

10.0 TRAFFIC AND TRANSPORT

Introduction

- 10.1 This Chapter of the ES has been prepared by Ridge and Partners LLP and assesses the Proposed Development described in Chapter 4 in relation to Traffic and Transport.
- 10.2 The baseline situation is considered before the likely environmental effects of the Proposed Development are identified during its construction and operational phases. Mitigation measures to reduce any negative environmental effects are identified as appropriate before the residual environmental effects are assessed.
- 10.3 This Chapter is supported by the following technical appendices provided at Volume 3 to this ES:
- **Appendix 10.1:** Transport Assessmentⁱ
 - **Appendix 10.2:** Match Day Interim Travel Planⁱⁱ
 - **Appendix 10.3:** Non-Match Day Interim Travel Planⁱⁱⁱ
 - **Appendix 10.4:** Draft Construction Traffic Management Plan

Legislation and Policy

- 10.4 This section sets out legislation, national and local policy and guidance of relevance to the technical assessment in this Chapter.

Legislation

Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2011 (as amended 2015) (Statutory Instrument 1824).^{iv}

- 10.5 Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2011 set out the procedures for Environmental Impact Assessment.

National Policy

Institute of Environmental Management and Assessment Guidelines: Environmental Assessment of Traffic and Movement (IEMA, July 2023^v)

- 10.6 This publication, updated in 2023, provides practitioners with good practice advice on how to carry out the assessment of traffic and movement of people as part of a statutory EIA or non-statutory environmental assessment. The methodology has been followed and is explained in the assessment methodology.

National Planning Policy Framework (2023)^{vi}

10.7 The National Planning Policy Framework (NPPF), originally published in 2012 and was most recently updated in December 2023 sets out national policy for delivering sustainable growth and development. The updated NPPF replaces the previous National Planning Framework published in March 2012, revised in July 2018, February 2019 and July 2021. The NPPF aims to make the planning system less complex and more accessible. The NPPF sets out the Government's planning policies for England and how these are expected to be applied. In terms of transport the objectives outlined in NPPF are set out in paragraph 108:

"Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

- a. The potential impacts of development on transport networks can be addressed;*
- b. Opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;*
- c. Opportunities to promote walking, cycling and public transport use are identified and pursued;*
- d. The environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and*
- e. Patterns of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high quality places."*

10.8 When determining planning applications, Paragraph 114 of the NPPF states that:

"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- a. appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location*
- b. Safe and suitable access to the Site can be achieved for all users;*
- c. The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code 46; and*
- d. Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree."*

10.9 Paragraph 115 states:

“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.”

- 10.10 Having regard to the above objectives, the Proposed Development access and movement will connect to the adjacent community and sustainable travel network.

Planning Practice Guidance: Travel Plans, Transport Assessments and Statements (2014)^{vii}

- 10.11 Planning Practice Guidance - Travel Plans, Transport Assessments and Statements (PPG) was published in March 2014 and provides a concise report on the use and importance of Transport Assessments/Statements and Travel Plans. With regard to whether to provide a Transport Assessment, Transport Statement or no assessment, the guidance states:

“Local planning authorities, developers, relevant transport authorities, and neighbourhood planning organisations should agree what evaluation is needed in each instance.”

- 10.12 The guidance states that Transport Assessments/Statements and Travel Plans can positively contribute to:

- *Encouraging sustainable travel;*
- *Lessening traffic generation and its detrimental impacts;*
- *Reducing carbon emissions and climate impacts;*
- *Creating accessible, connected, inclusive communities;*
- *Improving health outcomes and quality of life;*
- *Improving road safety; and*
- *Reducing the need for new development to increase existing road capacity or provide new roads.*

- 10.13 The guidance states that Transport Assessments/Statements and Travel Plans should be proportionate to the size and scope of the Proposed Development, be tailored to particular local circumstances and be established at the earliest practicable stage of a development proposal.

- 10.14 The guidance continues by stating that these reports should be brought forward through collaborative ongoing working between the Local Planning Authority, Transport Authority, transport operators, Rail Network Operators, National Highways and other relevant bodies.

- 10.15 A Transport Assessment¹ has been prepared to consider the transport related effects associated with the Proposed Development, which has been scoped with OCC. This can be found at **Appendix 10.1**.

Transport Decarbonisation Plan 2021^{viii}

10.16 The Transport Decarbonisation Plan published in July 2021 sets out how to deliver carbon emission reductions from all modes of transport to achieve net zero by 2050. The strategic priorities of the plan are:

- Priority 1: Accelerating modal shift to public and active transport;*
- Priority 2: Decarbonising Road Transport;*
- Priority 3: Decarbonising how we get our goods;*
- Priority 4: Place-based solutions;*
- Priority 5: UK as a hub for green transport, technology, and innovation; and*
- Priority 6: Reducing carbon in a global economy.*

10.17 It is recognised *“that the government has a role in helping Local Planning and Highways Authorities to better plan for sustainable transport and develop innovative policies to reduce car dependency. We need to move away from transport planning based on predicting future demand to provide capacity (‘predict and provide’) to planning that sets an outcome communities want to achieve and provides the transport solutions to deliver those outcomes (sometimes referred to as ‘vision and validate’)... Achieving these ambitions will require a long-term collective effort across government, local authorities, communities, businesses, and developers.”*

Local Policy

Cherwell Local Plan 2011-2031^{ix}

10.18 The Adopted Cherwell Local Plan contains strategic planning policies for development and use of land. The transport related in the Plan include:

- Policy PSD1 – Presumption in Favour of Sustainable Development. When considering development proposals, the Council will take a proactive approach to reflect the presumption in favour of sustainable development contained in the National Planning Policy Framework.
- Policy SLE4: 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.

Local Transport and Connectivity Plan (2022)^x

10.19 Oxfordshire County Council (‘OCC’) adopted its Local Transport and Connectivity Plan (‘LTCP’) in July 2022, which sets out *“a clear vision to deliver a net-zero transport system that enables*

Oxfordshire to thrive, protects the environment and makes the county a better place to live for all residents”.

- 10.20 LTCP includes ambitious targets such as:
- Reducing 1 in 4 car trips by 2030;
 - Delivering a net-zero transport network by 2040; and
 - Having zero, or as close as possible, road fatalities or life-changing injuries by 2050.
 - This is planned to be achieved by:
 - Reducing the need to travel;
 - Discouraging individual private vehicle journeys; and
 - Making walking, cycling, public and shared transport the natural first choice.

The Active Travel Strategy (2022)^{xi}

10.21 The Active Travel Strategy supports Oxfordshire’s Local Transport and Connectivity Plan (‘LTCP’) with its vision to create an inclusive and safe net-zero Oxfordshire transport system.

10.22 The strategy focuses on active travel modes (walking, wheeling, and cycling) and sets out specific visions for walking and cycling in Oxfordshire, and a target to increase the number of cycle trips to 1 million by 2031, county-wide, from the current level of 600,000.

“In order to achieve this, 5 priorities for council action are identified:

- *commitment and governance - a clear promise at all levels across the council to treat walking and cycling as a policy priority*
- *walkable communities - a compact urban realm with easy to reach destinations on foot and by cycle*
- *inclusive cycle networks - that are safe, identifiable, visible, comprehensive and of high quality, including links across towns and villages*
- *managing motor traffic - through measures such as modal filters, reducing traffic speeds, reducing road capacity and increasing the cost of parking*
- *building the cultural norm - a local social consensus and practice that supports and promotes walking and cycling and enables residents build their lives around active travel modes for local journeys”*

10.23 A list of 79 actions is identified, which *“span from council transformation and data-gathering to cycle parking, accessibility barriers and community outreach”.*

Oxfordshire County Council Guidance for New Developments: Transport Assessments (2014)^{xii}

- 10.24 The OCC Guidance for New Developments: Transport Assessments and Travel Plans (March 2014) document sets out the format and requirements of Transport Assessments and Travel Plans associated with new developments throughout Oxfordshire. It sits under the overarching policies set out in the Council's Local Transport Plan.
- 10.25 Appendix 1 of the guidance states that any development proposals generating more than 30 two-way vehicular movements in any hour, or more than 100 two-way vehicular movements in 24 hours, or more than 100 parking spaces, requires a Transport Assessment and Travel Plan.

Other Relevant Guidance and Best Practice

Design Manual for Roads and Bridges ('DMRB'), National Highways^{xiii}

- 10.26 Other guidance that has been referred in assessing traffic and movement is DMRB. This has been used in determining significance levels, which are outlined in the assessment Methodology and referenced in that section.

LA112 Population and Human Health^{xiv}

- 10.27 This document sets out the requirements for assessing and reporting the environmental effects on population and health from construction, operation and maintenance of highways projects. In particular, it sets out new significance criteria relating to sensitivity values for walkers, cyclists and horse riders based on traffic flow thresholds.

Assessment Methodology and Significance Criteria

Scope of Assessment

- 10.28 The proposed methodology has been determined from best practice and guidance consisting of 'Environmental Assessment of Traffic and Movement' produced by the Institute of Environmental Management and Assessment (IEMA) in July 2023⁵ ('the IEMA Guidance').
- 10.29 The Transport Assessment considers the development traffic generated by the Proposed Development, Committed Development in the area and 2018 and 2023 surveyed link flows, factored to 2026 (planned opening year).
- 10.30 The following traffic surveys have been provided by OCC:
- Manual classified turning counts at:

- A4260 Kidlington Roundabout - 07:00 - to 18:00 on 10/05/2018
- A40 Cutteslowe Roundabout - 07:00 - to 18:00 on 10/05/2018
- A44 Wolvercote Roundabout - 07:00 - to 18:00 on 10/05/2018
- A34 Peartree Intersection - 07:00 - to 18:00 on 10/05/2018
- A44 Woodstock Road/Frieze Way (Loop Farm) - 07:00 - to 18:00 on 10/05/2018
- A4165 Oxford Road/Water Eaton P&R -07:00 - to 18:00 on 10/05/2018
- A44 Woodstock Road/Peartree P&R - 07:00 - to 18:00 on 10/05/2018
- Automatic Traffic Counts at:
 - A4165, near Oxford Road/Water Eaton P&R - 2 weeks from 08/05/2018
 - A44 Woodstock Road/Frieze Way (Loop Farm) - 2 weeks from 08/05/2018
 - A44 Woodstock Road, Wolvercote Roundabout – 1 week from 12/03/2018
 - A40, Oxford - 2 weeks from 08/03/2018
 - A4165 Banbury Road, Oxford ATC – 2 weeks from 08/03/2018
- Queue Length Survey at:
 - A4260 Kidlington Roundabout - 07:00 - to 18:00 on 10/05/2018
 - A40 Cutteslowe Roundabout - 07:00 - to 18:00 on 10/05/2018
 - A44 Wolvercote Roundabout - 07:00 - to 18:00 on 10/05/2018
 - A34 Peartree Intersection - 07:00 - to 18:00 on 10/05/2018
 - A44 Woodstock Road/Frieze Way (Loop Farm) - 07:00 - to 18:00 on 10/05/2018

10.31 More recent traffic surveys have been undertaken between 25th November 2023 to 6th December 2023 to obtain up-to-date traffic data at links in the areas that are most likely to be impacted from the Proposed Development. These are:

- Manual classified turning counts and queue length surveys at:
 - A4260 Kidlington Roundabout – 24 hours on 09/11/2023 and 10.00 to 19.00 on 11/11/23
 - Loop Farm Roundabout – 24 hours on 09/11/2023 and 10.00 to 19.00 on 11/11/23
 - A34 Peartree Roundabout – 24 hours on 09/11/2023 and 10.00 to 19.00 on 11/11/23
 - A44 Wolvercote Roundabout – 24 hours on 09/11/2023 and 10.00 to 19.00 on 11/11/23
 - A40 Cutteslowe Roundabout – 24 hours on 09/11/2023 and 10.00 to 19.00 on 11/11/23
 - Oxford Road / Loverose Way – 24 hours on 09/11/2023 and 10.00 to 19.00 on 11/11/23
 - A4165 Oxford Road near Water Eaton P&R – 24 hours on 09/11/2023 and 10.00 to 19.00 on 11/11/23
- Automatic Traffic Counts at:
 - Bicester Road< Kidlington Roundabout – over 16 day period covering manual classified count (MCC) surveys

- Oxford Road, Kidlington Roundabout (both arms) – over 16 day period covering MCC surveys
- A4260 Frieze Way, Kidlington Roundabout– over 16 day period covering MCC surveys
- A4260 Frieze Way, Loop Farm Roundabout– over 16 day period covering MCC surveys
- A44 Woodstock Road, Loop Farm Roundabout (both arms) – over 16 day period covering MCC surveys
- A34, Peartree Roundabout (both arms) – over 16 day period covering MCC surveys
- A40, Wolvercote Roundabout – over 16 day period covering MCC surveys
- Godstow Road, Wolvercote Roundabout– over 16 day period covering MCC surveys
- Five Mile Drive– over 16 day period covering MCC surveys
- Banbury Road, Cutteslowe Roundabout– over 16 day period covering MCC surveys
- A40, North Way, Cutteslowe Roundabout– over 16 day period covering MCC surveys
- A4165 Banbury Road, Cutteslowe Roundabout– over 16 day period covering MCC surveys
- A44 Woodstock Road, south of P&R– over 16 day period covering MCC surveys
- A4144 Woodstock Road– over 16 day period covering MCC surveys
- A40, between Cutteslowe and Wolvercote Roundabouts– over 16 day period covering MCC surveys

10.32 The above data and subsequent assessment provided in the Transport Assessment¹ form the basis for determining the environmental impact of the Proposed Development. The EIA also considers the construction phase, which is assessed at 2025 as the peak construction year.

Consultation

10.33 The EIA Scoping Report was submitted in August 2023 and comments were received on 29th September 2023 from Oxfordshire County Council.

Scenarios

10.34 In line with IEMA guidance, the assessment for this chapter will consider the following scenarios as shown in **Table 10.1**

10.35 Scenarios 1 and 3 represent the baseline without Proposed Development or construction traffic respectively. 2025 is considered the peak construction year and 2026 opening year.

Table 10.1: Scenarios

Title	Description
Construction Phase	
Scenario 1 (baseline)	2025 Without Development
Scenario 2	2025 With Construction Traffic

Operational Phase	
Scenario 3 (baseline)	2026 Without Development
Scenario 4	2026 With Development

Study Area

- 10.36 The IEMA guidance sets out that from a traffic and transport standpoint, the scale and extent of the adopted study area for assessment should consider the highways links which fall within two rules:
- Rule 1: include highways links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
 - Rule 2: include any other specifically sensitive areas where traffic flows have increased by 10% or more.
- 10.37 It should be noted that, as outlined in IEMA Guidance:
- *“Transport Assessments report the overall transport strategy for development sites to maximise accessibility for non-car modes of transport, but also assess the traffic impact of the proposals based on an assessment of conditions on the highway network in peak periods.*
 - *Traffic and movement assessments for EIA and non-statutory environmental assessments present the impact of traffic and movement on people and the environment – which are initially undertaken with reference to daily traffic flows prior to assessing the time period with the highest potential impact (i.e. degree of change from baseline conditions), which may not be the same as the time period with the highest baseline traffic flows.”*
- 10.38 An initial net impact exercise was undertaken to identify the areas of the network which may be significantly affected following construction and during operation of the site. The links listed below have initially been examined to focus this environmental assessment. The location of these links is shown in **Figure 10.1**:
1. A4260 Oxford Road (North section)
 2. Bicester Road (North section)
 3. Frieze Way (North section)
 4. A4165 Oxford Road (South section)
 5. A4165 Banbury Road (North section)
 6. A40 Elsfield Way
 7. A4165 Banbury Road (South section)
 8. A40 North Way
 9. A44 Woodstock Road (Central section)
 10. A44 Woodstock Road (South section)
 11. A40 Northern Bypass Road
 12. A44 Woodstock Road (North section)
 13. A44 (Central section)

14. A34 (South section)
15. A34 (North section)
16. Godstow Road

Sensitivity

10.39 IEMA guidelines (2023)⁵ includes the following list of special interests that should be considered when defining sensitive receptor geographic locations:

- People at home
- People at work
- Sensitive and/or vulnerable groups (including young age; older age; income; health status; social disadvantage; and access and geographic factors)
- Locations with concentrations of vulnerable users (e.g. hospitals, places of worship, schools)
- Retail areas
- Recreational areas
- Tourist attractions
- Collision clusters and routes with road safety concerns
- Junctions and highway links at (or over) capacity

10.40 **Table 10.2** sets out the likely sensitive receptors which are located along each link (presented in **Figure 10.1**) and in turn allocating sensitivity to each link.

Table 10.2 Sensitivity of Receptors

Sensitivity Rating	Link Ref.	Street Name	Receptor	Description
Low	1	Oxford Road (N)	Residential frontages	A road with footways. Residential frontages are segregated from main carriageway
Low	2	Bicester Road (N)	Limited. Back gardens on eastern side	Footway on one side.
Medium	3	Frieze Way (N)	Stratfield Brake sports ground	Dual carriageway, access to sports ground
Medium	4	A4165 Oxford Road (S)	Limited	A road, Footways on both sides. Will have significant pedestrian footfall with Proposed Development on match days
Medium	5	A4165 Banbury Road (N)	Residential frontages Congested Cuttleslowe Roundabout	A road, shared cycle footways on both sides
Medium	6	A40 Elsfield Way	Some residential frontages Congested Cuttleslowe Roundabout	Dual carriageway, footways both sides
Medium	7	A4165 Banbury Road (S)	Residential frontages, retail area, congested Cuttleslowe Roundabout	A road with cycle footway one side, and footway other side
Medium	8	A40 North Way	Residential frontages Congested Wolvercote	A road carrying significant traffic. Residential frontage

			and Cuttleslowe Roundabout	segregated from main carriageway
Medium	9	A44 Woodstock Road (C)	Congested Wolvercote Roundabout	A road carrying significant traffic. Dual carriageway
Medium	10	A44 Woodstock Road (S)	Some residential frontages Congested Wolvercote Roundabout	A road footway one side
Medium	11	A40 Northern Bypass road	Congested Wolvercote Roundabout	A road carrying significant traffic. Dual carriageway
Low	12	A44 Woodstock Road (N)	Limited	A road , single carriageway footway one side
Low	13	A44 (C)	Limited	A road carrying significant traffic. Dual carriageway
Low	14	A34 (S)	Limited	A road carrying significant traffic
Low	15	A34 (N)	Limited	A road carrying significant traffic
Medium	16	Godstow Road	Residential frontages Congested Wolvercote Roundabout	Single carriageway, Footway one side

10.41 **Tables 10.3 and 10.4** below show the AADT traffic flows by direction on all links set out in **Figure 10.1** for 2026 Without and With Development. This covers both all vehicle traffic (**Table 10.3**) and HGV traffic only (**Table 10.4**). The percentage change is derived in the final column.

Table 10.3: Traffic Flows: % Change with Proposed Development (All Vehicles)

Link	Street Name	Direction	2026 AADT Without Development (All Veh)	2026 AADT With Development (All Veh)	% Change
1	Oxford Road (N)	NB	10,029	10,436	4.1%
		SB	12,011	12,418	3.4%
2	Bicester Road (N)	NB	7,437	7,607	2.3%
		SB	5,140	5,310	3.3%
3	Frieze Way (N)	NB	5,862	6,363	8.5%
		SB	8,670	10,451	20.5%
4	A4165 Oxford Road (S)	NB	14,149	14,571	3.0%
		SB	11,101	11,523	3.8%
5	A4165 Banbury Road (N)	NB	9,972	10,394	4.2%
		SB	11,312	11,734	3.7%
6	A40 Elsfield Way	EB	22,068	22,196	0.6%
		WB	21,833	21,961	0.6%
7	A4165 Banbury Road (S)	NB	5,257	5,312	1.0%
		SB	4,578	4,632	1.2%
8	A40 North Way	EB	16,777	16,829	0.3%
		WB	15,312	15,436	0.8%
9	A44 Woodstock Road (C)	NB	15,924	16,077	1.0%
		SB	16,614	16,747	0.8%
10	A44 Woodstock Road (S)	EB	8,793	8,829	0.4%
		WB	9,202	9,238	0.4%
11	A40 Northern Bypass road	EB	11,132	11,196	0.6%
		WB	13,721	13,785	0.5%
12	A44 Woodstock Road (N)	NB	13,668	13,917	1.8%

		SB	13,283	13,531	1.9%
13	A44 (C)	NB	13,645	13,890	1.8%
		SB	16,772	17,033	1.6%
14	A34 (S)	NB	27,118	27,234	0.4%
		SB	28,744	28,859	0.4%
15	A34 (N)	NB	28,881	28,935	0.2%
		SB	28,132	28,186	0.2%
16	Godstow Road	NB	2,346	2,357	0.5%
		SB	2,697	2,709	0.4%

Table 10.4: Traffic Flows: % Change with Proposed Development (HGVs)

Link	Street Name	Direction	2026 Without Development (HGVs)	2026 With Development (HGVs)	% Change
1	Oxford Road (N)	NB	364	364	0.0%
		SB	404	404	0.0%
2	Bicester Road (N)	NB	301	301	0.0%
		SB	260	260	0.0%
3	Frieze Way (N)	NB	110	117	6.6%
		SB	103	118	14.0%
4	A4165 Oxford Road (S)	NB	491	495	1.0%
		SB	487	492	1.0%
5	A4165 Banbury Road (N)	NB	314	314	0.0%
		SB	331	331	0.0%
6	A40 Elfield Way	EB	821	824	0.4%
		WB	761	764	0.4%
7	A4165 Banbury Road (S)	NB	209	209	0.0%
		SB	171	171	0.0%
8	A40 North Way	EB	851	855	0.4%
		WB	548	551	0.6%
9	A44 Woodstock Road (C)	NB	768	771	0.4%
		SB	873	877	0.4%
10	A44 Woodstock Road (S)	EB	318	318	0.0%
		WB	304	304	0.0%
11	A40 Northern Bypass road	EB	649	650	0.2%
		WB	907	908	0.1%
12	A44 Woodstock Road (N)	NB	258	261	1.4%
		SB	310	314	1.1%
13	A44 (C)	NB	473	479	1.2%
		SB	469	475	1.2%
14	A34 (S)	NB	4,601	4,603	0.0%
		SB	4,457	4,459	0.0%
15	A34 (N)	NB	4,601	4,603	0.0%
		SB	4,457	4,458	0.0%
16	Godstow Road	NB	23	23	0.0%
		SB	20	20	0.0%

10.42 **Tables 10.5 and 10.6** provide the Daily traffic flows for a match day and HGV traffic. The percentage change is derived in the final column.

Table 10.5: Match Day Traffic Flows: % Change with Proposed Development (All Vehicles)

Link	Road Name	Direction	2026 Without Development (All Veh)	2026 With Development (All Veh)	% Change All Veh
1	A4260 Oxford Road (N)	NB	10,029	10,228	2.0%
		SB	12,011	12,211	1.7%
2	Bicester Road (N)	NB	7,437	7,520	1.1%
		SB	5,140	5,223	1.6%
3	Frieze Way (N)	NB	5,862	6,152	4.9%
		SB	8,670	9,479	9.3%
4	A4165 Oxford Road (S)	NB	14,149	14,452	2.1%
		SB	11,101	11,404	2.7%
5	A4165 Banbury Road (N)	NB	9,972	10,275	3.0%
		SB	11,312	11,615	2.7%
6	Elsfield Way	EB	22,068	22,165	0.4%
		WB	21,833	21,930	0.4%
7	A4165 Banbury Road (S)	NB	5,257	5,299	0.8%
		SB	4,578	4,619	0.9%
8	A40 North Way	EB	16,777	16,833	0.3%
		WB	15,312	15,418	0.7%
9	A44 Woodstock Road (C)	NB	15,924	16,166	1.5%
		SB	16,614	16,842	1.4%
10	A44 Woodstock Road (S)	EB	8,793	8,827	0.4%
		WB	9,202	9,235	0.4%
11	A40 Northern Bypass Road	EB	11,132	11,192	0.5%
		WB	13,721	13,781	0.4%
12	A44 Woodstock Road (N)	NB	13,668	13,812	1.1%
		SB	13,283	13,427	1.1%
13	A44 (C)	NB	13,645	13,792	1.1%
		SB	16,772	16,930	0.9%
14	A34 (S)	NB	27,118	27,207	0.3%
		SB	28,744	28,833	0.3%
15	A34 (N)	NB	28,881	28,923	0.1%
		SB	28,132	28,174	0.1%
16	Godstow Road	NB	2,346	2,356	0.5%
		SB	2,697	2,708	0.4%

Table 10.6: Match Day Traffic Flows: % Change with Proposed Development (HGVs)

Location	Road Name	Direction	2026 Without Development (HGVs)	2026 With Development (HGVs)	% Change HGV
1	A4260 Oxford Road (N)	NB	364	364	0.0%
		SB	404	404	0.0%
2	Bicester Road (N)	NB	301	301	0.0%
		SB	260	260	0.0%
3	Frieze Way (N)	NB	117	152	29.5%
		SB	118	176	50.0%
4	A4165 Oxford Road (S)	NB	495	512	3.3%
		SB	492	508	3.3%
5	A4165 Banbury Road (N)	NB	314	314	0.0%
		SB	331	331	0.0%
6	Elsfield Way	EB	824	835	1.3%

		WB	764	775	1.4%
7	A4165 Banbury Road (S)	NB	209	209	0.0%
		SB	171	171	0.0%
8	A40 North Way	EB	855	866	1.3%
		WB	551	562	2.0%
9	A44 Woodstock Road (C)	NB	771	784	1.7%
		SB	877	890	1.5%
10	A44 Woodstock Road (S)	EB	318	318	0.0%
		WB	304	304	0.0%
11	A40 Northern Bypass Road	EB	650	655	0.6%
		WB	908	912	0.5%
12	A44 Woodstock Road (N)	NB	261	273	4.6%
		SB	314	325	3.8%
13	A44 (C)	NB	479	497	3.8%
		SB	475	493	3.9%
14	A34 (S)	NB	4603	4610	0.1%
		SB	4459	4465	0.2%
15	A34 (N)	NB	4603	4610	0.1%
		SB	4458	4465	0.1%
16	Godstow Road	NB	23	23	0.0%
		SB	20	20	0.0%

10.43 Using AADT data, Rules 1 and 2 as set out in 10.36, is only met on Freize Way (N) south bound. This Highway Link is classified as Medium sensitivity and is forecast to have more than 10% HGV traffic flow with the development traffic.

10.44 On a Match Day, Freize Way (N) northbound and southbound exceeds Rule 2 with more than 10% HGV traffic flow with the match day traffic flow.

10.45 Driver Delay (see 10.57 for further information) is assessed based upon peak period data rather than AADT for both construction and operation phases. IEMA Guidance advises that judgement will inevitably be required in the consideration of sensitive environmental or population receptors in the vicinity of a development. **Table 10.7** summarises the % change relating to PM peak match day hours (as the worst case) for those links associated with congested junctions identified in **Table 10.8**.

Table 10.7: PM Peak Hour Match Day % Change on Links Associated with Congested Junctions

Link Name	PM Peak Hour Flow	PM Peak Hour with Match Day flow	% Change
A4165 Banbury Road (N)	1,487	1,561	5%
A40 Elsfeld Way	2,767	2,790	1%
A4165 Banbury Road (S)	450	460	2%
A40 North Way	1,971	1,992	1%
A44 Woodstock Road (C)	2,350	2,405	2%
A44 Woodstock Road (S)	1,440	1,447	1%

A40 Northern Bypass road	1,398	1,412	1%
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10.46 **Table 10.8** shows the links included in the assessment plus reasons given for inclusion.

Table 10.8: Links Included in EIA Assessment

Link	Street Name	Reason for Inclusion in EIA Assessment
3	Frieze Way (N)	A Medium Sensitivity Link with HGV Traffic over 10% in the operational period Daily traffic over 10% increase on Match Days
4	A4165 Oxford Road (S)	A Medium Sensitivity Link which will have significant pedestrian footfall in match day scenarios (temporary impact)
5	A4165 Banbury Road (N)	A Medium Sensitivity Link close to Cuttleslowe roundabout which has over 10% change in traffic flow in PM match day peak period
6	A40 Elsfield Way	A Medium Sensitivity Link close to Cuttleslowe roundabout which is expected to operate at capacity on a match day in peak hour
7	A4165 Banbury Road (S)	A Medium Sensitivity Link close to Cuttleslowe roundabout which expected to operate at capacity on a match day in peak hour
8	A40 North Way	A Medium Sensitivity Link close to Wolvercote and Cuttleslowe roundabouts which has over 10% change in traffic flow in PM match day peak period
9	A44 Woodstock Road (C)	A Medium Sensitivity Link close to Wolvercote roundabout which expected to operate at capacity on a match day in peak hour.
10	A44 Woodstock Road (S)	A Medium Sensitivity Link close to Wolvercote roundabout which is expected to operate at capacity on a match day in peak hour
11	A40 Northern Bypass Road	A Medium Sensitivity Link close to Wolvercote roundabout which is expected to operate at capacity on a match day in peak hour
16	Godstow Road	A Medium Sensitivity Link close to Wolvercote roundabout which is expected to operate at capacity on a match day in peak hour

10.47 **Table 10.8** highlights those links that associated with congested junctions. Assessment of peak hour traffic on match days is specifically considered with regards to Driver Delay in relation to junctions.

Significance Criteria

10.48 The likely significant environmental effects of the proposed development are considered for both the construction and operational phase. The methodology to determine the significance of environmental effects is typically derived from a function of receptor sensitivity to a change in traffic conditions and the magnitude of change of the impact.

10.49 **Table 10.9** shows the significance matrix used to determine the significance of environmental transport effects.

Table 10.9: Significance Matrix

Magnitude	Sensitivity of Receptor			
	High	Medium	Low	Negligible
High	Major	Major/Moderate	Moderate/Minor	Negligible
Medium	Major/Moderate	Moderate	Minor	Negligible
Low	Moderate/Minor	Minor	Minor/Negligible	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

10.50 Further to the level of significance, environmental effects will also be determined by whether effects are temporary or permanent, and whether they are beneficial or adverse.

10.51 The definitions of each of the potential effects identified are set out below with an explanation of each assessment criterion which have been derived from the IEMA Guidance (2023)⁵. It is on this basis this chapter considers the following environmental categories:

- Severance of communities
- Road vehicle driver and passenger delay
- Non-motorised User Delay
- Non-motorised amenity
- Fear and Intimidation on and by road users
- Road user and pedestrian safety
- Hazardous/large loads

10.52 In each of these categories, significance is determined by establishing the sensitivity of each receptor and the magnitude of change.

Severance

10.53 Severance is described by the IEMA Guidance (2023)⁵ as “*a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by infrastructure*”. Factors that need to be considered include road width, traffic flow and composition, traffic speeds, the availability of crossing facilities and number of movements to cross affected route. Equally different groups in the community can be affected in different ways.

10.54 In 2020 Volume 11 of the Design Manual for Roads and Bridges (DRMB) was replaced by LA112 Population and Human Health^{xv}. This sets out new significance criteria relating to sensitivity values for walkers, cyclists and horse riders based on traffic flow thresholds.

- 10.55 The measurement and predication of severance includes an assessment of a range of factors some of which are related to an individual's perception and therefore can be difficult to quantify. Historically, severance has been judged from a number of sources. The Department for Transport previously set out a range of indicators for determining significance of severance based on changes in traffic flows of 30%, 60% and 90%. These indicators were set out in Volume 11, Section 3, Part 8, Chapter 6 of the DRMB "Pedestrians and Others and Community Effects" ^{xvi} which has historically been used to provide further guidance on severance based on impact of 2 way AADT on a receptor.
- 10.56 **Table 10.10** summarises these thresholds which aim to prevent minor changes on links with low baseline flows from being considered disproportionately significant. A potentially high magnitude is therefore only considered to occur if the baseline traffic flow is increased to any of the levels shown below. The magnitude taken with the sensitivity of link will establish the significant of severance effects.

Table 10.10: Severance Magnitude Scale

Magnitude	Description of Change in Traffic Flow
High	Links subject to 90+ % traffic flow increase per day or AADT in excess of 16,000
Medium	Links subject to 60% to 89% traffic flow increase per day or AADT between 8,000 and 16,000
Low	Links subject to 30%-59% traffic flow increase per day or AADT below 8,000
Negligible	Links with daily traffic flow increases 29% and below

Driver Delay

- 10.57 IEMA Guidelines⁵ do not set specific thresholds for driver delay, but they do state that driver delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system. The assessment of this has been informed with interim junction capacity assessments, but will be updated within an Addendum to this Chapter, when the North Oxford VISSIM modelling is completed, as outlined in the Transport Assessment paragraph 10.1.3.
- 10.58 Though the guidelines do not set specific thresholds, **Table 10.11** shows the scale of magnitude of driver delay which is applied.

Table 10.11: Driver Delay Magnitude Scale

Magnitude	Description of Change in Traffic Flow
High	Average vehicle delay changes is estimated to be more than 1 minute as a result of the Proposed Development during the peak hour periods
Medium	Average vehicle delay changes are estimated to be between 30 and 60 seconds as a result of the Proposed Development during the peak hour periods
Low	Average vehicle delay changes are estimated to be between 20 and 30 seconds as a result of the Proposed Development during the peak hour periods
Negligible	Average vehicle delay changes are is estimated to be less than 20 seconds as a result of the Proposed Development during the peak hour periods

Pedestrian Delay (incorporating delay to all non-motorised users)

- 10.59 Pedestrian delay refers to how people may be affected by changes in the volume, composition, or speed of traffic in relation to crossing a road. Typically, the greater the volume of traffic results in an increased pedestrian delay, though other elements such as the level of pedestrian activity, visibility, and the general physical conditions of a site and crossing points for pedestrian use can also impact pedestrian delay.
- 10.60 There are no definitive thresholds set for pedestrian delay, instead it is recommended that a competent traffic and movement expert uses their professional judgement to determine whether pedestrian delay constitutes a significant effect. The pedestrian delay magnitude scale used is shown in **Table 10.12**, which is based on Manual for Streets (2007)^{xviii} threshold of 10,000 vehicles per day for traffic flow and road safety for streets with direct frontage access. Peak hour flow is estimated at approximately 8.5% of daily flow (850 vehicles), although this has been reduced to 8% (800 vehicles) in order to provide a robust assessment threshold.

Table 10.12: Pedestrian Delay Magnitude Scale

Magnitude	Description of Change in Traffic Flow
Large	Change in Traffic Flow of >50%
Medium	Changes in Traffic Flow of 40-50%
Small	Changes in Traffic Flow of 30-40%
Negligible	Changes in Traffic Flow of <30% or Traffic Flows less than 800 vehicles per hour

Non-motorised User Amenity

- 10.61 Pedestrian amenity is defined as the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and pavement width and /or separation from traffic. The IEMA Guidelines⁵ suggest a tentative threshold for assessing the significance of changes in pedestrian or cyclist amenity where the traffic flow is halved or doubled. These should be used cautiously however as the assessment of amenity should take full regard to specific local conditions. The guidance suggests that assessors use their judgement to determine whether change to pedestrian amenity is a significant effect. As such, the magnitude of change for pedestrian amenity has been ascribed qualitatively, using professional judgement.

Fear and Intimidation

- 10.62 Pedestrians can experience fear and intimidation from all moving objects, this can include cars, buses, lorries, motorcycles, e-scooters and cycles. The extent of fear and intimidation depends on:
- Total volume of traffic
 - Heavy vehicle composition
 - Speed vehicles are passing

- Proximity of traffic to people

10.63 Similar to non-motorised amenity, there is no commonly agreed thresholds for determining the magnitude of this impact, with appraisal based on the judgement of the assessor. Within the IEMA guidelines (2023)⁵ a weighting system has been defined within these to help assessors provide a first approximation of the likelihood of pedestrian fear and intimidation.

10.64 The degree of hazard is assessed with reference to the established thresholds, and a score provided for each combination on a highway link under consideration as shown in **Table 10.13 – 10.15**.

Table 10.13: Fear and Intimidation degree of hazard

Average traffic flow over 18 hour day all vehicle/hour 2 way	Total 18 hour heavy vehicle flow	Average vehicle speed	Degree of hazard score
+1800	+3000	>40	30
1200-1800	2000-3000	30-40	20
600-1200	1000-2000	20-30	10
<600	<1000	<20	0

Table 10.14: Levels of Fear and Intimidation

Level	Total Hazard Score
Extreme	71+
Great	41-70
Moderate	21-40
Small	0-20

Table 10.15: Fear and Intimidation Magnitude of Impact

Magnitude of Impact	Change in step/traffic flows (AADT) from baseline conditions
High	Two step changes in level
Medium	One step change in level, but with: >400 vehicle increase in average 18hr AV 2 way flow and/or >500 HV increase in total 18 hr HV flow
Low	One step change in level, but with: <400 vehicle increase in average 18hr AV 2 way flow and/or <500 HV increase in total 18 hr HV flow
Negligible	No change in level

Road Safety

10.65 The IEMA guidelines⁵ state that the overall changes in vehicle kilometres along different classes of road within the network can be the basis of understanding the change in the number of accidents. However, specific criteria have not been set out within the guidelines regarding how to identify impact and magnitude.

10.66 Detailed analysis of personal injury collision data within the study area has been undertaken as part of the Transport Assessment¹ and will be summarised in this ES chapter. Consideration is also given

to area with clusters of collisions that could potentially cause a road safety issue. The assessment of clusters is based on qualitative assessment from professional judgement.

Hazardous Loads/Large Loads

- 10.67 This development is not expected to generate any hazardous loads and therefore the impact has not been tested within this section for either the construction or operational phases.
- 10.68 With regard to any large or abnormal loads, appropriate routes and mitigation strategies must be applied to secure safe passage.

Limitations of the Assessment

- 10.69 This assessment has been undertaken using knowledge and information made available by the Applicant, OUFC, and members of the project team, OCC, together with other readily available and publicly accessible material including existing literature and studies. This includes the information within the associated Transport Assessment¹.
- 10.70 The information used as a basis for assessment considered to be accurate and up to date. The results related to operational driver delay are based upon interim assessments, as explained in paragraph 10.57.
- 10.71 Any assumptions adopted in the evaluation of impacts reports in the chapter are often implicit and rely on professional judgement. Where it has been necessary to make assumptions, these are documented.

Baseline Conditions

- 10.72 A detailed audit of the baseline environment is presented within the Transport Assessment¹.
- 10.73 Baseline AADT traffic flows are presented in **Table 10.3** as 2026 without Development scenario. Match Day/Non-Match Day and peak period traffic flows are presented in the Transport Assessment.
- 10.74 The Site is located is located 6km north of Oxford, bound by Kidlington Roundabout to the north, Oxford Road to the north-east, Frieze Way (A4260) to the west and woodland to the south. To the southeast of the Site is Oxford Parkway Railway Station and the Park and Ride, to the east of the Site is agricultural land which is allocated within the Local Plan for residential development with Public Open Space (site PR7) and to the west of the Site is Stratfield Brake Sports Ground.

- 10.75 The Site is currently owned by OCC and in agricultural use as a willow plantation with a field gate access on Oxford Road. A summary of existing walking, cycling and public transport connections currently available in proximity of the Site are presented below.

Connectivity and Accessibility

Walking and Cycling

- 10.76 The Site lies within a 5 minute walk (1.4m/s) of Oxford Parkway Station and bus stops on Oxford Road and Bicester Road. Past the site, on Oxford Road, shared foot/cycleways are present on both sides of the road connecting to bus stops and Oxford Parkway Station. A pedestrian crossing is provided on Oxford Road adjacent to Oxford Parkway plus informal crossing points with dropped kerbs and tactile paving on all arms of the Kidlington Roundabout.
- 10.77 A public right of way route 229/4/2 runs from the eastern side north of Water Eaton Bridge following the A34 on the northern boundary towards Water Eaton Lane. There is also a historic but disused footway that traverses the southern boundary of the site through Stratfield Brake, now severed by the A4260.
- 10.78 Within a 20 minute cycle of Kidlington and parts of Northern Oxford including Summertown can be reached.
- 10.79 OXR4 cycle route runs along Oxford Road adjacent to the Site. OXR3 runs along A44 south of the site. These routes are identified within the Oxford Walking and Cycling network for the LCWIP and connects the Site to Oxford, Kidlington and Woodstock. Oxford City Centre is approximately 6km south of the Site and so approximately 25-minute cycle ride.

Public Transport – Bus

- 10.80 Within 500m or a 6 minutes' walk (1.4m/s) of the Site there are bus stops on Oxford Road (Oxford Parkway Stop E (NB) and Oxford Parkway Stop D (SB) and Bicester Road (NB and SB).
- 10.81 These stops provide access to number of regular services connecting the Site to Oxford, Bicester and Kidlington.

Public Transport – Park and Ride

- 10.82 There are five Park and Ride sites within Oxford, the closest of which is Oxford Parkway Park and Ride which lies adjacent to Oxford Parkway Station, providing 758 spaces. The next closest is Peartree Park and Ride, located next to the Peartree roundabout, the A34 and A44 and is

approximately 2.4km from the site and provides 1,035 spaces. Park and Ride bus tickets are available as per Oxford Parkway, or separate parking only tickets for up to 72 hours.

- 10.83 Seacourt Park and Ride (1,389 spaces) is located 7.8km south-west of the Site off the Botley interchange with the A34. Again, separate parking or combined park and bus tickets are available.

Public Transport – Rail

- 10.84 Oxford Parkway Station is located approximately 300m south-east of the Site meaning it is highly accessible by train. The station is on the Oxford-Bicester Line served by Chiltern Railways services and provides 2 services an hour to London Marylebone and Oxford.

Future Baseline

- 10.85 The future baseline accounts for changes that would occur irrespective of the Proposed Development coming forward. Committed developments in the local area that have been included within the 2026 baseline are listed in 10.134 under “Cumulative Impacts”. In addition, the following are included in the Future Baseline:

East-West Rail (Western Section)

- 10.86 The East-West Railway proposals for reopening the route between Bicester, Bletchley and Milton Keynes and Bedford are expected to be completed by spring 2025. This will provide three trains an hour between Oxford, Milton Keynes and Bedford stopping at Oxford Parkway and providing onward connections to the West Coast mainline at Bletchley and Milton Keynes and the Midland Mainline at Bedford.
- 10.87 This route and the proposed services will open up further destinations for home and away supporters to travel to the stadium by National Rail services.

Re-opening of the Cowley Branch Line

- 10.88 The Cowley Branch is planned to open for passenger use by 2030. The two-mile branch leaves the main line south of Oxford, near Hinksey Yard, and is currently used for freight serving the BMW MINI Plant Oxford. Subject to the Cowley Branch reopening by 2030 it would be available to supporters to the south of the City to access Oxford Parkway and the proposed Stadium. It should be noted that a large proportion of OUFC supporters live in Littlemore and Cowley. The assessment considers that either this is delivered or private coaches will operate to/from this area to the new stadium, both options result in the same level of traffic.

Eastern Arc Bus Route

10.89 An 'Eastern Arc Bus Route' is planned to operate a high frequency bus service connecting the arc linking north, east and southern parts of Oxford outside the City Centre. This service is expected to start operating in 2024.

Potential Effects

10.90 The construction phase looks at 2025 as this is the peak year for construction traffic. The development will be operational from 2026.

Embedded Mitigation

10.91 Embedded mitigation measures are those which are embedded into the design and planning of the Proposed Development from the outset, intended to prevent, reduce and where possible offset any significant adverse effects on the environment that would otherwise be inherent to the development. These are taken into account within this assessment of potential effects of the Proposed Development.

Construction Phase

10.92 The embedded mitigation for the construction phase of the development is the implementation of a Construction Traffic Management Plan (CTMP) during the construction phase of the development. The CTMP will set out agreed routes to and from the Site for construction vehicles, together with details of any relevant mitigation measures, designed to minimise any effects associated with the construction works. This will also include relevant signage in the surrounding area and wheel washing facilities to be provided on site, to minimise material left on the roads frequently used by HGVs. A draft CTMP which is included at **Appendix 10.4** which includes measures which can be implemented.

Operational Phase

10.93 The following measures are proposed as part of the sustainable transport strategy for the development:

- Access design, improved pedestrian and cycle paths, and pedestrian crossings on Oxford Road and Freize Way, as shown in the Stadium Site Access Proposals presented in Chapter 5 (Transport Strategy) of the Transport Assessment¹
- Provision of 150 Sheffield stands onsite with access to a further spaces at Oxford Parkway, including electric bike charging.
- A new stepped access to Oxford Parkway from Oxford Road

- Match Day² and Non Match Day³ Interim Travel Plans have been prepared to support this application which outline a package of measures for implementation on match day and non-match days with the aim to reduce the number of single occupancy car trips generated by the Site and promoting sustainable travel modes.
- Shuttle bus services to/from the Park and Ride sites around Oxford on match days (aligned to demand/ticket sales).
- New bus stops on Oxford Road for the existing bus services passing the stadium.
- Increased frequency and longer operating hours of public bus services to the Stadium on match days if demand/ticket sales require.
- A Traffic Management Plan^{xviii} (TMP) has been prepared, within the Transport Assessment, to support this application to manage match day crowds and traffic flows safely and effectively to minimise effects on the wider transport network. The following traffic management measures are being proposed:
 - Traffic management on Oxford Road for at least 30 minutes before and after a match. Key bus services and coaches marshalled through Oxford Road during periods of lighter pedestrian flows. This will improve pedestrian safety and access.
 - Controlled Match Day Parking Zones up to 2km from the Stadium in Kidlington and North Oxford to prevent supporters travelling to stadium by car and parking on nearby residential streets. This aligns with the proposed controlled parking zones being progressed as part of the planning applications for nearby allocated sites.
 - Variable Message Signage for diverting drivers when match day traffic management is in place and to inform availability of Park and Ride car parks and direct supporters to Park and Ride sites.
 - The Variable Message Signing will also provide advance warning of match day traffic management. A strategy will be developed with OCC to determine the optimal locations for the installation of the signs.

Construction Phase Effects

10.94 **Table 10.16** below shows the AADT (24hr) calculations for the 2025 HGV baseline (Scenario 1 Without Development) in comparison with Scenario 2 with construction traffic generated for all links.

Table 10.16: Construction Phase

Link	Total 24 hour Flow (AADT) HGV		
	Scenario 1	Scenario 2	% Change
	2025 Without Development	2025 With Construction Traffic	
Freize Way NB	109	161	48%
Freize Way SB	102	154	51%
A4165 Oxford Road (S) NB	485	485	0%
A4165 Oxford Road (S) SB	482	482	0%

A4165 Banbury Road (N) NB	311	311	0%
A4165 Banbury Road (N) SB	327	327	0%
A40 Elsfield Way EB	811	828	2%
A40 Elsfield Way WB	752	769	2.3%
A4165 Banbury Road (S) NB	207	207	0%
A4165 Banbury Road (S) SB	169	169	0%
A40 North Way EB	842	851	1%
A40 North Way WB	542	551	1.7%
A44 Woodstock Road (C) NB	759	776	2.2%
A44 Woodstock Road (C) SB	863	880	2%
A44 Woodstock Road (S) EB	315	315	0%
A44 Woodstock Road (S) WB	301	301	0%
A40 Northern Bypass road EB	642	649	1%
A40 Northern Bypass road WB	896	904	1%
Godstow Road NB	23	23	0%
Godstow Road SB	20	20	0%

Severance

- 10.95 During the construction period HGV traffic component on Freize Way is expected to increase by 48% northbound and 51% southbound compared to baseline scenario 1. Due to the actual level of all vehicle flow seen in these links, this increase in HGV traffic falls will be of Low magnitude. This link has Medium sensitivity and therefore the level of change will have a **Minor effect** on severance along the highway link.
- 10.96 The remaining links all show less than 10% change in HGV flow with the addition of construction traffic therefore their magnitude is classed as Negligible. The links are all Medium sensitivity and therefore the level of change will have a **Negligible effect** on severance along the highway link.

Driver Delay

- 10.97 An additional 52 northbound and 52 Southbound (HGV) AADT, or no more than five HGVs within the peak hours, on Freize Way during the construction phase is not expected to result in any significant delay on the Freize Way Junctions. The magnitude of change is Negligible when considering all traffic on the link, therefore the construction traffic will have a **Negligible effect**.
- 10.98 The remaining links all show less than 10% change in HGV flow with the addition of construction traffic therefore the average vehicle delay changes will be less than 20 seconds as a result of construction phase resulting in a magnitude classed as Negligible. The links are all Medium sensitivity and therefore the level of change across all links will have a **Negligible effect** on driver delay.

Pedestrian/ Non Motorised User Delay

- 10.99 An additional 52 HGV AADT northbound and 52 HGV AADT southbound on Freize Way during the construction phase is not expected to result in any significant pedestrian or non-motorised user delay. The magnitude of change is Negligible when considering all traffic on the link. The link is considered Medium sensitivity therefore the impact of construction traffic on this link will have a **Negligible effect**.
- 10.100 The additional small number of HGVs on the remaining links during the construction phase are not expected to result in any significant pedestrian or non-motorised user delay. The magnitude of change is Negligible when considering all traffic on these links. The links are Medium sensitivity and therefore the level of change will have a **Negligible effect** on pedestrian and non-motorised user delay along these highway links.

Non -Motorised User Amenity

- 10.101 On all the assessed links during the construction period, the maximum increase in HGVs is 51% on Frieze Way. On other links where Non-motorised users have a greater presence the increases are low. Due to low flows and the nature of the surrounding area, the magnitude of impact of non-motorised user amenity will be Low. All links are classed as Medium sensitivity and therefore the effect is **Minor** on all links.

Fear and Intimidation

- 10.102 The 18-hour total 2 way flows for the 2025 Baseline and Scenario 2 have been examined in line with criteria set out in **Table 10.13** and have been used to consider the operational effects on fear and intimidation along each link.

- 10.103 Based on **Table 10.13** and **10.14** the degree of hazard score for Freize Way in year 2025 without construction traffic is 50. This is based a current 40mph speed limit and volume of traffic. When adding construction traffic on the link, the hazard score remains at 50. Therefore, there is no step change in hazard score resulting in a Negligible magnitude of change and overall **Negligible effect** based on a Medium sensitivity link.
- 10.104 Likewise for the remaining links the degree of hazard scores see no step change following the addition of construction traffic. No step change in hazard score results in a Negligible magnitude of change and **Negligible effect** based on Medium sensitivity links.

Road Safety

- 10.105 A road safety analysis for the immediate highway network within the vicinity of the proposed development site covering the latest available 5-year period between 2018 and 2022, obtained through OCC, has been undertaken within the Transport Assessment¹. This showed 78 personal injury accidents over the last 5 years, of which 66 were slight injuries, 10 serious injuries and 2 fatal injuries. The 2 fatal accidents occurred in 2022, one on Frieze Way approximately 650m south of the site exit, and the other on Oxford Road approximately 40m north of Loverose Way. No significant clusters were found in the proximity of the proposed Development.
- 10.106 The additional HGV traffic on all assessed links during the construction phase is not expected to result in any significant accident and safety issues. The magnitude of impact is Low therefore along with the Medium sensitivity of all assessed links, the construction traffic will have a **Minor effect** on road safety on all assessed links.

Hazardous Loads/Large Loads

- 10.107 There are not considered to be any risks of major hazards and accidents which are usual to construction plans and construction methods applied for this development. Therefore, the magnitude of impact is Negligible on all links and therefore along with the Medium sensitivity of all assessed links, the construction traffic will have a **Negligible effect**.

Operational Phase Effects

- 10.108 **Table 10.3** shows the AADT (24hr) calculations for the 2026 baseline (without development) in comparison with Scenario 4: 2026 with Development traffic. **Table 10.4** summarises the changes in HGVs on an average day. **Tables 10.5** and **10.6** summarise the change in daily traffic flows for all vehicles and HGV respectively on a match day only.

Severance

- 10.109 During the operational period, Freize Way (N) SB HGV movements are expected to increase by 20.5% HGV AADT in the 2026 with development scenario. However, when looking at the actual level traffic flow on this link as presented in **Table 10.4**, the increase in traffic falls into the Low magnitude. This level of change with a Medium sensitivity receptor will have a **Minor effect** on severance along the link. A 50% increase is forecast on a match day, but with the actual flow only increasing by 58 vehicles this remains a Low magnitude of impact and therefore a **Minor effect** on severance along the link.
- 10.110 All other links assessed fall below the 10% criteria therefore increase in AADT traffic on these links is of Negligible magnitude. This magnitude of change with Medium sensitivity receptors results in a **Negligible effect** on severance along the remaining links.

Driver Delay^a

- 10.111 The change in driver delay is based on junction capacity estimates, as explained 10.57. The nearest junction to each link in peak traffic periods has been examined.
- 10.112 The change in driver delay¹ on Freize Way (N) is calculated from modelling the nearest junction: Loop Farm Roundabout. Delays are expected to increase from Scenario 3 to Scenario 4 by less than 20 seconds as a result of the Proposed Development during the peak hour periods.
- 10.113 Therefore, the average driver delay¹ expected on Freize Way (N) during the peak traffic periods on a weekday match day is of Negligible magnitude, coupled with a Medium sensitivity link results in a **Negligible effect** on driver delay.
- 10.114 Driver delay¹ has also been assessed for links approaching Wolvercote and Cutteslowe roundabouts as these junctions are estimated to be at capacity during a weekday evening match between 19:00-20:00 with the Oxford Road traffic management in place.
- 10.115 On a weekday matchday, at Wolvercote Roundabout, the increase in driver delay¹ is estimated between 30 and 60 seconds as a result of the Proposed Development during the peak hour periods. This is of a Medium magnitude, and based on the Medium sensitivity of the links, results in a **Moderate effect** on driver delay on match days for up to 30 minutes, which is **significant**.
- 10.116 On a weekday matchday, at Cutteslowe Roundabout, the increase in driver delay¹ is estimated at more than a minute as a result of the Proposed Development during the peak hour periods. This is

^a The results are based upon interim assessments, as explained in paragraph 10.57.

of a High magnitude, and based on the Medium sensitivity of the links, results in a **Major/Moderate effect** on driver delay on match days for up to 30 minutes, which is **significant**.

Pedestrian/ Non Motorised User Delay

- 10.117 Typically, the greater the volume of traffic results in an increased pedestrian delay, though other elements such as the level of pedestrian activity, visibility, and the general physical conditions of a site and crossing points for pedestrian use can also impact pedestrian delay.
- 10.118 In terms of change in volume of traffic, all links assessed are under the 30% criteria as presented in **Table 10.3** and **10.4**. Therefore, with the addition of operational traffic, the magnitude of change to pedestrian and NMU user delay is considered Negligible in all links. Based on all links being Medium sensitivity results in a **Negligible effect** on Pedestrian / NMU Delay.
- 10.119 On Oxford Road (S) and Frieze Way, in the operational phase, due to the embedded mitigation of improved pedestrian and cycle paths, and new pedestrian crossings on Oxford Road and Freize Way, and a new stepped access onto Oxford Road from Oxford Parkway, it is considered that these two links will see reduced pedestrian/NMU delay (associated with traffic) with the Proposed Development and therefore will result in a **Moderate Beneficial Effect** overall, which is **significant**.

Non- Motorised User Amenity

- 10.120 During the operational period, the traffic on the assessed links is not expected to double with the addition of development flows. The magnitude of change in NMU amenity therefore is considered Negligible on all links. Based on the links being Medium sensitivity, this results in a **Negligible effect** on NMU Amenity.
- 10.121 With the Proposed Development, it is considered the relative pleasantness of a NMU journey will be increased due to the embedded mitigation of improved pedestrian and cycle paths, and new pedestrian crossings on Oxford Road and Freize Way. In addition, there will be a new stepped access onto Oxford Road from Oxford Parkway.
- 10.122 Therefore, it is considered that the Proposed Development will bring about improved NMU amenity on Oxford Road (S) and Frieze Way and therefore have a **Moderate Beneficial Effect** on these links, which is **significant**.

Fear and Intimidation

- 10.123 The 18-hour total 2 way flows for the 2026 Baseline and Scenario 2 have been examined in line with criteria set out in **Table 10.13** and have been used to consider the operational effects on fear and

intimidation along each link. Based on **Tables 10.13** and **10.14**, the degree of hazard scores limited change following the addition of operational traffic, as there is no significant change in traffic flow on the assessed links and no proposed change to the speed limits. This limited change in hazard score results in a Negligible magnitude of change and overall **Negligible effect** based on Medium **sensitivity** links.

Road Safety

- 10.124 A road safety analysis for the immediate highway network within the vicinity of the proposed development site has been undertaken within the Transport Assessment¹. This analyses the available data for 5-year period between 2018 and 2022 obtained from OCC. This showed 78 personal injury accidents over the last 5 years, of which 66 were slight injuries, 10 serious injuries and 2 fatal injuries. The 2 fatal accidents occurred in 2022, one on Frieze Way approximately 650m south of the site exit, and the other on Oxford Road approximately 40m north of Loverose Way. No significant clusters were found in the proximity of the proposed Development.
- 10.125 The additional development traffic on the assessed links during the operational phase is not expected to result in any significant accident and safety issues. The magnitude of impact is Low therefore along with the Medium sensitivity of all assessed links, the operational traffic will have a **Minor effect** on road safety on all assessed links.

Hazardous Loads/Large Loads

- 10.126 There are not considered to be any risks of major hazards and accidents which are unusual to the development phase. Therefore the operational traffic will have a **Negligible effect** on hazardous or large loads.

Mitigation Measures and Residual Effects

Mitigation measures

During Construction

- 10.127 The embedded mitigation has been demonstrated to mitigate the impacts of the development during the construction period.

During Operation

- 10.128 Variable Message Signing will be installed to provide advance warning of any match day traffic management. A strategy will be developed with OCC to determine the optimal locations for the installation of the signs.

Residual effects

Construction Phase

10.129 No further mitigation is proposed during the construction phase. The residual effects of the construction of the development is expected to be **Not Significant** in terms of severance; driver delay; pedestrian delay; pedestrian amenity; fear and intimidation; accidents and safety; and hazardous loads.

Operational Phase

10.130 As set out in the previous section, with the embedded mitigation the effects of the operation of the development is expected to be **Not Significant** in terms of severance; pedestrian delay; pedestrian amenity; fear and intimidation; accidents and safety; and hazardous loads.

10.131 The driver delay^b associated with the proposed traffic management will see a Major/Moderate Effect on driver delay on approaches to Cuttleslowe Roundabout and Moderate on approaches to Wolvercote Roundabout respectively. This is expected to be at least 30 minutes on match days when the Oxford Road traffic management is required. The significant effects identified at Wolvercote Roundabout (A44 Woodstock Road (C) and (S), A40 Northern Bypass Road and Godstow Road) will be reduced by the installation of Variable Message Signing providing advance warning of any match day traffic management. With this additional mitigation, the overall effect will be reduced to **Minor**, which is **not significant** and temporary (during match day traffic management).

10.132 The significant effects identified at Cuttleslowe Roundabout (A40 North Way, Banbury Road N and S and Elsfield Way) will be reduced by the installation of Variable Message Signing providing advance warning of any match day traffic management. With this additional mitigation, the overall effect will be reduced to **Moderate/Minor**, which is **significant**, but irregular and temporary (during match day traffic management).

10.133 As set out in the previous section, the Proposed Development will deliver a **Moderate Beneficial Effect** in terms of NMU amenity and improved pedestrian NMU user delay on Oxford Road and Freize Way due to the embedded mitigation of improved pedestrian and cycle paths, and new pedestrian crossings.

Cumulative Effects

10.134 The EIA Regulations⁴ require consideration of the likely significant effects of the development on the environment resulting from the cumulation of effects with other existing and/or approved

^b The results are based upon interim assessments, as explained in paragraph 10.57.

projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources.

- 10.135 Committed developments included in detail within the 2026 assessment are as follows:
- PR6a. Land East of Oxford Road. 800 dwellings Reference 23/01233/OUT
 - PR7a. Land South East of Kidlington. 370 dwellings Reference application 22/00747/OUT and 96 dwellings Reference 22/03883/F.
 - PR7b land at Stratfield Farm. 118 dwellings Reference 22/01611/OUT.
 - PR9. Land West of Yarnton. up to 540 dwellings, up to 9,000sqm and GEA of elderly/extra care residential floorspace with associated landuses Reference 21/03522/OUT and APP/C3105/W/23/3329587.
 - Northern Gateway. 480 dwellings, 87,300sqm employment, community uses and 18 bed hotel Reference 18/02065/OUTFUL
- 10.136 Other adopted and committed development is considered through the application of TEMPro growth rates and is outlined in the Transport Assessment¹.
- 10.137 The committed developments listed above have been included within the 2026 baseline Without Development and With Development scenarios therefore the effects are the same as listed within the Operational Phase in terms of severance; driver delay; pedestrian delay; pedestrian amenity; fear and intimidation; accidents and safety; and hazardous loads.
- 10.138 Following implementation of the 2026 base plus Committed Developments listed in 10.133 the effect of the development is expected to be **Not Significant**.

Conclusions

- 10.139 This ES Chapter has considered the environmental impact of the development site on the local area, in terms of highways and transportation. The baseline situation has been considered before the likely environmental effects of the Proposed Development are identified during its construction and operational phases. Mitigation measures to reduce any negative environmental effects are identified as appropriate before the residual environmental effects are assessed. Cumulative impacts have also been examined.
- 10.140 A net impact exercise was undertaken to identify the areas of the network which may be significantly affected following construction and operation of the site. In addition, sensitivity of each link was assessed. The assessment identified links which were at potential of being subject to an environmental impact through the development of the site:
- A4260 Oxford Road (North section)
 - Bicester Road (North section)

- Frieze Way (North section)
- A4165 Oxford Road (South section)
- A4165 Banbury Road (North section)
- A40 Elsfield Way
- A4165 Banbury Road (South section)
- A40 North Way
- A44 Woodstock Road (Central section)
- A44 Woodstock Road (South section)
- A40 Northern Bypass Road
- A44 Woodstock Road (North section)
- A44 (Central section)
- A34 (South section)
- A34 (North section)
- Godstow Road

10.141 Following embedded mitigation, the residual effects for the construction phase of the development are expected to be **short term, temporary, direct** and **not significant** in terms of severance, driver delay, pedestrian delay, pedestrian and non motorised user amenity and road safety.

10.142 For the operational phase of the development, the residual effects are expected to be **long-term, permanent, direct and not significant** in terms of severance, pedestrian delay, pedestrian amenity and accidents and safety. The driver delay^c associated with Cuttleslowe Roundabout (A40 North Way, A40 Northern Bypass Road and Godstow Road, Banbury Road N and S and Elsfield Way) will see a **temporary Minor/Moderate Effect** and **significant** impact on driver delay. This is expected to be up to 30 minutes on match days when the Oxford Road traffic management is required.

10.143 The Proposed Development will bring about improved NMU amenity and improved pedestrian NMU user delay on Oxford Road (S) and Frieze Way with the embedded mitigation of improved pedestrian and cycle paths, and new pedestrian crossings on Oxford Road and Freize Way. There is therefore have a **Moderate Beneficial Effect** on Oxford Road (S) and Frieze Way.

10.144 A summary of potential effects, mitigation and significance of likely residual effects for the construction and operational phases are set out in **Table 10.17**.

^c The results are based upon interim assessments, as explained in paragraph 10.57.

Table 10.17: Summary of Residual Table

Link	Effect	Receptor (Sensitivity)	Magnitude	Nature/ Level of Effect	Mitigation	Residual Effect
Construction Phase						
Freize Way (N) NB	Severance	Medium	Minor(not significant)	Short term, temporary, direct	CTMP	Minor (not significant)
	Driver Delay		Negligible (not significant)	Short-term, temporary, direct		Negligible (not significant)
	Pedestrian Delay		Negligible (not significant)	Short-term, temporary, direct		Negligible (not significant)
	Non motorised user amenity		Minor(not significant)	Short-term, temporary, direct		Minor (not significant)
	Fear and Intimidation		Negligible (not significant)	Short-term, temporary, direct		Negligible (not significant)
	Road Safety		Minor (not significant)	Short-term, temporary, direct		Minor (not significant)
Freize Way (N) SB	Severance	Medium	Minor(not significant)	Short term, temporary, direct	CTMP	Minor(not significant)
	Driver Delay		Negligible (not significant)	Short-term, temporary, direct		Negligible (not significant)
	Pedestrian Delay		Negligible (not significant)	Short-term, temporary, direct		Negligible (not significant)
	Non motorised user amenity		Minor(not significant)	Short-term, temporary, direct		Minor (not significant)
	Fear and Intimidation		Negligible (not significant)	Short-term, temporary, direct		Negligible (not significant)
	Road Safety		Minor (not significant)	Short-term, temporary, direct		Minor (not significant)
All Other Links	Severance	Medium	Negligible (not significant)	Short-term, temporary, direct	CTMP	Negligible (not significant)
	Driver Delay		Negligible (not significant)	Short-term, temporary, direct		Negligible (not significant)
	Pedestrian Delay		Negligible (not significant)	Short-term, temporary, direct		Negligible (not significant)
	Non motorised user amenity		Minor (not significant)	Short-term, temporary, direct		Minor (not significant)
	Fear and Intimidation		Negligible (not significant)	Short-term, temporary, direct		Negligible (not significant)

	Road Safety		Minor (not significant)	Short-term, temporary, direct		Minor (not significant)
Operational Phase (includes cumulative development)						
Freize Way (N) NB	Severance	Medium	Minor(not significant)	Long-term, permanent, direct	Match Day TP	Minor (not significant)
	Driver Delay ^d		Negligible (not significant)	Long-term, permanent, direct		Negligible (not significant)
	Pedestrian Delay		Beneficial	Long-term, permanent, direct	Non-Match Day TP	Moderate Beneficial (significant)
	Non motorised user amenity		Beneficial	Long-term, permanent, direct		Moderate Beneficial (significant)
	Fear and Intimidation		Negligible (not significant)	Long-term, permanent, direct	Traffic Management Plan	Negligible (not significant)
	Road Safety		Minor(not significant)	Long-term, permanent, direct		Minor (not significant)
Freize Way (N) SB	Severance	Medium	Minor(not significant)	Long-term, permanent, direct	Match Day TP	Minor (not significant)
	Driver Delay ^d		Negligible (not significant)	Long-term, permanent, direct		Negligible (not significant)
	Pedestrian Delay		Beneficial	Long-term, permanent, direct	Non-Match Day TP	Moderate Beneficial (significant)
	Non motorised user amenity		Beneficial	Long-term, permanent, direct		Moderate Beneficial (significant)
	Fear and Intimidation		Negligible (not significant)	Long-term, permanent, direct	Variable Message Signage	Negligible (not significant)
	Road Safety		Minor(not significant)	Long-term, permanent, direct		Minor (not significant)
Oxford Road (S)	Severance	Medium	Negligible (not significant)	Long-term, permanent, direct	Match Day TP	Negligible (not significant)
	Driver Delay ^d		Negligible (not significant)	Long-term, permanent, direct	Non-Match Day TP	Negligible (not significant)
	Pedestrian Delay		Beneficial	Long-term, permanent, direct	Traffic Management Plan	Moderate Beneficial
	Non motorised user amenity		Beneficial	Long-term, permanent, direct		Variable Message Signage

^d The results are based upon interim assessments, as explained in paragraph 10.57.

	Fear and Intimidation		Negligible (not significant)	Long-term, permanent, direct		Negligible (not significant)
	Road Safety		Minor(not significant)	Long-term, permanent, direct		Minor (not significant)
Banbury Road N and S, Elsfield Way	Severance	Medium	Minor(not significant)	Long-term, permanent, direct	Match Day TP	Minor (not significant)
	Driver Delay ^e		Moderate/Major	Irregular, temporary, Match Day, direct		Moderate/Minor (match day traffic management) (significant)
	Pedestrian Delay		Negligible (not significant)	Long-term, permanent, direct	Non-Match Day TP	Negligible (not significant)
	Non motorised user amenity		Negligible (not significant)	Long-term, permanent, direct	Traffic Management Plan	Negligible (not significant)
	Fear and Intimidation		Negligible (not significant)	Long-term, permanent, direct	Variable Message Signage	Negligible (not significant)
	Road Safety		Minor (not significant)	Long-term, permanent, direct		Minor (not significant)
A40 North Way, A44 Woodstock road (C) and (S), A40 Northern Bypass Road and Godstow Road	Severance	Medium	Minor(not significant)	Long-term, permanent, direct	Match Day TP	Minor (not significant)
	Driver Delay ⁵		Moderate	Irregular Match Day, direct		Minor (match day traffic management) (not significant)
	Pedestrian Delay		Negligible (not significant)	Long-term, permanent, direct	Non-Match Day TP	Negligible (not significant)
	Non motorised user amenity		Negligible (not significant)	Long-term, permanent, direct	Traffic Management Plan	Negligible (not significant)
	Fear and Intimidation		Negligible (not significant)	Long-term, permanent, direct	Variable Message Signage	Negligible (not significant)
	Road Safety		Minor (not significant)	Long-term, permanent, direct		Minor (not significant)

^e The results are based upon interim assessments, as explained in paragraph 10.57.

References

- ⁱ Transport Assessment, Ridge & Partners LLP, 2024
- ⁱⁱ Match Day Travel Plan, Ridge & Partners LLP, 2024
- ⁱⁱⁱ Non Match Day Travel Plan, Ridge & Partners LLP, 2024
- ^{iv} Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2011 (as amended 2015) (Statutory Instrument 1824
- ^v Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement ,IEMA, July 2023
- ^{vi} National Planning Policy Framework, UK Government, 2023
- ^{vii} Planning Practice Guidance: Travel Plans, Transport Assessments and Statements, UK Government, 2014
- ^{viii} Transport Decarbonisation Plan, UK Government, 2021
- ^{ix} Cherwell Local Plan 2011-2031, Cherwell District Council, 2015
- ^x Local Transport and Connectivity Plan, Oxfordshire County Council, 2022
- ^{xi} Active Travel Strategy ,Oxfordshire County Council, 2022
- ^{xii} OCC Guidance for New Developments: Transport Assessments, Oxfordshire County Council, 2014
- ^{xiii} Design Manual for Roads and Bridges (DMRB), Department for Transport, 2007
- ^{xiv} LA112 Population and Health, Highways England, 2020
- ^{xv} LA112 Population and Health, Highways England, 2020
- ^{xvi} Volume 11, Section 3, Part 8, Chapter 6 of the Design Manual for Roads and Bridges (DRMB) "Pedestrians and Others and Community Effects", Department for Transport, 2007
- ^{xvii} Manual for Streets, Department for Transport, 2007
- ^{xviii} Construction Traffic Management Plan, Ridge & Partners LLP, 2024