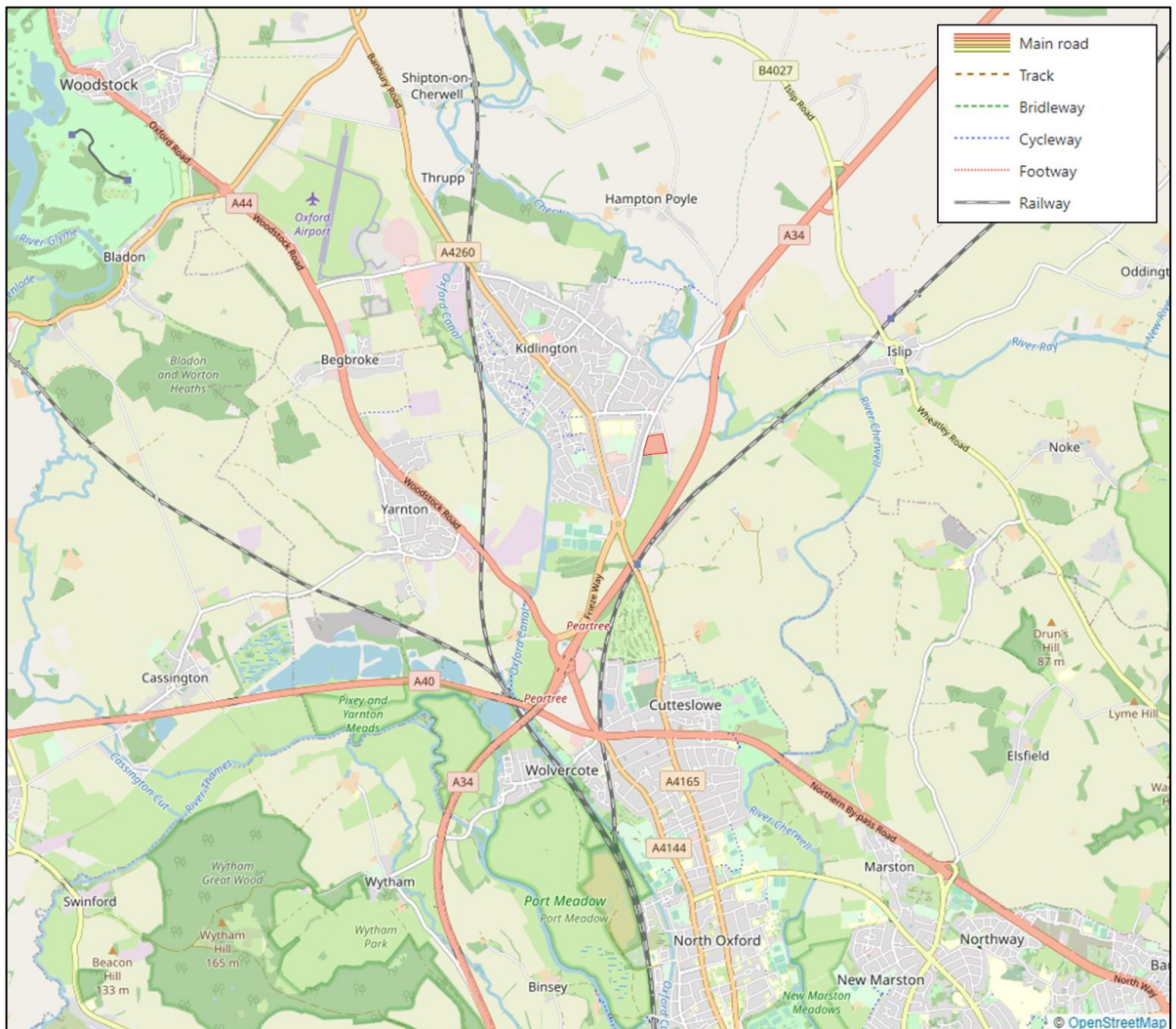
- 2.33 As outlined earlier, the site is located along the eastern side of Bicester Road. Bicester Road is a two-lane single-carriageway road that runs north to south between the A34 and the Bicester Road / A4260 / Oxford Road (Kidlington) roundabout. At the Bicester Road / Water Eaton Lane signal junction, which is located approximately 400m north of the site, Bicester Road (Old Bicester Road) also forms the western arm of the junction with this section of Bicester Road running towards the centre of the village.
- 2.34 Along the site frontage, Bicester Road has a width of approximately 7.3m and is subject to a speed limit of 40mph. The speed limit on Bicester Road changes to the national speed limit approximately

900m north of the site on the edge of the village. The western section of Bicester Road (Old Bicester Road) is subject to a speed limit of 30mph.

2.35 To the north, Bicester Road provides a connection to the A34 and M40, while to the south it provides a connection to Oxford Road, the A34, A40 and A44. Meanwhile, to the west, Bicester Road provides a connection to Oxford Road (A4260) and the centre of Kidlington.

2.36 The local highway network is outlined in **Figure 2.3**.

Figure 2.3 Local Highway Network



Source: © OpenStreetMap Contributors

Traffic Surveys

2.37 Traffic surveys were undertaken in November 2022 to identify the existing vehicle movements near the site. The following traffic surveys were undertaken:

- Automatic Traffic Counts on:
 - Bicester Road - along site frontage);
 - Bicester Road - North of Bicester Road / Water Eaton Lane signalised junction);
 - Bicester Road - South of site);
 - Oxford Road - North of Kidlington Roundabout;
 - Oxford Road - South of Kidlington Roundabout; and
 - Frieze Way.
- Manual Turning Counts at the:
 - Bicester Road / Water Eaton Lane signalised junction; and
 - Kidlington Roundabout.

2.38 The results of the traffic surveys are summarised below, with the full traffic survey results provided in **Appendix B**.

Traffic Speeds

2.39 With regards to speeds, the average and 85th percentile values at the ATC locations are shown in **Table 2.6**.

Table 2.6 ATC Speeds (5-day Average)

Location	Direction	Average (mph)	85th Percentile (mph)	Speed Limit (mph)
Bicester Road (site frontage)	Northbound	36	41	40
	Southbound	37	43	
Bicester Road (North of Bicester Road / Water Eaton Lane signalised junction)	Northbound	36	41	40
	Southbound	35	40	
Bicester Road (South of site)	Northbound	36	41	40
	Southbound	37	42	
Oxford Road – North of Bicester Road (W)	Northbound	21	28	30
	Southbound	20	25	
Oxford Road – South of Bicester Road (W)	Northbound	23	29	40
	Southbound	25	31	
Frieze Way	Northbound	44	51	40
	Southbound	32	36	

Source: PCC (Appendix B)

2.40 As demonstrated in **Table 2.6** above:

- The average vehicle speeds recorded at the three Bicester Road survey locations are below the speed posted limit of 40mph, although the recorded 85th percentile speeds are either in accordance (40mph) or above the posted speed limit;
- The average and 85th percentile speeds recorded at the two Oxford Road survey locations are below the posted speed limit; and,
- The northbound average and 85th percentile speeds recorded on Frieze Way are above the posted speed limit, while the southbound average and 85th percentile speeds are below the posted speed limit.

Traffic Volumes

2.41 With regards to the volume of traffic, the average five-day flows have been identified and are shown in **Table 2.7**.

Table 2.7 Average 5-day flows

Traffic Volumes	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)			Daily		
	NB	SB	Two-Way	NB	SB	Two-Way	NB	SB	Two-Way
Bicester Road (site frontage)	268	287	555	372	285	657	4,410	3,805	8,215
Bicester Road (North)	472	590	1,062	488	473	961	5,904	5,865	11,769
Bicester Road (South)	266	281	548	372	284	656	4,404	3,791	8,195
Oxford Road (North)	719	733	1,451	810	893	1,702	10,330	10,762	21,093
Oxford Road (South)	568	421	989	714	690	1,404	8,857	8,839	17,696
Frieze Way	306	291	597	413	450	863	5,033	5,383	10,416

Source: PCC (Appendix B)

2.42 As outlined in **Table 2.7**, the existing traffic flows equate to approximately:

- 11 vehicle movements per minute along Bicester Road (site frontage) in the traditional peak hours (0800-0900 and 1700-1800);
- 18 vehicle movements per minute along Bicester Road (north of Bicester Road / Water Eaton Lane signalised junction) in the traditional peak hours;
- 11 vehicle movements per minute along Bicester Road (south of site) in the traditional peak hours;
- 28 vehicle movements per minute along Oxford Road (north of Bicester Road (W)) in the traditional peak hours;

- 23 vehicle movements per minute along Oxford Road (south of Bicester Road(W)) in the traditional peak hours; and
- 14 vehicle movements per minute along Frieze Way in the traditional peak hours.

2.43 It is noted that there is Department for Transport (DfT) Traffic Count Point located on Oxford Road adjacent to Oxford Parkway Park & Ride⁹. The last manual count at this location was undertaken in 2018, although the 2021 AADT was estimated as being 6,952 (northbound) and 7,699 (southbound). During the last Manual Count, the AM peak hour flows (0800-0900) were 1,220 (782 southbound and 438 northbound) while the PM peak hour flows (1700-1800) were 1,750 (978 northbound and 772 southbound).

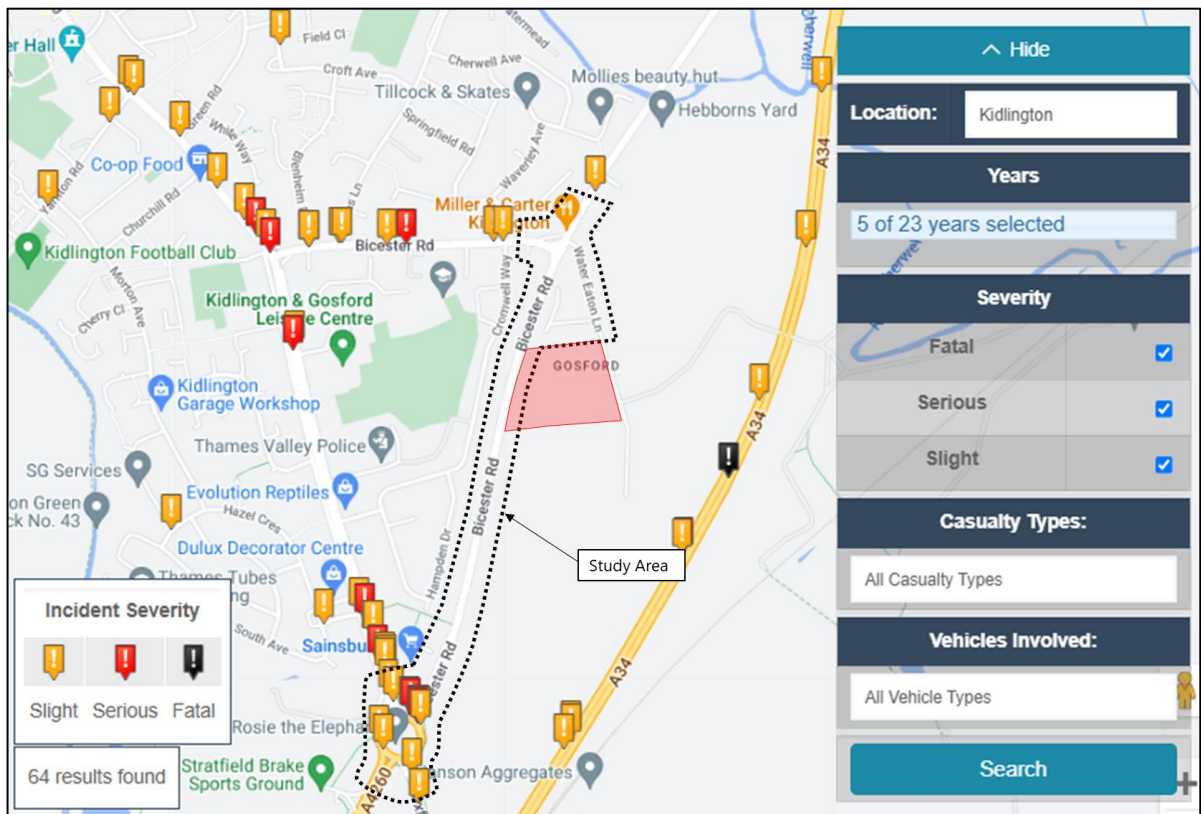
Personal Injury Accident Data

2.44 Personal Injury Accident (PIA) data is collected by the police about road traffic incidents where someone is injured, the PIA data records the location of the crash, the severity of the accident (ranked either: Slight, Serious or Fatal), the cause of the crash, the vehicles or persons involved and the conditions.

2.45 Open source PIA data has been obtained from Crashmap for the most recent five years (60 months) up to 2022 for the vicinity of the site. The PIA data from Crashmap is reproduced in **Figure 2.4** below.

⁹ Site number: 17066

Figure 2.4 PIA Data



Source: Crashmap

- 2.46 There were no recorded injury accidents within approximately 350m of the site nor along Bicester Road between the Bicester Road / A4260 / Oxford Road roundabout in the south and the Bicester Road / Water Eaton Lane signal junction in the north.
- 2.47 There are a number of accidents recorded within the vicinity of the Bicester Road / A4260 / Oxford Road roundabout, where a total of 13 accidents have been recorded.
- 2.48 Of the accidents recorded at the Bicester Road / A4260 / Oxford Road roundabout, none involved pedestrians while eight involved cyclists. The development proposals are likely to result in an increase in cycle movements, however, a package of measures to improve this are included within the Local Plan. The new measures are likely to mitigate the proposed development and make the junction safer for cyclists.
- 2.49 The total of 13 accidents over a 60-month period equates to one accident every four and a half months or 0.21 accidents a month. As such, it is considered that there is no accident issue in the local area.

Summary

- 2.50 The site is accessible to a wide range of local services and facilities through both walking and cycling and has access to frequent public transport services providing links to a wider range of local services, facilities and employment opportunities within Oxford, Bicester, Woodstock and Bicester.

3 Parking Standards

3.1 Parking Standards for new residential within Oxfordshire are outlined in OCC’s ‘Parking Standards for New Developments’ document, which was adopted in October 2022. The document sets out the parking standards for cycles, cars, motorcycles (powered two-wheelers) and Electric Vehicles.

3.2 The ‘Parking Standards for New Developments’ document (2022) sets out the revised parking standards within Oxfordshire and replaces the previous standards that were adopted in 2011. The revised parking standards were amended in support of the policies contained in OCC’s adopted ‘Local Transport Connectivity Plan’ (adopted 2022) and in light of OCC’s targets which are to:

- “Replace or remove 1 out of every 4 current car trips in Oxfordshire by 2030.
- Deliver a net-zero transport network and replace or remove an additional 1 out of every 3 current car trips in Oxfordshire by 2040.
- To deliver a transport network that contributes to a climate positive future by 2050.”¹⁰

Cycle Parking

3.3 OCC’s minimum approved cycle parking standards are outlined in **Table 3.1**.

Table 3.1 Cycle Parking Standards

Type	Dwelling Size	Parking Provision (per Unit_
House	1 bedroom	2 spaces per bedroom
	2 bedrooms	2 spaces per bedroom
	3 bedrooms	2 spaces per bedroom
	4+ bedrooms	2 spaces per bedroom
	Multiple Occupation	1 space per bedroom
Flats	All	2 spaces per bedroom
Visitor	1 space per Flat	

Source: Table 1 (OCC minimum levels of cycle provision required) included within ‘Parking Standards for New Developments’ (2022).

¹⁰ Para 1.1. *Parking Standards for New Developments*. OCC (2022)

3.4 Within the 'Parking Standards for New Developments' (2022) document, it states:

- *"High standard cycle storage facilities should be provided on-plot. This provision may vary subject to dwelling size and type. Such levels are to be provided to a minimum level as set out in Table 1 below.*
- *Cycling parking is to be provided in a convenient location close to building entrances and bus stop locations. Such provisions are to be covered, lit (where appropriate) and in the style of a Sheffield stand, which are individually installed permanently into the floor material (e.g. not toast-rack style stands bolted to the floor).*
- *Double decked or vertical cycle parking should not be used unless agreed by OCC in specific circumstances.*
- *The spacing of stands should be as per LTN 1/20. If raised on a kerb, dropped kerbs must be provided in suitable locations. Cycle parking should cater for non-standard cycles e.g. cargo bikes."*¹¹

3.5 As noted earlier, the cycle parking standards set out in **Table 3.1** were adopted in October 2022 and replaced the previous standards. Given the recent adoption of the parking standards there has been difficulty providing the required cycle parking provision. The provision of cycle parking in accordance with the standards would result in the loss of amenity space and would require the provision of an additional or bespoke shed within the garden of each dwelling.

3.6 Therefore, in a departure from the newly adopted standards, we are proposing to provide one cycle space per bedroom, although the four bedroom affordable dwellings (a total of three dwellings) will be an exception to this and will only provide 0.5 cycle spaces per bedroom due to a lack of available amenity space at these dwellings. The cycle parking provision will be the same for flats / apartments and houses.

3.7 A total of 22 Sheffield bike stands (44 parking spaces) are being provided at the development, with the Sheffield bike stands located outside the entrance to the flats and in a number of 'ad hoc' locations throughout the site for use by visitors and residents at the development.

3.8 The proposed cycle parking provision is considered to be acceptable given the existing and future mode share targets (see Travel Plan¹²), the provision of a range of regular public transport services within walking distance of the site including the Oxford Parkway Park & Ride and the likely population of the site. Notwithstanding the above, the PR7a allocation was adopted as part of the Cherwell Local Plan 2011-2031 (2020), at a time when the previous cycle parking standards were adopted.

¹¹ Para 4.11. *Parking Standards for New Developments*. OCC (2022)

¹² TPA Travel Plan. 1704-10 TP01(C)

3.9 Therefore, the development will provide 286 cycle parking spaces with 242 of the cycle parking spaces being allocated and 44 being unallocated.

Vehicle Parking

3.10 As outlined earlier, the vehicle standards for new residential developments are outlined within OCCs 'Parking Standards for New Residential Development' (2022) document. The site is located within Kidlington and is allocated to support Oxford's unmet housing needs and as such, the parking standards within Table 3 'Edge of Oxford City Sites' apply.

3.11 The maximum car parking standards for residential developments situated in an 'Edge of Oxford City' location are outlined in **Table 3.2**.

Table 3.2 Car Parking Standards

Towns	Parking Provision
1–2-bedroom dwellings	Up to 1 space per dwelling is to be provided within the development site
3 bedroom dwellings	Up to 2 spaces per dwelling are to be provided within the development site
4+ bedroom dwellings	Up to 2 spaces per dwelling are to be provided within the development site
Wheelchair accessible or adaptable houses and flats.	1 space per dwelling to be provided within the curtilage of the dwelling (must be designed in accordance with Part M of Building Regulations)
Student accommodation	0 spaces per resident room. Operational parking and disabled parking are to be considered on a case-by-case.
Motorcycle and powered two-wheeler parking	1 space per five dwellings

Source: Table 3. OCCs Parking Standards for New Residential Developments (2022)

3.12 In regards to flats, the 'Parking Standards for New Developments' document notes that:

"Flats and apartments will generally be treated as standard dwellings. However, when using land efficiently to provide residential dwellings, the parking arrangement for flats / apartments tend to be designed within a parking court / communal style arrangement. In such cases it is strongly recommended that they are controlled by a third-party organisation i.e. a management company on behalf of those who will use the spaces. This approach allows flexibility in specific spaces being

allocated to a property, assigning them to a particular group or promoting such spaces as unallocated in appropriate locations.”¹³

- 3.13 As demonstrated later within this report, a total of 152 car parking spaces will be provided on-site, with 136 car parking spaces being allocated on-plot parking and the remaining 16 car parking spaces being unallocated. The proposed car parking strategy is outlined in Hill Residential Limited drawing 141-PS-100, which is reproduced in **Appendix C**.
- 3.14 The provision of 136 allocated residential car parking spaces is in excess of the standards outlined within **Table 3.2**, with the additional provision resulting from two parking spaces (rather than one) being provided at the two bed private dwellings. For all other property types, car parking is provided in accordance with OCC standards.
- 3.15 The provision of an additional parking space at the two bed private dwellings is appropriate due to the likely demographics of the occupiers. It is likely that these dwellings will be occupied by young couples who could both own their own vehicle and therefore, each dwelling could require two parking spaces. However, while two vehicles may be parked at each dwelling they may not be used regularly, particularly for commuting purposes.
- 3.16 It is noted that the car parking spaces allocated for the flats are located in a parking court / communal style arrangement as was recommended by OCC within their ‘*Parking Standards for New Developments*’ (2022) document.
- 3.17 The unallocated parking, totalling 16 spaces, is provided at a ratio of just under 0.2 spaces per dwelling and therefore it is considered to be in accordance with OCC Policy, which states: “*it may be appropriate to allow for additional demand for visitor parking of 0.2 spaces per dwelling*”.
- 3.18 To support the parking strategy it is proposed that parking restrictions will be implemented throughout the site, as detailed in **Chapter 4**.
- 3.19 Concerning motorcycle / powered two-wheeler parking, a total of five parking spaces will be provided on-site. The formal motorcycle / powered two-wheeler parking is being provided within the communal parking areas for the proposed flats. While the provision of motorcycle / powered two-wheeler parking is below the required standards, all houses are being provided with either a driveway or garage and such, any motorcycle users, including visitors, will be able to utilise the driveways / garage space for motorcycle / powered two-wheeler parking if required.

¹³ Para 6.3. *Parking Standards for New Developments*. OCC (2022)

Electric Vehicles

3.20 In regards to Electric Vehicle charging points, the '*Cherwell Design Guide*' (2017) states:

*"Every home should have access to at least one electric charging point"*¹⁴

3.21 Meanwhile, within OCCs '*Parking Standards for New Developments*' (2022) document, it states that:

*"All houses (and flats / apartments) with on-plot / allocated parking should have an electrical vehicle charging point."*¹⁵

3.22 As such, the proposed development will provide an active Electric Vehicle charging point for all residential dwellings with on-plot parking. In addition, one communal metered Electric Vehicle charging point will be provided per flat parking court.

¹⁴ Sustainability. Page 5. Cherwell District Design Guide (2017).

¹⁵ Para 4.11. *Parking Standards for New Developments*. OCC (2022).

4 Proposed Development

Development Proposals

- 4.1 The proposed development will consist of 96 residential dwellings, which will be a mixture of sizes and types, including houses and apartments and with a 50/50 split between private and affordable units.
- 4.2 The proposed site layout is shown in Hill Residential Limited drawing 141-PS-100 (Revision A), which is reproduced in **Appendix C**, with the proposed development schedule set out in **Table 4.1**.

Table 4.1 Development Schedule

Tenure		Housing Type	Number of Bedrooms	Quantity
Affordable	Social Rent	Flats	1	5
			2	10
		Houses	2	6
			3	10
	First Homes	Flats	4	3
			1	9
	Shared Ownership	House	2	3
			3	2
Private	House	2	12	
		3	24	
		4	8	
		5	4	
Total				96

- 4.3 In addition to the 96 residential dwellings, as shown on the masterplan the development will provide suitable access for vehicles, pedestrians and cyclists as well as landscaping and green open space.

Access Proposals

- 4.4 The access proposals outlined below are in line with the development brief designed by Cherwell District Council, which stipulates the access arrangements for vehicles, pedestrians and cyclists.

Pedestrian and Cycle

- 4.5 Pedestrian and cycle access will be provided at a number of locations across the site frontages, connecting the site to the existing footways within the local area, including the footways along Bicester Road and Water Eaton Lane.
- 4.6 The main pedestrian and cycle access to the site will be via a 3m wide footpath / cycleway that will be provided to the north of the site access priority junction and along the western boundary of the site. The footpath / cycleway will extend along the western boundary of the site and will provide a connection to new bus stops and a Toucan crossing being provided along Bicester Road. This is outlined in TPA drawing **1704-010.PL02(B)**.
- 4.7 As outlined above as part of the access proposals, a new Toucan crossing, with dropped kerbs and tactile paving is being provided along Bicester Road. The Toucan crossing will be located approximately 75m to the north of the proposed site access and will connect the site to the existing shared footway / cycleway on the western side of Bicester Road.
- 4.8 In addition to the above, pedestrian and cycle access will be provided at the following locations along the site's boundary:
- At the north-eastern corner of the site a 3m wide shared footpath / cycleway will connect to the existing footway on Water Eaton Lane;
 - A shared footway / cycleway from the southern part of the PR7a allocation site; and
 - Multiple footways from the southern parcel of the PR7a allocation site.
- 4.9 Within the site, additional footways, footpaths and shared surface areas will be provided to link the main access road with different areas of the development site.

Vehicle

- 4.10 Vehicle access to the site will be via a priority junction onto Bicester Road, the proposed access design is shown in TPA drawing **1704-010.PL02(B)**. The access road will have a width of 5.5m, which is in accordance with the requirements of a 'primary street' as outlined within OCCs Street Design Guide¹⁶

¹⁶ Page 23. OCC Street Design Guide.

and in accordance with a 'general residential street' as outlined within the Cherwell Design Guide Supplementary Planning Document.¹⁷

- 4.11 Given the scale of development and the vehicular trip generation associated with the site, together with the speed and character of Bicester Road, a ghost-island right-turn lane is proposed. The ghost island has been designed in accordance with CD123 of the Design Manual for Roads and Bridges, with through lane widths of 3.25m, a ghost island width of 3.5m, a direct taper length of 15m, a deceleration length of 40m and a turning length of 20m.
- 4.12 Visibility splays of 2.4m x 120m in accordance with the 40mph speed limit are achievable from the access junction, as demonstrated in TPA drawing **1704-010.VS01(B)**. While the 85th percentile speeds recorded in the Automatic Traffic Count undertaken on Bicester Road in November 2022 are higher than the posted speed limit (northbound 41mph and southbound 43mph) the provision of 120m visibility splays is in accordance with the one-step below requirement for a 50mph road as outlined within the Design Manual for Roads and Bridges¹⁸. As such, the provision of 120m forward visibility splays is considered to be suitable.
- 4.13 In addition to the visibility splays at the site access, TPA Drawing **1704-010.VS02(B)** shows visibility splays of 2.4m x 25m at the on-site junctions and forward visibility splays of 17m along the on-site bends.
- 4.14 A Stage 1 Road Safety Audit (RSA) was undertaken on this access design in November 2022. The auditor's report along with the subsequent Designer's Response is provided in **Appendix D**.
- 4.15 As outlined on the proposed masterplan (**Appendix C**) a vehicle access point is proposed along the southern boundary of the site, with this providing access between the northern and south parcels of the PR7a allocation. This will connect to the spine road provided as part of the southern parcel as is shown on their masterplan which is reproduced in **Appendix E**.

Public Rights of Way

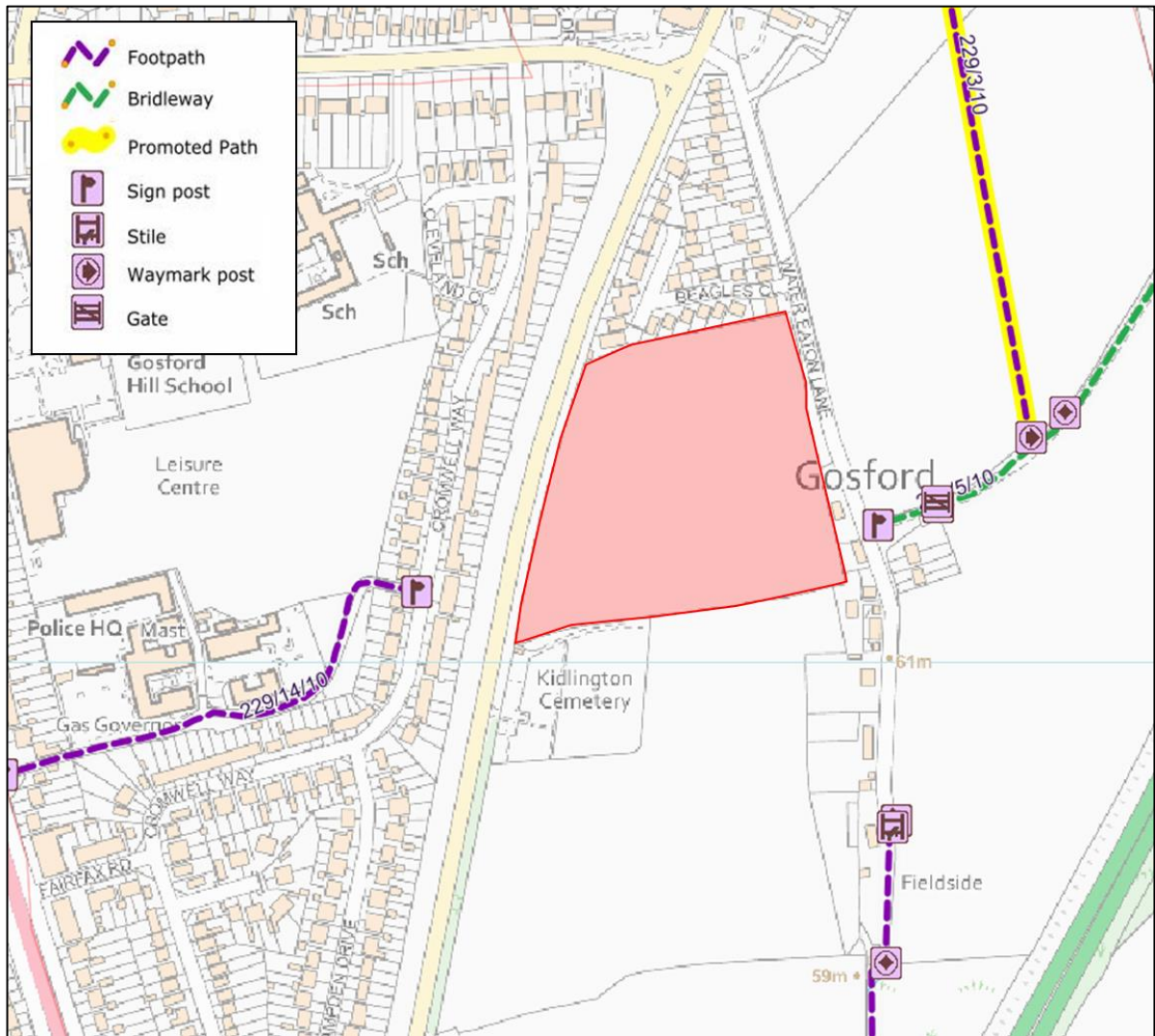
- 4.16 **Figure 4.1** shows an extract of OCC's Countryside Access Map¹⁹. The Countryside Access Map is a representation of the legal record of public rights of way in Oxfordshire.

¹⁷ Page 64. Cherwell Design Guide SPD.

¹⁸ Table 2.10 of CD 109 Highway Link Design

¹⁹ <https://publicrightsofway.oxfordshire.gov.uk/standardmap.aspx>

Figure 4.1 Public Rights of Way



Source: OCC Countryside Access Map

4.17 As outlined in **Figure 4.1** there are no Public Rights of Way running either through the site or along the site’s boundary. The nearest Public Right of Way (Path Code 229/5/10) to the site is located along the eastern side of Water Eaton Lane with the carriageway and residential property located between the Public Right of Way and the sites boundary.

4.18 Given that no Public Rights of Way run through the site or along the sites boundary the proposed development will not result in any changes to the local Public Rights of Way.

Cycle Parking

4.19 The development will provide one cycle space per bedroom, although the four bedroom affordable dwellings (a total of three dwellings) will be an exception to this and will only provide 0.5 cycle spaces per bedroom due to a lack of available amenity space at these dwellings. The cycle parking provision

will be the same for flats / apartments and houses. Therefore, a total of 242 cycle parking spaces are provided for residents of the development.

- 4.20 As noted earlier while the cycle parking provision is below those required by OCC this is considered to be acceptable given the existing and future mode share targets (see Travel Plan²⁰), the provision of a range of regular public transport services within walking distance of the site including the Oxford Parkway Park & Ride and the likely population of the site. Notwithstanding the above, the PR7a allocation was adopted as part of the Cherwell Local Plan 2011-2031 (2020), at a time when the previous car parking standards were adopted.
- 4.21 For the houses on-site, cycle parking will be provided either within a shed or garage, while for the flats a communal cycle store will be provided. This will ensure that all residents have secure, covered and accessible cycle parking. In addition, during our pre-application discussions with OCC, it was agreed that to support the use of cycles the proposed houses would be provided with an alternative means of access (such as a gate) to remove the need for residents to bring their bikes through their property.
- 4.22 In addition, a total of 22 unallocated Sheffield bike stands (44 parking spaces) are being provided at the development. The Sheffield bike stands will be located outside the entrance to the flats and in a number of 'ad hoc' locations throughout the site for use by visitors and residents at the development.

Car Parking

- 4.23 A total of 152 car parking spaces will be provided on-site, with 136 car parking being provided as allocated on-plot parking spaces and the remaining 16 car parking being unallocated spaces. While this provision is in excess of OCC standards this is considered to be acceptable for the reasons outlined in **Chapter 3**.
- 4.24 The unallocated parking is being provided as a mixture of either parallel or perpendicular parking bays.
- 4.25 In regards to motorcycle / powered two-wheeler parking, as outlined earlier, a total of five parking spaces are to be provided on-site.
- 4.26 The proposed development will provide an active Electric Vehicle charging point for all residential dwellings with on-plot parking. In addition, one communal metered Electric Vehicle charging point will be provided per flat parking court. This is in accordance with the guidance from Cherwell District Council and OCC.

²⁰ TPA Travel Plan. 1704-10 TP01(B)

4.27 In addition to the above, one Car Club parking space is to be provided on-site.

Car Club

4.28 Car Clubs work by giving members access to a car on short-term rentals, charging by the hour or day, rather than incurring the costs associated with owning, maintaining and operating a private vehicle.

4.29 It is generally acknowledged that one car club vehicle can replace several private vehicle parking spaces²¹. A reduction in car use has a significant benefit to the environment, air quality, carbon footprint, congestion and parking.

4.30 Discussions with a number of Car Club operators are currently being undertaken, with a view to providing a Car Club within the development. However, as set out in the supporting Travel Plan, the Travel Plan Coordinator will work with other local developers, other Travel Plan Coordinators and the local community to review car club usage and the viability of providing further car club parking spaces within the site and the local area.

4.31 As proposed within the Travel Plan, each future household will be eligible to free membership to the local Car Club for an agreed period of time. However, the Car Club would be open to all existing and future residents of the surrounding areas to join should they wish to, which may in turn enable / require car club spaces to be provided across a wider area should take up justify the expansion.

Parking Restrictions

4.32 As outlined in **Chapter 3** to support the parking strategy parking restrictions will be introduced throughout the site. The introduction of parking restrictions was requested by OCC as part of the Pre-application process. The parking restrictions will be a mixture of single and double yellow lines, as outlined in TPA drawing **1704-010.PL03(A)**.

4.33 The introduction of parking restrictions is considered to be appropriate due to the sites location within the Oxford Commuter Belt, the close proximity of the Oxford Parkway Park & Ride site and the accessibility of the site via public transport services.

Servicing and Deliveries

4.34 Bin stores will be provided at each unit, with residents required to move the bins to the kerbside on collection days. In some locations, residents will be required to move bins to a collection area located

²¹ CoMoUK Car Club Annual Report for Great Britain 2020

alongside the carriageway, these collection areas will be located within a 30m drag distance of the properties and within a 15m drag distance of refuse collection vehicle as required by Oxfordshire County Councils Street Design Guide²².

- 4.35 Refuse collection will take place from within the site, TPA drawing **1704-010.SP02(B)** shows the swept paths of an 11.6m refuse vehicle accessing / egressing the site via the proposed site access. The 11.6m refuse vehicle used in the swept path analysis is 0.98m longer than the refuse vehicle specified within Cherwell District Council's '*Planning and Waste Management Design Guide*' (2009).
- 4.36 As demonstrated in TPA drawing **1704-010.SP02(B)**, that the 11.6m refuse vehicle overhangs onto the opposite side of the carriageway / ghost island on both entry and exit from the site. However, given the anticipated frequency of refuse vehicle movements (one per week) and that the junction has been designed in accordance with OCC guidance, the proposed junction arrangement is considered to be acceptable.
- 4.37 In addition to the above, TPA drawing **1704-010.SP01(B)** shows the 11.6m refuse vehicle utilising the on-site turning heads / turning areas.

Emergency Access

- 4.38 Emergency vehicles will be able to access the site from Bicester Road. Swept path analysis of a Fire Appliance entering and turning on-site is provided in TPA drawings **1704-010.SP03(B)** and **1704-010.SP04(B)**.

²² Page 54. Oxfordshire Country Council Street Design Guide.

5 Trip Generation and Modelling

Existing

- 5.1 The proposed development site is currently agricultural farmland and as such, there is minimal associated trip generation.

Proposed Trip Rates and Generation

- 5.2 As outlined in **Chapter 2**, the proposed development site forms a part of Strategic Development Site PR7a (Land South East of Kidlington). In March 2022, a planning application for the southern parcel of the PR7a development site was submitted. As part of the application a Transport Assessment, which set out trip rates, was produced. In relation to trip rates within the consultation response from OCC, it stated that:

"Traffic generation has been derived using TRICS software, the assessment of which has resulted in a trip rate which is considered acceptable."²³

- 5.3 Therefore, to determine the likely trip generation of the proposed development the trip rates extracted as part of the application for the southern parcel will be used. The trip rates outlined with the Transport Assessment were extracted from the Trip Rate Information Computer System (TRICS) database v.7.8.4.
- 5.4 It was noted that during the Pre-application discussions, OCC suggested that the trip rates could potentially be reduced further given the location of the site. However to provide a robust, worst-case, assessment the trip rates for the southern parcel have been used.
- 5.5 The trip rates extracted from the Transport Assessment for the southern parcel of the PR7a development site are outlined in **Table 5.1** below.

²³ OCC Consultation Response dated 28th April 2022

Table 5.1 Trip Rates

	AM Peak (08:00 - 09:00)			PM Peak (17:00 - 18:00)		
	Arrive	Depart	Total	Arrive	Depart	Total
Private	0.126	0.358	0.484	0.332	0.149	0.481
Affordable	0.122	0.248	0.370	0.229	0.157	0.386

Source: TRICS version 7.8.4

5.6 Based on the trip rates outlined in **Table 5.1** above, **Table 5.2** below outlines the likely trip generation of the proposed 96 dwelling development. The trip generation has been divided 50/50 between private and affordable.

Table 5.2 Trip Generation (96 dwellings)

	AM Peak (08:00 - 09:00)			PM Peak (17:00 - 18:00)		
	Arrive	Depart	Total	Arrive	Depart	Total
Private	6	17	23	16	7	23
Affordable	6	12	18	11	8	19
Total	12	29	41	27	15	42

5.7 As shown in **Table 5.2**, a development of 96 dwellings is anticipated to have a total trip generation of 41 vehicular movements during the AM peak hour and 42 vehicular movements during the PM peak hour.

Trip Distribution

5.8 In order to further review the likely impact, an assessment of Office for National Statistics (ONS) census data²⁴ was used to establish the distribution of vehicle trips onto the local road network. Destinations of the trips associated with the proposed development will be calculated using the most recent journey

²⁴ ONS Dataset WU03EW

to work data from ONS. Dataset WU03EW (Location of usual residence and place of work) has been used, with the work destinations of those who live within MSOA Cherwell 019 established.

- 5.9 It is noted that the main work destinations are Oxford (41.1%), Yarnton, Kidlington and Oxford Airport (28.8%) West Oxfordshire (12.5%), Vale of White Horse (10.0%) and South Oxfordshire (5.4%).
- 5.10 Traffic from the development has been distributed across five routes, Bicester Road (north), Bicester Road (west), Oxford Road (Southwest), Frieze Way and Oxford Road (northwest). Trips have been allocated across these five routes based on Google maps navigation. The percentage allocated along each route is outlined in **Table 5.3**.

Table 5.3 Distribution of Work Trips

Destination	Percent of Residents
Bicester Road (north)	9.0%
Bicester Road (west)	17.6%
Oxford Road (southwest)	23.4%
Frieze Way	49.5%
Oxford Road (northwest)	0.5%

Source: ONS

- 5.11 Based on the distribution outlined in **Table 5.3**, the trip generation for the five routes is outlined in **Table 5.4** below.

Table 5.4 Trip Distribution by Route and Time

Destination	AM Peak 08:00-09:00			PM Peak 17:00-18:00		
	Arrive	Depart	Total	Arrive	Depart	Total
Bicester Road (north)	1	3	4	2	1	3
Old Bicester Road (west)	2	5	7	5	3	8
Oxford Road (southwest)	3	7	10	6	3	9
Frieze Way	6	14	20	14	8	22
Oxford Road (northwest)	0	0	0	0	0	0

5.12 As outlined in **Table 5.4**, the proposed development is likely to generate approximately:

- One vehicle movement every 25 minutes along Bicester Road (north);
- One vehicle movement every 10 minutes along Bicester Road (west);
- One vehicle movement every three to four minutes along Oxford Road (southwest); and,
- One vehicle movement every three minutes along Frieze Way.

5.13 The number of trips outlined above is considered to be negligible and is unlikely to have a significant impact on the local highway network.

Development Impact

Flow Increase

5.14 Based on the residential trip generation set out within **Table 5.4** and the traffic surveys outlined in **Chapter 2, Table 5.5** sets out the likely change in flows locally along the highway network.

Table 5.5 Change in Traffic Flow

Route	Time	Direction	Observed Flow	Additional Trips	Flow Change
Bicester Road (Along Site Frontage)	AM Peak 08:00-09:00	Northbound	268	8	2.99%
		Southbound	287	3	1.05%
	PM Peak 17:00-18:00	Northbound	372	4	1.08%
		Southbound	285	7	2.46%
Bicester Road (North of Bicester Road / Water Eaton Lane signalised junction)	AM Peak 08:00-09:00	Northbound	472	3	0.64%
		Southbound	590	1	0.17%
	PM Peak 17:00-18:00	Northbound	488	1	0.20%
		Southbound	473	2	0.42%
Bicester Road (South of site)	AM Peak 08:00-09:00	Northbound	266	9	3.38%
		Southbound	281	21	7.47%
	PM Peak 17:00-18:00	Northbound	372	20	5.38%
		Southbound	284	11	3.87%

Route	Time	Direction	Observed Flow	Additional Trips	Flow Change
Oxford Road – South of Old Bicester Road (West)	AM Peak 08:00-09:00	Northbound	568	0	0.00%
		Southbound	421	0	0.00%
	PM Peak 17:00-18:00	Northbound	714	0	0.00%
		Southbound	690	0	0.00%
Frieze Way	AM Peak 08:00-09:00	Northbound	306	6	1.96%
		Southbound	291	14	4.81%
	PM Peak 17:00-18:00	Northbound	413	14	3.39%
		Southbound	450	8	1.78%
Oxford Road	AM Peak 08:00-09:00	Northbound	438	3	0.68%
		Southbound	782	7	0.90%
	PM Peak 17:00-18:00	Northbound	978	6	0.61%
		Southbound	772	3	0.39%

5.15 As demonstrated in **Table 5.5** the proposed development will result in less than 5% impact on all of the local roads with the exception of Bicester Road (south) where the development will result in an increase of 7.47% impact on the southbound carriageway during the AM peak hour. However, given that the site access is located along Bicester Road this section of the local highway network is likely to have the highest impact as development trips have not had a chance to distribute across the wider highway network.

5.16 However, to further assess the impact of the proposed development, junction capacity analysis at the local road junctions was undertaken. This will be outlined in the remainder of this section.

Junction Capacity Analysis

Methodology

5.17 A series of independent models were developed to assess the capacity of specific junctions on the network. These junctions are:

- 1) Proposed Site Access Priority Junction;
- 2) Bicester Road / Water Eaton Lane Signalised Junction; and
- 3) Kidlington roundabout.

- 5.18 It is noted that the Kidlington roundabout has been assessed based on its existing arrangement rather than any potential future arrangement.
- 5.19 The junctions will be assessed through the following assessment scenarios, with baseline (2022) traffic data taken from the traffic surveys outlined in **Chapter 2**. The assessment scenarios include a sensitivity test including the whole of the PR7a allocation, as requested by OCC. The assessment scenarios are:
- 2022 Baseline (without development);
 - 2022 with Development;
 - 2027 Future Baseline (without development);
 - 2027 Future Baseline with development; and
 - 2027 Future Baseline with development and full PR7a allocation (sensitivity test).
- 5.20 It is noted that the site access junction will be modelled with the trip generation from the whole PR7a, despite the provision of a priority junction within the southern parcel of the PR7a allocation site.
- 5.21 For the purposes of this assessment, when reviewing the capacity of priority junctions and roundabouts, reference has been made to Junctions 10 developer *Transport Research Laboratory's* Knowledge Base, which states that:

"Generally values of 0.85 for unsignalled junctions have been used extensively and many modelling products pander to this by setting defaults that, of course, encourage it even more.

Although it is understandable why such values are popular, and genuinely have their place, there may be a tendency for these values to become the ONLY goal, at the expense of evaluating situations in a more thorough and useful way.

There are a number of reasons why you should not rely on just one single acceptable maximum value of RFC. For example:

RFC values vary throughout a peak, and can rise and fall sharply or slowly.

The consequences of a high RFC depend on the flow. An RFC value of 1.2 might not matter with a very low flow whereas a value of 0.8 might be disastrous with a high flow.

The important criteria for judging the success of a design (from the point of view of congestion) are the total delay to all vehicles, and the mean delay per vehicle on each of the approaches. The latter is a question of "fairness" and "politics". Is it acceptable for some drivers to suffer twice as much delay as others? How about ten times as much? That is a matter of opinion."²⁵

²⁵ <https://trlsoftware.com/support/knowledgebase/what-maximum-rfc-ratio-of-flow-to-capacity-is-acceptable/>

- 5.22 It should also be noted that RFC values vary throughout a peak, and can rise and fall sharply or slowly. The consequences of a high RFC depend on the flow. Therefore an additional parameter was assessed which predicts the maximum delay experienced by a mean average vehicle arriving during a particular time period.
- 5.23 With regard to assessing the capacity at the signal-controlled junction, the junction has been assessed against the industry standard criteria of a 90% Degree of Saturation (DoS). Additional information relating to the mean maximum queue and the vehicular delay has been included to provide a complete assessment of the junction’s operation.

Growth Factors

- 5.24 Growth factors have been obtained from the Trip End Model Presentation Program (TEMPRO) version 7.2c database. The TEMPRO growth factors will be to establish the background traffic growth along the local highway network between 2022 and 2027.
- 5.25 TEMPRO growth factors have been obtained for MSOA Cherwell 019 and relate to ‘car drivers’ on principal roads. The resultant growth factors are outlined in **Table 5.6**.

Table 5.6 TEMPRO Factors

	2022-2027
Weekday AM	1.044827
Weekday PM	1.045777
Average Weekday	1.048177

Source: TEMPRO v7.2c

Committed Developments

- 5.26 A review of the Cherwell District Planning Portal has been undertaken to establish whether any local committed developments need to be considered within the baseline traffic flows.
- 5.27 It is noted that application 22/01611/OUT forms part of site allocation PR7b within the Cherwell Local Plan while application 22/00747/OUT forms the southern parcel of the PR7a site allocation. As such, the Tempro growth factors outlined earlier within this report will account for the traffic growth resulting from these developments. Therefore, it is considered that no further assessment of the traffic flows resulting from either of these developments is required.

5.28 However, at the request of OCC, the proposed junction modelling set out below will include a sensitivity test which will include the trip generation resulting from the whole of the PR7a allocation site.

Junction Capacity Analysis - Site Access

5.29 Capacity analysis at the proposed site access junction has been undertaken utilising the Junctions 10 module PICADY. The capacity analysis at the proposed site access priority junction does not include the two baseline scenarios (2022 / 2027) as the proposed junction would not be in operation in these scenarios. The full output results are contained within **Appendix F**, with a summary contained within **Table 5.7**.

Table 5.7 Junction Capacity Analysis – Site Access

Arm	AM Peak Hour (08:00-09:00)			PM Peak Hour (17:00-18:00)		
	Max Queue (veh)	Max Delay (sec.)	Max RFC	Max Queue (veh)	Max Delay (sec.)	Max RFC
2022 With Development						
Site	0.0	8.21	0.04	0.0	8.42	0.02
Bicester Road (S)	0.0	5.44	0.01	0.0	5.47	0.03
Bicester Road (N)	0.3	2.68	0.19	0.2	2.42	0.18
2027 With Development						
Site	0.0	8.34	0.04	0.0	8.57	0.02
Bicester Road (S)	0.0	5.48	0.01	0.0	5.51	0.03
Bicester Road (N)	0.3	2.71	0.20	0.2	2.44	0.19
2027 With Development and PR7a Allocation (Sensitivity Test)						
Site	0.3	9.77	0.22	0.1	9.93	0.11
Bicester Road (S)	0.1	5.88	0.08	0.2	6.51	0.17
Bicester Road (N)	0.3	2.73	0.21	0.3	2.50	0.20

Source: Junctions 10 report continued within Appendix F.

5.30 As outlined in **Table 5.7**, the site access junction operates well within its design capacity during both the AM and PM peak hours with minimal queueing and delay. In addition, as demonstrated in **Table 5.7** the site access junction continues to operate well within its design capacity in the sensitivity test scenario.

Junction Capacity Analysis - Bicester Road / Water Eaton Lane Signalised Junction

5.31 Capacity analysis at the Bicester Road / Water Eaton Lane signal controlled junction has been undertaken utilising LinSig version 3. The junction has been assessed with a cycle time of 120 seconds, with all five stages being called in each cycle. The full output results are contained within **Appendix G**, with a summary contained within **Table 5.8**.

Table 5.8 Junction Capacity Analysis – Bicester Road / Water Eaton Lane Signalised Junction

Lane	AM Peak Hour (08:00-09:00)				PM Peak Hour (17:00-18:00)			
	Mean Max Queue (veh.)	Avg. Delay (sec.)	DoS (%)	PRC (%)	Mean Max Queue (veh.)	Avg. Delay (sec.)	DoS (%)	PRC (%)
2022 Baseline								
Bicester Road (W)	9.7	86.1	85.0%	5.8%	9.1	73.5	78.8%	9.5%
Bicester Road (N)	21.6	44.3	83.5%		17.7	52.5	82.2%	
Water Eaton Lane	0.7	69.8	15.2%		0.2	67.8	4.8%	
Bicester Road (S)	9.1	70.2	81.6%		12.3	55.0	80.1%	
2022 With Development								
Bicester Road (W)	9.1	77.3	81.1%	5.5%	9.3	74.3	79.6%	9.1%
Bicester Road (N)	22.3	46.9	85.3%		17.8	52.8	82.5%	
Water Eaton Lane	0.7	69.8	15.2%		0.2	67.8	4.8%	
Bicester Road (S)	9.4	70.7	82.7%		12.4	55.1	80.6%	
2027 Baseline								
Bicester Road (W)	10.9	95.1	88.8%	1.4%	9.9	78.4	82.5%	4.7%
Bicester Road (N)	23.8	48.6	87.3%		19.4	56.9	85.9%	
Water Eaton Lane	0.7	69.8	15.2%		0.2	67.8	4.8%	
Bicester Road (S)	10.1	76.3	85.3%		13.4	58.8	83.6%	

Lane	AM Peak Hour (08:00-09:00)				PM Peak Hour (17:00-18:00)			
	Mean Max Queue (veh.)	Avg. Delay (sec.)	DoS (%)	PRC (%)	Mean Max Queue (veh.)	Avg. Delay (sec.)	DoS (%)	PRC (%)
2027 With Development								
Bicester Road (W)	11.0	95.8	89.1%	1.0%	10.2	79.4	83.3%	4.4%
Bicester Road (N)	23.8	48.7	87.3%		19.5	57.2	86.2%	
Water Eaton Lane	0.7	69.8	15.2%		0.2	67.8	4.8%	
Bicester Road (S)	10.4	77.5	86.4%		13.7	59.0	84.1%	
2027 With Development and PR7a Allocation (Sensitivity Test)								
Bicester Road (W)	11.5	99.5	90.5%	-0.5%	11.0	84.3	86.6%	2.6%
Bicester Road (N)	25.1	53.4	89.7%		20.3	59.6	87.7%	
Water Eaton Lane	0.7	69.8	15.2%		0.2	67.8	4.8%	
Bicester Road (S)	10.5	68.6	85.2%		14.3	60.7	86.0%	

Source: Linsig report continued within appendix G.

- 5.32 As outlined in **Table 5.8**, the Bicester Road / Water Eaton Lane signalised junction operates within its design capacity in the baseline and with development scenarios. The PRC reduces from a maximum of 5.5% in 2022 to 1% in 2027. As such, it is considered that the proposed development will result in a negligible impact compared to the baseline and therefore no mitigation is required.
- 5.33 It is observed, however, that when the traffic flows from the full PR7a allocation are added to the junction it operates with a PRC of -0.5% in the AM peak hour. While the junction operates above the industry standard criteria of a 90% DOS the junction still operates within capacity (100%) and as such, this is not considered to result in a significant or severe impact.
- 5.34 Notwithstanding the above, it is noted that a total of 19 vehicles egress Water Eaton Lane in the AM peak hour and as such there maybe scope to retime the signals or convert Water Eaton Lane to an 'on demand' operation in order to increase the green time on the other arms at the junction to improve its operation.

Junction Capacity Analysis - Kidlington roundabout

- 5.35 Capacity analysis at the existing Kidlington roundabout has been undertaken utilising the Junctions 10 module ARCADY, with the traffic flows based on a 15 minute 'direct' profile. The full output results are contained within **Appendix H**, with a summary contained within **Table 5.9**.

Table 5.9 Junction Capacity Analysis – Kidlington roundabout

Arm	AM Peak Hour (08:00-09:00)			PM Peak Hour (17:00-18:00)		
	Max Queue (veh)	Max Delay (sec.)	Max RFC	Max Queue (veh)	Max Delay (sec.)	Max RFC
2022 Baseline						
Bicester Road	0.3	2.43	0.22	0.2	2.18	0.17
Oxford Road (S)	0.4	2.59	0.28	0.9	3.25	0.47
Frieze Way	0.2	1.56	0.15	0.2	1.66	0.18
Oxford Road (W)	0.3	4.47	0.25	0.1	4.31	0.12
Oxford Road (N)	0.8	3.16	0.43	1.2	3.81	0.54
2022 With Development						
Bicester Road	0.3	2.46	0.24	0.2	2.20	0.17
Oxford Road (S)	0.4	2.61	0.28	0.9	3.28	0.47
Frieze Way	0.2	1.57	0.16	0.2	1.67	0.19
Oxford Road (W)	0.3	4.50	0.25	0.1	4.36	0.12
Oxford Road (N)	0.8	3.18	0.44	1.2	3.86	0.55
2027 Baseline						
Bicester Road	0.3	2.50	0.24	0.2	2.24	0.18
Oxford Road (S)	0.4	2.66	0.29	1.0	3.42	0.49
Frieze Way	0.2	1.59	0.16	0.2	1.69	0.19
Oxford Road (W)	0.4	4.63	0.26	0.1	4.45	0.13
Oxford Road (N)	0.8	3.31	0.46	1.3	4.06	0.57

Arm	AM Peak Hour (08:00-09:00)			PM Peak Hour (17:00-18:00)		
	Max Queue (veh)	Max Delay (sec.)	Max RFC	Max Queue (veh)	Max Delay (sec.)	Max RFC
2027 With Development						
Bicester Road	0.3	2.54	0.25	0.2	2.26	0.18
Oxford Road (S)	0.4	2.68	0.29	1.0	3.46	0.49
Frieze Way	0.2	1.59	0.17	0.2	1.71	0.20
Oxford Road (W)	0.4	4.66	0.26	0.1	4.50	0.13
Oxford Road (N)	0.8	3.33	0.46	1.3	4.12	0.57
2027 With Development and PR7a Allocation (Sensitivity Test)						
Bicester Road	0.4	2.68	0.29	0.3	2.32	0.21
Oxford Road (S)	0.5	2.76	0.30	1.0	3.61	0.51
Frieze Way	0.2	1.61	0.17	0.3	1.77	0.22
Oxford Road (W)	0.4	4.74	0.27	0.2	4.69	0.13
Oxford Road (N)	0.9	3.39	0.46	1.4	4.33	0.59

Source: Junctions 10 report continued within Appendix H.

- 5.36 As demonstrated in **Table 5.9**, the Kidlington roundabout operates within its intended design capacity in all scenarios with the level of queuing and delay predicted to be negligible. The proposed development will result in a minimal impact compared to the baseline and as such, no mitigation is required.
- 5.37 Furthermore as demonstrated by the sensitivity test, even with the inclusion of the full PR7a allocation the junction operates well within its capacity.
- 5.38 The junction capacity analysis has been compared to a five-minute queue survey, which was undertaken alongside the MCC. The survey showed fluctuating queue lengths across all arms, however, given that the junction is a roundabout they are likely to be ‘moving queues’ and as such, there is no requirement to calibrate the model to reflect these queue lengths.

Summary

- 5.39 The proposed development is anticipated to have a total trip generation of 41 vehicular movements during the AM peak hour and 42 vehicular movements during the PM peak hour. With this expected to generate approximately, one vehicle movement every 25 minutes along Bicester Road (north), one vehicle movement every 10 minutes along Bicester Road (west), one vehicle movement every three to four minutes along Oxford Road (southwest) and one vehicle movement every three minutes along Frieze Way.
- 5.40 The proposed development will result in less than 5% impact on all of the local roads with the exception of Bicester Road (south) where the development will result in an increase of 7.47% impact on the southbound carriageway during the AM peak hour. However, given that the site access is to be located along Bicester Road this section of the local highway network is likely to have the highest impact as development trips have not had a chance to distribute across the wider highway network.
- 5.41 The proposed site access priority junction operates well within capacity with minimal queueing and delay.
- 5.42 The Bicester Road / Water Eaton Lane signal junction operates within its design capacity in the baseline and with development scenarios; although when the traffic flows from the full PR7a allocation are added to the junction it operates with a PRC of -0.5%. While the junction operates above the industry standard criteria of a 90% DOS the junction still operates within capacity (100%) and as such, this is not considered to result in a significant or severe impact.
- 5.43 At the Kidlington roundabout, there is a minimal change in delay and queueing and the roundabout is operating within the desired operating capacity. It is therefore concluded that there is a negligible impact on the Kidlington roundabout as a result of the proposed development.

6 Summary and Conclusions

Summary

- 6.1 Transport Planning Associates (TPA) has been commissioned by Hill Residential Limited to provide transport planning consultancy services in relation to a proposed residential development on land to the east of Bicester Road, Kidlington.
- 6.2 The site, which totals approximately four hectares, is located on the eastern side of Bicester Road in Kidlington, a village in the Cherwell District of Oxfordshire. The village is located 7km north of Oxford city centre, 12km southwest of Bicester and 14km east of Witney.
- 6.3 The proposed site is allocated as a 'Strategic Development Site' within the Cherwell Local Plan 2011-2031 (2020) and forms part of Policy PR7a, Land South East of Kidlington. The PR7a allocation will provide an extension to Kidlington through the provision of approximately 430 dwellings.
- 6.4 The site is accessible to a wide range of local services and facilities through both walking and cycling and has access to frequent public transport services providing links to a wider range of local services, facilities and employment opportunities within Oxford, Bicester, Woodstock and Bicester.
- 6.5 The proposed development will consist of 96 residential dwellings, which will be a mixture of sizes and types, including houses and apartments and with a 50/50 split between private and affordable units.
- 6.6 Pedestrian and cycle access will be provided at a number of locations across the sites frontages, connecting the site to the existing footways within the local area, including the footways along Bicester Road and Water Eaton Lane.
- 6.7 Vehicle access to the site will be via a priority junction onto Bicester Road. The access road will have a width of 5.5m, furthermore given the scale of development and the vehicular trip generation associated with the site, together with the speed and character of Bicester Road, a ghost-island right-turn lane is proposed.
- 6.8 The development will provide one cycle space per bedroom, although the four bedroom affordable dwellings (a total of three dwellings) will be an exception to this and will only provide 0.5 cycle spaces per bedroom due to a lack of available amenity space at these dwellings. The cycle parking provision will be the same for flats / apartments and houses. Therefore, a total of 242 cycle parking spaces are provided for residents of the development. In addition, a total of 22 unallocated Sheffield bike stands (44 parking spaces) are being provided at the development. The Sheffield bike stands will be located outside the entrance to the flats and in a number of 'ad hoc' locations throughout the site for use by visitors and residents at the development.

- 6.9 A total of 152 car parking spaces will be provided on-site, with 136 car parking spaces being provided as allocated parking and the remaining 16 car parking spaces being unallocated. In addition, the proposed development will provide an active Electric Vehicle charging point for all residential dwellings with on-plot parking. In addition, one communal metered Electric Vehicle charging point will be provided per flat parking court.
- 6.10 The proposed development is anticipated to have a total trip generation of 41 vehicular movements during the AM peak hour and 42 vehicular movements during the PM peak hour. With this expected to generate approximately, one vehicle movement every 25 minutes along Bicester Road (north), one vehicle movement every 10 minutes along Bicester Road (west), one vehicle movement every three to four minutes along Oxford Road (southwest) and one vehicle movement every three minutes along Frieze Way.
- 6.11 The proposed development will result in less than 5% impact on all of the local roads with the exception of Bicester Road (south) where the development will result in an increase of 7.47% impact on the southbound carriageway during the AM peak hour. However, given that the site access is to be located along Bicester Road this section of the local highway network is likely to have the highest impact as development trips have not had a chance to distribute across the wider highway network.
- 6.12 The proposed site access priority junction operates well within capacity with minimal queueing and delay.
- 6.13 The Bicester Road / Water Eaton Lane signal junction operates within its design capacity in the baseline and with development scenarios; although when the traffic flows from the full PR7a allocation are added to the junction it operates with a PRC of -0.5%. While the junction operates above the industry standard criteria of a 90% DOS the junction still operates within capacity (100%) and as such, this is not considered to result in a significant or severe impact.
- 6.14 At the Kidlington roundabout, there is a minimal change in delay and queueing and the roundabout is operating within the desired operating capacity. It is therefore concluded that there is a negligible impact on the Kidlington roundabout as a result of the proposed development.

Report Conclusions

- 6.15 This Transport Statement concludes that the proposed development is located in a highly sustainable location and can be accessed through walking, cycling and public transport services. The proposals will have a minimal impact on the local highway network. As such, it is considered that there are no transport and highways reasons for the refusal of the planning application.