

## 8 TRANSPORT AND ACCESS

### 8.1 INTRODUCTION

8.1.1 This chapter provides an assessment of the potential significant effects of the proposed outline planning application for the construction of up to "**Outline planning application for the construction of up To 140,000 sqm of employment floorspace (use class B8 with ancillary offices and facilities) and servicing and infrastructure including new site accesses, internal roads and footpaths, landscaping including earthworks to create development platforms and bunds, drainage features and other associated works including demolition of the existing farmhouse. All matters of detail reserved.**" This chapter has been prepared by DTA Transportation (DTA).

8.1.2 The following receptors have been considered as part of the assessment:

- Users of the public highway in the vicinity of the site including, pedestrians, cyclist, public transport users;
- Private car and van drivers; and
- Existing vehicle users in the surrounding areas.

8.1.3 The assessment has been carried out in accordance with the Institute of Environmental Management and Assessment (IEMA) Guidelines 'Environmental Assessment of Traffic and Movement Traffic' (2023) (the 'IEMA Guidelines').

8.1.4 The impacts associated with traffic in relation to air quality and noise are set out in **Chapter 10: Air Quality** and **Chapter 11: Noise** of this ES respectively.

8.1.5 A Transport Assessment (TA) is attached in **Appendix 8.1** and has been prepared to support the assessment reported in this chapter. The assessment reviews the impact on both the local and strategic road network (SRN) and reflects initial discussions with National Highways (NH) and the local Highway Authority, Oxfordshire County Council (OCC).

8.1.6 A Framework Travel Plan (FTP) is attached in **Appendix 8.2** and has been prepared with the objective to reduce the percentage of occupants travelling by single occupancy car.

### 8.2 ASSESSMENT APPROACH

#### Methodology

8.2.1 The assessment considers the likely significant environmental effects from construction traffic and development generated traffic on the capacity and safety of the surrounding road network. The assessment also considers the implications for public transport and pedestrian and cycling movements.

8.2.2 An estimate of the trips by the Site has been undertaken on a vehicular trip basis and has been derived from the TRICS online database. The distribution of development traffic is based on the 2011 Census journey to work data.

8.2.3 In order to inform the assessment, traffic count data has been collected on the local road network at various locations in 2023. Full details of the data are provided in **Section 8.3** below. Traffic data for the M40 has been obtained from the Department for Transport (DfT).

8.2.4 Personal Injury Collision (PIC) data was obtained from OCC for the full five-year period preceding the introduction of Covid-19 restrictions up to the most recent PICs published (1st January 2015 to 31st December 2021). Further PIC data has been obtained from OCC from 31st December 2021 to 16th November 2023 and this is summarised below. Full details of the data are provided in **Section 8.3** below.

### **Assessment of Significance**

8.2.5 To facilitate the impact assessment process and ensure consistency in the terminology of significance, a standard assessment methodology has been applied. This methodology has been developed from a range of sources, including the IEMA Guidelines and advice given in the Design Manual for Roads and Bridges (DMRB).

8.2.6 The IEMA Guidelines also sets out when traffic related environmental impacts can be scoped out for further assessment. Paragraph 2.16:

**“Following determination of a study area, it is recommended the competent traffic and movement expert applies two broad rules of thumb as criteria to assist in delimiting the scale and extent of environmental assessment**

- **Rule 1 include highway links where traffic flows will increase by more than 30 % (or the number of heavy goods vehicles will increase by more than 30 %).**
- **Rule 2 include highway links of high sensitivity where traffic flows have increased by 10 % or more.”**

8.2.7 This ‘rule of thumb’ has been used as a general guide in undertaking this assessment rather than a hard and fast rule. The assessment of the significance of an effect will be determined by the interaction of the following factors:

- The magnitude, scale or severity of the impact or change; and
- The value, importance or sensitivity of the environmental resource or receptor being affected.

8.2.8 The approach to determining the significance of identified effects has regard to the guidance given in the Design Manual for Roads and Bridges - ‘DMRB Lifecycle Analysis (LA) 104 Environmental assessment and monitoring’ (LA 104) - in terms of defining the environmental value / sensitivity of the receptor (Table 3.2N of LA 104) and the magnitude of the impact (Table 3.4N of LA 104). The overall significance of effects has been determined using the matrix set out in **Table 8.4** (which is based upon the tables listed above from LA 104).

8.2.9 The categorisation of the magnitude of the impact brought about by the proposals varies depending upon the impact area being considered (e.g. severance, driver delay etc.). In considering the impacts on the different topic areas regard has been had to the relevant guidance contained within the IEMA Guidelines. This guidance is further discussed in the following paragraphs.

**Table 8.1: Environmental value (or sensitivity) and typical descriptors**

<b>Value (Sensitivity)</b>	<b>Typical Descriptors</b>
<b>Very High</b>	Facility of international or national significance.
<b>High</b>	Close proximity to schools, colleges, accident black-spots.
<b>Medium</b>	Close proximity to congested junctions, hospitals, community centres, conservation areas.
<b>Low (or Lower)</b>	Close proximity to public open space, nature conservation areas, and residential areas with adequate pavements.
<b>Negligible</b>	Receptors of low sensitivity.

**Table 8.2: Magnitude of the Impact and typical descriptors**

<b>Value (Sensitivity)</b>	<b>Typical Descriptors</b>
<b>Major/ substantial</b>	Loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements (Adverse). Large scale or major improvement of resource quality; extensive restoration or enhancement; major improvement of attribute quality (Beneficial).
<b>Moderate</b>	Loss of resource, but not adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements (Adverse). Benefit to, or addition of, key characteristics, features or elements; improvement of attribute quality (Beneficial).
<b>Minor/ slight</b>	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristic(s), features or elements (Adverse). Minor benefit to, or addition of, one (maybe more) key characteristic(s), features or elements; some beneficial impact on attribute or a reduced risk of negative impact occurring (Beneficial).
<b>Negligible</b>	Very minor loss or detrimental alteration to one or more characteristics, features or elements (Adverse). Very minor benefit to or positive addition of one or more characteristics, features or elements (Beneficial).

**Table 8.3: Descriptors of the significance of effect categories**

Significance Category	Typical Descriptors of Effect
<b>Major</b>	These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process.
<b>Moderate</b>	These beneficial or adverse effects may be important but are not likely to be key decision-making factors. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a particular resource or receptor.
<b>Minor</b>	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.
<b>Insignificant</b>	No effects on those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

**Table 8.4: Significance of Effect Categories Matrix**

Magnitude of Change	Sensitivity of Receptor				
		High	Medium	Low	Negligible
	High	Major	Major	Moderate	Negligible
	Medium	Major	Moderate	Minor to Moderate	Negligible
	Low	Moderate	Minor	Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

8.2.10 As the matrix in Table 8.4 demonstrates, the sensitivity of the receptor and the magnitude of impact for each environmental effect has been considered to determine the significance of the effect. In Environmental Impact Assessment (EIA) terms the impacts which are defined as moderate or major are taken to be significant.

#### Severance

8.2.11 Severance is the perceived division that can occur within a community when it becomes separated by a major traffic route. Whilst the IEMA Guidelines refer to the effect of traffic on severance of 30 %, 60 % and 90 % producing 'slight', 'moderate' and 'substantial' changes in severance respectively, it is suggested that caution be applied to relying on these quanta of change. The consideration of severance in this assessment has had due regard to specific local conditions, in particular, the location of pedestrian routes to key local facilities and whether crossing facilities are provided or not.

#### Driver Delay

8.2.12 Traffic delays to 'non-development' traffic can occur:

- At the site entrances where there will be additional turning movements;
- On the highways passing the site where there may be additional flow; and
- At key junctions on the nearby highway network.

8.2.13 Impact on driver delay is based on the quantum of change in traffic levels against interpretation of the local highway link capacity expressed in terms of predicted flows.

#### Pedestrian Delay

8.2.14 The proposed development will bring about increases in the number of vehicle movements during the construction and operational phases. In general terms, increases in traffic levels are likely to lead to greater increases in delay to pedestrians seeking to cross roads. The IEMA Guidelines recommend that, rather than rely on thresholds of pedestrian delay, the assessor should use judgement to determine whether pedestrian delay is a significant impact. This is the approach which has been adopted for the purposes of this assessment.

#### Pedestrian Amenity

8.2.15 This is broadly defined as the relative pleasantness of a journey and is considered to be affected by traffic flow, traffic composition and pavement width/separation from traffic. The IEMA Guidelines cite a doubling of traffic flow (or its lorry component) as representing a threshold for impact evaluation. This measure is considered within the assessment that follows.

#### Fear and Intimidation

8.2.16 This again relates to pedestrians, and shares characteristics with pedestrian amenity. There are no commonly agreed thresholds for estimating danger, but research work is cited setting out 'degree of hazard' levels relating to 18-hour average traffic flow, 18-hour heavy goods vehicle (HGV) flow and average vehicle speed. These levels are considered within the assessment that follows in terms of impact.

8.2.17 The thresholds for determining the magnitude of change are based upon the conclusions of the 1981 study by Crompton and Gilbert entitled 'Pedestrian Delays, Annoyance and Risk'<sup>1</sup>. The magnitude criteria for fear and intimidation thresholds is detailed in **Table 8.5** below.

**Table 8.5: Magnitude Criteria Fear and Intimidation Thresholds**

Magnitude of Change	Average traffic flow over 18 hr day vehicles/hour	Total 18 hr HGV flow	Average speed over 18 hr day miles/hour
Large	1800 +	3000+	20+
Medium	1200-1800	2000-3000	15-20
Small	600-1200	1000-2000	10-15
Negligible	Less than 600	Less than 1000	Less than 10

#### Accidents and Safety

8.2.18 The PIC record for the local highway network has been obtained from OCC for the full five-year period preceding the introduction of Covid-19 restrictions up to the most recent PICs published (1<sup>st</sup> January 2015 to 31<sup>st</sup> December 2021). Further PIC data has been obtained from OCC from 31<sup>st</sup> December 2021 to 16<sup>th</sup> November 2023. The impact of additional traffic from the proposals is considered in terms of the magnitude of traffic increase and existing accident record data.

<sup>1</sup> Crompton D H, Pedestrian Delay, Annoyance and Risk, Imperial College, 1981

Hazardous and Abnormal Loads

8.2.19 The IEMA Guidelines acknowledge that most developments will not result in increases in the number of movements of hazardous/abnormal loads. This is the case here.

**Legislative and Policy Framework**

8.2.20 This section of the chapter sets out key aspects and implications of policy and guidance that are relevant to the assessment of likely impacts on traffic and transport.

UK Legislation

8.2.21 The traffic and transport assessment are predominantly governed by the statutory framework provided by the Highways Act 1980 which directs the management and operation of the road network in England and Wales.

National PolicyNational Planning Policy Framework (NPPF)

8.2.22 In September 2023, the National Planning Policy Framework (NPPF) was updated. The NPPF confirms that the Government will encourage sustainable development. This is highlighted in Paragraph 10 which confirms that:

**“at the heart of the Framework is a presumption in favour of sustainable development”**

8.2.23 In specific relation to transport issues it is confirmed at para 104 and 105 that:

**104 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 accommodates;**
- 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.**

The planning system should actively manage patterns of growth in support of these objectives.

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

8.2.24 The NPPF sets the following test in relation to development:

**110. 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, giving 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; 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.**

**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."**

8.2.25 Paragraph 112 of the NPPF goes on to say that:

**111. Within this context, applications for development should:**

- a) **give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;**
- b) **address the needs of people with disabilities and reduced mobility in relation to all modes of transport;**

- c) **create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid necessary street clutter, and respond to local character and design standards;**
- d) **allow for the efficient delivery of goods, and access by service and emergency vehicles; and**
- e) **be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.”**

DfT Circular 01/2022 (2022)

8.2.26 Circular 01/2022 was published in December 2022 by the Department for Transport (DfT) which sets out the way in which National Highways will engage with the development industry to deliver sustainable development and thus economic growth, whilst safeguarding the primary function and purpose of the strategic road network.

8.2.27 Transport Assessments are covered in paragraphs 47 through 54 inclusive with key extracts relevant to the proposed development as follows:

**“developers should demonstrate that the development would be located in an area of high accessibility by sustainable transport modes and would not create a significant constraint to the delivery of any planned improvements to the transport network or allocated sites.**

**A transport assessment for consideration by the company must also consider existing and forecast levels of traffic on the SRN, alongside any additional trips from committed developments that would impact on the same sections (link or junction) as the proposed development. Assumptions underpinning projected levels of traffic should be clearly stated to avoid the default factoring up of baseline traffic.**

**An opening year assessment to include trips generated by the proposed development, forecasted growth and committed development shall be carried out to establish the residual transport impacts of a proposed development.**

**Where a transport assessment indicates that a development would have an unacceptable safety impact or the residual cumulative impacts on the SRN would be severe, the developer must identify when, in relation to the occupation of the development, transport improvements become necessary.”**

Local Policy

Cherwell Local Plan (2011-2031)

8.2.28 This document seeks to look to the future and set out proposals to support the local economy and communities up to 2031. It forms part of the statutory Development Plan for Cherwell. The Plan was formally adopted by the Council on 20th July 2015.

8.2.29 The plan addresses several broad parameters, such as:



- **A strategy for development in Cherwell.**
- **Policies for development in Cherwell.**
- **Policies for Cherwell's places.**
- **Infrastructure, and**
- **Delivery**

#### **SLE 1: Employment Development**

**Employment proposals at Banbury, Bicester and Kidlington will be supported if they meet the following criteria:**

**Have good access, or can be made to have good access, by public transport and other sustainable modes.**

#### **SLE 4: Improved Transport and Connections**

**All development where reasonable to do so, should facilitate the use of sustainable modes of transport to make the fullest possible use of public transport, walking and cycling.**

#### **Saved policy TR1 (Cherwell Local Plan 1996)**

**Before proposals for development are permitted, the Council will require to be satisfied that new highways, highway improvement works, traffic-management measures, additional public transport facilities or other transport measures that would be required as a consequence of allowing the development to proceed will be provided.**

#### *Oxfordshire Local Transport and Connectivity Plan (2022)*

8.2.30 The Oxfordshire Local Transport Plan (LTP5) sets out a vision to deliver 'a net-zero Oxfordshire transport and travel system that enables the county to thrive whilst protecting the environment and making Oxfordshire a better place to live for all residents'.

8.2.31 Headline targets are to:

- **reduce 1 in 4 current car trips by 2030;**
- **deliver a net zero transport network by 2040;**
- **and have zero, or as close as possible, road fatalities or life changing injuries by 2050.**

#### **Policy 36 – We will:**

- a) Only consider road capacity schemes after all other options have been explored.**
- b) Where appropriate, adopt a decide and provide approach to manage and develop the county's road network.**

- c) **Assess opportunities for traffic reduction as part of any junction or road route improvement schemes.**
- d) **Require transport assessments accompanying planning applications for new development to follow the County Council's 'Implementing 'Decide & Provide': Requirements for Transport Assessments' document.**
- e) **Promote the use of the 'decide and provide' approach in planning policy development to support site assessment.**

**Policy 47 – We will develop and deliver a freight and logistics strategy based around the principles of:**

- **Appropriate movement**
- **Efficient movement**
- **Net-zero movement**
- **Safe movement**
- **Partnership working**

**Policy 48 – We will:**

- a) **Promote rail freight as our priority for the long distance movement of goods.**
- b) **Support a range of additional measures to improve the safety and efficiency of long distance goods movement.**

#### Guidance

##### *Institute of Environmental Management and Assessment*

8.2.32 The IEMA Guidelines<sup>2</sup> were published in July 2023 by the Institute of Environmental Management and Assessment. These guidelines assess the environmental impacts of road traffic associated with new developments, irrespective of whether the developments are to be subject to formal EIA.

8.2.33 The purpose of the guidelines is to provide the basis for systematic, consistent, and comprehensive coverage for the appraisal of traffic impacts arising from development projects. Impacts that may arise include pedestrian severance and pedestrian amenity, driver delay, accidents and safety and noise, vibration, and air quality.

8.2.34 The Guidelines have been used to inform this assessment.

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<sup>2</sup> Institute of Environmental Management and Assessment (2023). Environmental Assessment of Traffic and Movement.

*Planning Practice Guidance*

8.2.35 Following directly on from paragraph 111 of the NPPF, the 'Travel Plans, Transport Assessment and Statements in decision taking' Planning Policy Guidance<sup>3</sup> states:

**"Local planning authorities must make a judgement as to whether a development proposal would generate significant amounts of movement on a case by case basis (i.e. significance may be a lower threshold where road capacity is already stretched or a higher threshold for a development in an area of high public transport accessibility).**

**In determining whether a Transport Assessment or Statement will be needed for a proposed development local planning authorities should take into account the following considerations:**

- **The Transport Assessment and Statement policies (if any) of the Local Plan;**
- **The scale of the proposed development and its potential for additional trip generation (smaller applications with limited impacts may not need a Transport Assessment or Statement);**
- **Existing intensity of transport use and the availability of public transport;**
- **Proximity to nearby environmental designations or sensitive areas;**
- **Impact on other priorities/ strategies (such as promoting walking and cycling);**
- **The cumulative impacts of multiple developments within a particular area; and**
- **Whether there are particular types of impacts around which to focus the Transport Assessment or Statement (e.g. assessing traffic generated at peak times)."**

8.2.36 The document advocates initial consultation with key decision makers at an early stage through pre-application discussions to determine the scope of the technical work required to underpin the associated transport assessments and travel plans. The key issues it suggests that should be considered are:

- **"The planning context of the development proposal;**
- **Appropriate study parameters (i.e. area, scope, and duration of study);**
- **Assessment of public transport capacity, walking/ cycling capacity and road network capacity;**

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<sup>3</sup> Department for Communities and Local Government. (2014). Travel Plans, Transport Assessment and Statements. Available at: <https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements>.

- **Road trip generation and trip distribution methodologies and/or assumptions about the development proposal;**
- **Measures to promote sustainable travel;**
- **Safety implications of development; and**
- **Mitigation measures (where applicable) – including scope and implementation strategy.”**

8.2.37 It acknowledges that the scope and level of detail in reports will vary from site to site, but suggests the following should be considered when confirming the scope of the proposed assessment:

- **“Information about the proposed development, site layout, (particularly proposed transport access and layout across all modes of transport);**
- **Information about neighbouring uses, amenity and character, existing functional classification of the nearby road network;**
- **Data about existing public transport provision, including provision/ frequency of services and proposed public transport changes;**
- **A qualitative and quantitative description of the travel characteristics of the proposed development, including movements across all modes of transport that would result from the development and in the vicinity of the site;**
- **An assessment of trips from all directly relevant committed development in the area (i.e. development that there is a reasonable degree of certainty will proceed within the next three years);**
- **Data about current traffic flows on links and at junctions (including by different modes of transport and the volume and type of vehicles) within the study area and identification of critical links and junctions on the highways network;**
- **An analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent three-year period, or five-year period if the proposed site has been identified as within a high accident area;**
- **An assessment of the likely associated environmental impacts of transport related to the development, particularly in relation to proximity to environmentally sensitive areas (such as air quality management areas or noise sensitive areas);**
- **Measures to improve the accessibility of the location (such as provision/ enhancement of nearby footpath and cycle path linkages) where these are necessary to make the development acceptable in planning terms;**
- **A description of parking facilities in the area and the parking strategy of the development;**

- **Ways of encouraging environmental sustainability by reducing the need to travel; and**
- **Measures to mitigate the residual impacts of development (such as improvements to the public transport network, introducing walking and cycling facilities, physical improvements to existing roads.**

**In general, assessments should be based on normal traffic flow and usage conditions (e.g. non-school holiday periods, typical weather conditions) but it may be necessary to consider the implications for any regular peak traffic and usage periods (such as rush hours). Projections should use local traffic forecasts such as TEMPRO drawing where necessary on National Road Traffic Forecasts for traffic data.**

**The timeframe that the assessment covers should be agreed with the local planning authority in consultation with the relevant transport network operators and service providers. However, in circumstances where there will be an impact on a national transport network, this period will be set out in the relevant Government policy.”**

*The Strategic Road Network: Planning for the Future*

8.2.38 The Strategic Road Network: Planning for the Future document<sup>4</sup> describes the approach which NH (formerly Highways England) takes to engage in the planning system and the issues looked at when considering draft planning documents. It also offers advice on the information which NH would like to see included in a planning proposal. The relevant paragraphs are summarised below.

**“Transport assessments should generally be carried out in line with prevailing government guidance in agreement with us, through preapplication and scoping, such as a road safety audit (stage 1)”.**

**“We will expect to see measures implemented that fully mitigate any and all environmental impacts arising from and relating to the interaction between developments and the SRN. There are three aspects to this:**

- **The environmental impacts arising from the temporary construction works;**
- **The environmental impacts of the permanent transport solution associated with the development; and**
- **The environmental impact of the road network upon the development itself.”**

**“To avoid potential delay or challenge, transport assessments/statements and environmental statements/impact assessments should be mutually consistent and pay due regard to each other.”**

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<sup>4</sup> Highways England (2015). The Strategic Road Network Planning for the Future.

**“If the development is in an approved local plan and has had an appropriate level of assessment of the impact of the development undertaken, we [Highways England] do not anticipate the need to repeat the full assessment process at the planning application stage.”**

**“If, however, the development proposed has not been subject to an appropriate level of assessment or is not included or consistent with an approved local plan, then we anticipate agreeing the scope of work required to make a full assessment. For those sites that have been considered at local plan stage, we will take into account any assessment already undertaken.”**

**“Formal pre-application discussions are an effective means of gaining a good, early understanding of the development, its benefits, its likely impacts and its infrastructure needs. By consulting with us pre-application, you will ensure that the transport assessment you prepare is appropriately scoped and is based on the most relevant and up-to-date data. It will also ensure that you are made aware of, and can take account of, any SRN issues that might have a bearing on the way in which the development is planned and/or delivered. This, in turn, helps avoid delays and difficulties further into the application process”.**

**“If a SR is to be prepared, we advise this includes:**

- Details of the development, such as location, access arrangements, use class, size or number of units, likely phasing, maximum number of parking spaces and any other relevant information;**
- Proposed methodology for estimating the vehicular trip generation and distribution on the SRN, and resulting trip generation figures;**
- Proposed methodology for assessing the impact of this trip generation on the SRN; and**
- Proposed methodology for assessing the environmental consequences of the transport impacts of the development.”**

### **Scoping Criteria**

8.2.39 A Scoping Opinion has not been undertaken with the Local Planning Authorities therefore the potential effects considered below are based on professional judgement.

8.2.40 The following Transport and Access assessment considers the following potential effects for both the construction and the operational phases:

- Severance;
- Driver Delay;
- Pedestrian Delay;
- Pedestrian Amenity;
- Fear and Intimidation;
- Accidents and Safety; and
- Hazardous and Abnormal Loads.

8.2.41 The description of each of these potential effects can be seen in the Assessment of Significance section above.

### 8.3 BASELINE ENVIRONMENT

#### Site Description and Context

##### Local and Wider Road Network

8.3.1 The Proposed Development will be accessed from the A361. The A361 is a single carriageway road which measures approximately 7.5m in width. The road is subject to the national speed limit of 60mph. This is to be reduced to 50mph as part of the permitted planning application for the land to the west of the A361 (ref: 19/00128/HYBRID; 'Frontier Park') from the M40 Junction 11 for a distance 250m north of the Frontier Park site access. The A361 runs between the M40/ A422/ A361 Roundabout to the A45 on the south-western boundary of Daventry.

8.3.2 The A422 is a dual carriageway road with each direction separated by a grass central reservation. The road is subject to the national speed limit of 70mph. The A422 becomes single carriageway and subject to a 50mph speed limit to the east of the B4525/ A422/ Mansion Hill Roundabout. The A422 runs between Banbury and the A43 to the south of Brackley.

8.3.3 The M40 motorway is a dual three-lane motorway which links London, Oxford and Birmingham. The Proposed Development is approximately 500m from Junction 11 of the M40 motorway which is a signalised grade-separated roundabout.

##### Public Transport Provision

##### Bus

8.3.4 There are currently no bus stops in the vicinity of the Proposed Development. The nearest bus stop to the Proposed Development is located approximately 1.3km south on Ermont Way. This stop is serviced by the numbers 132, 200, 500 and B9. A summary of these bus services can be seen in **Table 8.6** below.

**Table 8.6: Summary of Bus Services**

Service	Route	Frequency		
		Monday-Friday	Saturday	Sunday
132	Banbury – Brackley – Tingewick – Buckingham	-	11:17 & 14:50 Inbound	-
200	Banbury – Daventry	Hourly (06:28-18:27)	Hourly (07:52-19:35)	-
500	Banbury – Brackley	Hourly (05:55-23:11)	Hourly (06:57-23:35)	Hourly (07:07-19:58)

B9	Banbury Gateway – Hardwick	20-30mins (06:34-22:19)	30mins (07:29-22:19)	09:21, 17:21 & 18:21 Outbound 09:11, 17:11 & 18:00 Inbound
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8.3.5 Frontier Park proposes to introduce bus stops along the site frontage. The bus stops will be sheltered and provide up to date timetable information, as well as being fully accessible for all users.

8.3.6 Pedestrian crossing points will also be provided as part of the permitted application which will be located at the main pedestrian desire lines. The crossings will benefit from the introduction of dropped kerbs and tactile paving.

8.3.7 The bus stops will be served by the number 200 which currently runs along the A361 in both directions. The summary of the number 200 can be seen in **Table 8.6** above.

Rail

8.3.8 The closest Railway station is Banbury Station which is approximately 2.7km north-east of the Proposed Development. This equates to a circa 33-minute walk or a circa 9-minute cycle. There are 63 cycle storage spaces at the station and 978 pay and display car parking spaces, 14 of which are accessible.

8.3.9 The station has the services Chiltern Railways, Cross Country Trains and Great Western Railway. The services go to a variety of other stations such as Birmingham Moor Street, Southampton Central, Newcastle, London Marylebone, Bournemouth and Manchester Piccadilly. The station has parking, bicycle stands and ticket machines.

Walking and Cycling

8.3.10 At present there are no pedestrian footways along the A361. Following the Frontier Park development , a 2m wide footway leading from the northern side of the access and along the western side of the A361 as far as the new bus layby. A dropped kerb and tactile crossing with pedestrian refuge island leading to a 2m wide footway on the eastern side between the crossing and a new bus layby is also being provided as part of Frontier Park.

8.3.11 A pedestrian/ cycle link to Banbury Gateway Shopping Centre is provided via the Motorway underpass beneath the M40. There are 'Cyclists Dismount' signs either side of the underpass. As part of the outline consent for Frontier Park, a shared use footway/ cycleway along Wildmere Road between the existing cycle facility at Banbury Gateway Retail Park and Hennef Way is to be provided. Once this link is completed, it is considered to be an appropriate pedestrian/ cycle link for the employees of Frontier Park, and therefore the employees of the development to the east of the A361 considered in this report, to access Banbury.

8.3.12 National Cycle Route (NCR) 5 is approximately 5km south-west of the site. NCR 5 is a long-distance route which connects Reading and Holyhead via Oxford, Stratford-upon-Avon, Bromsgrove, Birmingham, Stoke-on-Trent, Chester, Colwyn Bay and Bangor.

Local Amenities

8.3.13 Accessibility by foot to local amenities was determined by measuring the distances from the site access to the local amenities. It is generally considered that for



distances under 2km, walking offers the greatest potential to replace short car trips. For distances under 5km, cycling also has the potential to substitute for short car trips.

8.3.14 The nearest food store, a Marks and Spencer Foodhall, is currently located approximately 1.6km west of the site in Banbury Gateway Shopping Park. This equates to a circa 19-minute walk or a circa 5-minute cycle. The walking route to this store is likely to be shortened when Frontier Park is built.

8.3.15 The nearest hospital with an emergency department is Horton General Hospital which is approximately 3.9km from the site which equates to a circa 15-minute cycle or a circa 11-minute drive.

### **Baseline Survey Information**

#### Existing Traffic Flows

8.3.16 To inform the traffic modelling a programme of traffic surveys was commissioned within the A422 corridor.

8.3.17 Automatic Traffic Counts (ATC) were undertaken for a two-week period on the following roads from Thursday 22nd June to Wednesday 5th July 2023:

- A361.
- A422.
- Hennef Way (between Wildmere Road and M40 J11).
- Hennef Way (between Wildmere Road and A4260).
- Hennef Way (between A4260 and Southam Road).

8.3.18 The location of the ATCs and the full results are provided in **Appendix 8.1: Transport Assessment**. A summary of the results can be seen in **Table 8.7, 8.8** and **8.9** below.

**Table 8.7: Automatic Traffic Count Summary – Week 1**

Time Period	Northbound	Southbound	Two-Way
<b>A361</b>			
08:00 – 09:00	278	499	777
17:00 – 18:00	562	387	949
AADT	5,083	4,890	9,973
<b>A422</b>			
	Eastbound	Westbound	Two-Way
08:00 – 09:00	924	1,055	1,979
17:00 – 18:00	980	940	1,920
AADT	11,166	11,622	22,788
<b>Hennef Way (between Wildmere Road and M40 J11)</b>			
	Eastbound	Westbound	Two-Way
08:00 – 09:00	1,400	2,132	3,532
17:00 – 18:00	1,727	1,714	3,441
AADT	21,893	23,295	45,188

<b>Hennef Way (between Wildmere Road and A4260)</b>			
	Eastbound	Westbound	Two-Way
08:00 – 09:00	1,568	1,838	3,406
17:00 – 18:00	1,597	2,026	3,623
AADT	22,797	24,997	47,794
<b>Hennef Way (between A4260 and Southam Road)</b>			
	Eastbound	Westbound	Two-Way
08:00 – 09:00	1,379	1,204	2,583
17:00 – 18:00	1,332	1,320	2,652
AADT	20,501	18,406	38,907

**Table 8.8: – Automatic Traffic Count Summary – Week 2**

<b>Time Period</b>	<b>Northbound</b>	<b>Southbound</b>	<b>Two-Way</b>
<b>A361</b>			
08:00 – 09:00	282	543	825
17:00 – 18:00	612	402	1,014
AADT	5,474	5,148	10,622
<b>A422</b>			
	Eastbound	Westbound	Two-Way
08:00 – 09:00	869	671	1,540
17:00 – 18:00	1,029	714	1,743
AADT	11,518	8,837	20,355
<b>Hennef Way (between Wildmere Road and M40 J11)</b>			
	Eastbound	Westbound	Two-Way
08:00 – 09:00	1,390	2,040	3,430
17:00 – 18:00	1,770	1,656	3,426
AADT	21,800	23,197	44,997
<b>Hennef Way (between Wildmere Road and A4260)</b>			
	Eastbound	Westbound	Two-Way
08:00 – 09:00	1,411	1,880	3,291
17:00 – 18:00	1,605	2,052	3,657
AADT	22,754	26,065	48,819
<b>Hennef Way (between A4260 and Southam Road)</b>			
	Eastbound	Westbound	Two-Way
08:00 – 09:00	1,215	1,163	2,378
17:00 – 18:00	1,354	1,330	2,684
AADT	20,753	18,481	39,234

**Table 8.9: – Average Mean Speeds and 85th Percentile Speeds**

	Northbound	Southbound
<b>A361</b>		
Average Mean Speed	44.6	41.6
85th Percentile Speed	50.7	48.5
<b>A422</b>		
	Eastbound	Westbound
Average Mean Speed	48.7	72.4
85th Percentile Speed	56.3	83.6
<b>Hennef Way (between Wildmere Road and M40 J11)</b>		
	Eastbound	Westbound
Average Mean Speed	33.4	36.6
85th Percentile Speed	40.7	43.4
<b>Hennef Way (between Wildmere Road and A4260)</b>		
	Eastbound	Westbound
Average Mean Speed	45.1	42.1
85th Percentile Speed	53.3	49.4
<b>Hennef Way (between A4260 and Southam Road)</b>		
	Eastbound	Westbound
Average Mean Speed	41.6	39.5
85th Percentile Speed	48.0	47.1

8.3.19 In addition to the ATC's, manual classified turning counts and queue length surveys were undertaken at the following locations on Thursday 29th June 2023.

- M40 (N) / A361 / A422 (E) / M40 (S) / A422 (W) – M40 Junction 11.
- Wildmere Road / A422 / Ermont Way / A422 Hennef Way roundabout.
- Access Road / Hennef Way / A4260 Concord Avenue / Holman Bridge roundabout.
- Southam Road (N) / A422 Hennef Way / Southam Road (S) / A422 Roucote Avenue roundabout.
- B4525 Banbury Lane / Mansion Hill / A422 / Unnamed Road / A422 (W) roundabout.
- Wildmere Road (N) / Brookhill Way / Wildmere Road (S) / Wildmere Road.
- A423 Southam Road (N) / A423 Southam Road (S) / Beaumont Road.

8.3.20 Pedestrian crossing demand data was collected at the following locations:

- A422 Hennef Way, just west of the A422/Wildmere Road/Ermont Way roundabout.
- A423 Southam Road, just north of the A422/Southam Road roundabout.
- A422 Hennef Way, just east of the A422/Southam Road roundabout.
- A422 Ruscote Avenue, just west of the A422/Southam Road roundabout.

8.3.21 These counts include queue counts at each arm of the junctions. The location of these and the full results are provided in the Transport Assessment..

#### Personal Injury Collisions

8.3.22 The existing road safety performance of the local road network has been assessed in the context of the additional demand that will be generated by the proposed development. This has informed the site access design, the appraisal of the transport implications of the development and has been provided to the independent road safety auditors.

8.3.23 Personal Injury Collision (PIC) data was obtained from OCC for the full five-year period preceding the introduction of Covid-19 restrictions up to the most recent PICs published (1<sup>st</sup> January 2015 to 31<sup>st</sup> December 2021). Further PIC data has been obtained from OCC from 31<sup>st</sup> December 2021 to 16<sup>th</sup> November 2023 and this is summarised below. A review of the PIC's is provided below.

#### *PIC Data – 1st January 2015 to 31st December 2021*

8.3.24 In the five years preceding the introduction of Covid-19 restrictions (01/01/2015 to 31/12/2019) 83 PICs occurred in the study area – 70 slight, 11 serious, and 2 fatal. In the most recent five-year period (01/01/2017 to 31/12/2021) 79 PICs occurred in the study area – 68 slight, 11 serious, and 0 fatal.

8.3.25 As can be seen above, the two time periods have a similar level of PICs split similarly over the three severity classifications. Due to this, the most recent five-year period has been assessed as is standard with Transport Assessments. The fatal PICs which occurred in the years before 2017 have however been assessed in order for the assessment to be robust.

8.3.26 The first fatal PIC occurred on the A422 Hennef Way at the roundabout junction with Ermont Way. It occurred when vehicle 1 (pedal cycle) crossed the roundabout entry from west to central refuge and hit the nearside of vehicle 2 (HGV) travelling north on Ermont Way in the offside lane waiting to enter the roundabout. The PIC was very likely caused by vehicle 1 using a mobile phone, vehicle 1 impaired by drugs (illicit or medicinal), vehicle 1 executing a poor turn or manoeuvre, and vehicle 1 failing to look properly.

8.3.27 The second fatal PIC occurred on Beaumont Road approximately 100m west of the junction with the A423 Southam Road. It occurred when vehicle 1 (HGV) travelling west along Beaumont Road stopped ahead of an access for delivery. The HGV then started to reverse to the access when a person (stow away/ attempting to enter the country) believed to be alighting from under the HGV sustained a fatal injury. The PIC was very likely caused by the casualty failing to judge the vehicles path or speed.

8.3.28 Due to the nature of the fatal PICs, it is not considered that they would contribute to a significant accident issue within the study area, and it is unlikely to be related to Covid-19 that there were no fatal PICs in the most recent five-year period.

8.3.29 Of the 79 PICs which have occurred since 1st January 2017, 9 have involved vulnerable road users which have been assessed below. There have also been 2 PICs

which have 'road layout' listed as a causation factor. On further assessment, it appears that these PICs have occurred more due to driver error than any road layout issues that require mitigation (car in the incorrect lane cutting in front of another car, and excessive speed leading to a junction overshoot).

8.3.30 The first PIC which involved a vulnerable road user was classified as 'slight' in severity and occurred on the A361 Southam Road on the footway on the eastern side of the road approximately 40m northeast of the junction with Marley Way. It occurred when a mobility scooter was travelling northeast on the footway and hit a pedal cycle travelling southeast also on the footway. The PIC was possibly caused by the mobility scooter being careless/ reckless/ in a hurry, failed to judge other persons path or speed, aggressive driving or passing too close to cyclist and possibly due to the pedal cycle travelling along the pavement.

8.3.31 The second PIC which involved a vulnerable road user was classed as 'slight' in severity and occurred on the A422 Hennef Way roundabout at the junction with the A4260 Concorde Avenue. It occurred when vehicle 1 (car) travelling west on the A422 Hennef Way on exiting the roundabout junction with the A4260 Concorde Avenue to continue west, hit a pedestrian crossing from the offside just west of the roundabout. The cause of the PIC was possibly due to the pedestrian failing to look properly and failing to judge the vehicles path or speed.

8.3.32 The third PIC which involved a vulnerable road user was classed as 'serious' in severity and occurred on the A422 Hennef Way roundabout at a toucan crossing approximately 40m southeast of the junction with the A423 Southam Road. It occurred when vehicle 1 (car) travelling southeast on the A422 in the offside lane failed to stop for a red signal at the toucan crossing and hit a pedestrian. The cause of the PIC was due to the vehicle failing to look properly and disobeying an automatic traffic signal.

8.3.33 The fourth PIC which involved a vulnerable road user was classed as 'slight' in severity and occurred on Waterworks Lane at the junction with Grimsbury Green. It occurred when vehicle 1 (car) travelling north on Waterworks Lane from the A422 roundabout turned right to Grimsbury Green but cut the corner and failed to give way to vehicle 2 (pedal cycle) travelling west of Grimsbury Green. The cause of the PIC was due to vehicle 1 being careless/ reckless/ in a hurry.

8.3.34 The fifth PIC which involved a vulnerable road user was classed as 'slight' in severity and occurred on the A361 Southam Road roundabout junction with the A422 Ruscot Avenue and Hennef Way. It occurred when vehicle 1 (car) travelling north on the A361 Southam Road overtook vehicle 2 (pedal cycle), also travelling north, intending to continue to the A423 Southam Road on immediate approach to the roundabout. Vehicle 1 went through a puddle suddenly splashing vehicle 2 causing the rider to fall. The cause of the PIC was due to a poor or defective road surface.

8.3.35 The sixth PIC which involved a vulnerable road user was classed as 'slight' in severity and occurred on the A422 Ruscot Avenue junction with Banbury Cross Retail Park. It occurred when vehicle 2 travelling east on the A422 Ruscot Avenue hit vehicle 2 (car) also travelling east as both vehicles exited the roundabout to continue east on the A422. Vehicle 2 stopped, and the passenger got out to speak to driver of vehicle 1 but vehicle 1 hit the pedestrian then fled the scene. The cause of the PIC was due to vehicle 1 executing a poot turn or manoeuvre and being careless/ reckless/ in a hurry.

8.3.36 The seventh PIC which involved a vulnerable road user was classed as 'serious' in severity and occurred on the A422 Ruscot Avenue junction with Lockheed Close. It occurred when vehicle 1 (car) travelling west having just exited the roundabout on the A422 Ruscot Avenue hit a pedestrian crossing from north to south pushing a bike across

the road between cars. The cause of the PIC was due to vehicle 1 failing to look properly and possibly due to dazzling sun.

8.3.37 The eighth PIC which involved a vulnerable road user was classed as 'slight' in severity and occurred on the A361 Southam Road junction with an unclassified road approximately 100m south of Hennef Way. It occurred when vehicle 1 (car) travelling north, turned right to the A361 failing to see vehicle 2 (pedal cycle) travelling south of the footway and hit vehicle 2. The cause of the PIC was due to vehicle 1 failing to look properly.

8.3.38 The ninth PIC which involved a vulnerable road user was classed as 'slight' in severity and occurred on Ermont Way roundabout junction with the A422 Hennef Way. It occurred when vehicle 1 (car) travelling north on Ermont Way entered the roundabout to turn left to the A422 but failed to give way to vehicle 2 (pedal cycle) which had entered Ermont Way from the cycle track from Daventry Road then entered roundabout to continue north to Wildmere Road rather than using the toucan crossing.

*PIC Data – 31st December 2021 to 16th November 2023*

8.3.39 In the most recent period (31/12/2021 to 16/11/2023) 11 PICs occurred in the study area – 8 slight, 3 serious, and 0 fatal. There was 1 PIC that involved a vulnerable road user. The collision occurred on the Grimsbury Green junction with Link Road from Concorde Avenue roundabout. The collision occurred in 2023.

8.3.40 There were 4 PICs on the A422 Hennef Way, there were 2 PICs at the M40 Junction 11 with one south of the junction and the other on the entry slip road. There were 2 PICs on the A422 with the M40 Junction 11. There was 1 PIC on the A423 Southam Road with Beaumont Road, 1 PIC on Wildmere Road and 1 PIC on Grimsbury Green.

8.3.41 It is considered that there is currently no significant accident issue within the study area that would require intervention and that the proposed development will not be detrimental to the safe operation of the local highway network.

## 8.4 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

### Construction

8.4.1 As set out in **Chapter 3: Application Site and Proposed Development**, it is anticipated the Proposed Scheme will be constructed in phases with initial works to provide the infrastructure (i.e. roundabout, T-junction and Spine Road) anticipated to start in 2024. Alongside this construction within Development will commence and be completed by 2025.

8.4.2 'Peak construction', in terms of the maximum number of vehicle movements, is anticipated to be associated with construction of the units within Development Plots – Zones A – D. It has been estimated there will be 250 car and HGV movements per day generated during peak construction.

### Traffic Impact

8.4.3 The following sections set out the impacts which have been identified, along with an indication of the significance of the resulting effects in the absence of any mitigation.

### Severance

8.4.4 Severance is the perceived division that can occur within a community when it becomes separated by a major traffic route. Whilst the IEMA Guidelines refer to the effect of traffic on severance of 30 %, 60 % and 90 % producing 'slight', 'moderate' and 'substantial' changes in severance respectively, it is suggested that caution be applied to relying on these quanta of change. The consideration of severance in this assessment has had due regard to specific local conditions.

8.4.5 The sensitivity of the traffic impacts is considered to be low (**Table 8.1**). Taking total traffic volumes – in accordance with the IEMA Guidelines – the level of traffic related to the operational phase is less than 30% on all links. The magnitude of overall traffic increase can, therefore, in accordance with **Table 8.2** be categorised as negligible for all the links.

8.4.6 Adopting the methodology set out in **Tables 8.1-8.4**, the low sensitivity (**Table 8.1**) and negligible magnitude of impact (**Table 8.2**) results in a **insignificant** effect of severance as a result of the proposals (**Table 8.4**).

### Driver Delay

8.4.7 Traffic delays to 'non-development' traffic can occur:

- At the site entrances where there will be additional turning movements;
- On the highways passing the site where there may be additional flow; and
- At key junctions on the nearby highway network.

8.4.8 Impact on driver delay is based on the quantum of change in traffic levels against interpretation of the local highway link capacity expressed in terms of predicted flows.

8.4.9 The construction of the Site would result in a negligible impact (**Table 8.2**) on a medium sensitivity receptor (**Table 8.1**) which would result in an **insignificant** effect on driver delay.

Pedestrian Delay and Amenity

8.4.10 Given the range of local factors and conditions which can influence pedestrian delay, the guidance suggests it is not considered wise to set down any thresholds, but instead it is recommended that assessors use their judgement to determine whether pedestrian delay is a significant impact.

8.4.11 There are no footways on the A361. It is, therefore, concluded that the construction of the Site will have an insignificant effect on pedestrian delay and amenity.

8.4.12 Adopting the methodology set out in **Tables 8.1-8.4**, the pedestrian routes within the vicinity of the site are considered to be low sensitivity receptors (**Table 8.1**). The magnitude of the impact is negligible (**Table 8.2**) and overall, this is considered to be an **insignificant** effect (**Table 8.4**). As already indicated, in common with standard assessment practice, minor effects and below are not considered to be significant in environmental assessment terms.

Fear and Intimidation

8.4.13 This again relates to pedestrians, and shares characteristics with pedestrian and non-motorised users and is based on the thresholds set out in **Table 8.5**.

8.4.14 Adopting the methodology set out in **Tables 8.1-8.4**, the pedestrian routes within the vicinity of the site are considered to be low sensitivity receptors (**Table 8.1**). The magnitude of the impact is negligible (**Table 8.2 & 8.5**) and overall, this is considered to be an **insignificant** effect (**Table 8.4**). As already indicated, in common with standard assessment practice, minor effects and below are not considered to be significant in environmental assessment terms.

Accidents and Safety

8.4.15 The PIC record for the local highway network has been obtained from OCC for the full five-year period preceding the introduction of Covid-19 restrictions up to the most recent PICs published (1st January 2015 to 31st December 2021). Further PIC data has been obtained from OCC from 31st December 2021 to 16th November 2023 and this is summarised below. The impact of additional traffic from the proposals is considered in terms of the magnitude of traffic increase and existing accident record data.

8.4.16 Adopting the methodology set out in **Tables 8.1-8.4**, the vicinity of the site is considered to be low sensitivity receptors (**Table 8.1**). The magnitude of the impact is negligible (**Table 8.2 & 8.5**) and overall, this is considered to be an **insignificant** effect (**Table 8.4**). As already indicated, in common with standard assessment practice, minor effects and below are not considered to be significant in environmental assessment terms.

Hazardous and Abnormal Loads

8.4.17 The IEMA Guidelines acknowledge that most developments will not result in increases in the number of movements of hazardous/dangerous loads. Regarding the Proposed Development, it is highly unlikely that any hazardous or abnormal loads will access the site.

8.4.18 Adopting the methodology set out in **Tables 8.1-8.4**, the low sensitivity (**Table 8.1**) and negligible magnitude of impact (**Table 8.2**) results in an **insignificant** effect of hazardous or abnormal loads as a result of the proposals (**Table 8.4**). As already indicated, in common with standard assessment practice, minor effects and below are not considered to be significant in environmental assessment terms.



**Operation**

8.4.19 This section contains an assessment of the potential impacts to traffic and transportation as a result of the operational phase of the Proposed Development.

Proposed Traffic Generation

8.4.20 TRICS database contains surveys of the vehicle and multimodal trip generation of a wide variety of sites which are classified by land use and various other attributes. The database was interrogated for multimodal surveys for 'Land Use 02 – Employment/ F – Warehousing (Commercial)', with sites in London, Scotland, Ireland, and Wales manually excluded. These trip rates have been discussed and agreed with both NH and LHA. The total vehicle and HGV trip rates are shown below in **Table 8.10** with the associated generation in **Table 8.11**.

**Table 8.10: Vehicle and HGV Generation Trip Rates - Warehousing**

	Vehicle Trip Rates			HGV Trip Rate		
	In	Out	Total	In	Out	Total
<b>08:00-09:00</b>	0.161	0.093	0.254	0.051	0.056	0.107
<b>17:00-18:00</b>	0.068	0.155	0.223	0.042	0.030	0.072
<b>07:00-19:00</b>	1.223	1.292	2.515	0.472	0.457	0.929

**Table 8.11: Vehicle and HGV Generation - Warehousing**

	Total Vehicle Generation			HGV Generation		
	In	Out	Total	In	Out	Total
<b>08:00-09:00</b>	225	130	356	71	78	150
<b>17:00-18:00</b>	95	217	312	59	42	101
<b>07:00-19:00</b>	1712	1809	3521	661	640	1301

8.4.21 As can be seen above, the proposed development is expected to generate around 356 two-way vehicle movements in the AM peak period and 312 two-way vehicle movements in the PM peak period. This equates to approximately 5-6 two-way vehicle movements every minute.

8.4.22 The TRICS database was also interrogated for multimodal surveys for 'Land Use 02 – Employment/ G – Parcel Distribution Centres', with sites in London, Scotland, Ireland, and Wales manually excluded. The total vehicle and HGV trip rates are shown below in **Table 8.12**.

**Table 8.12: Vehicle and HGV Generation Trip Rates – Parcel Distribution Centre**

	Vehicle Trip Rates			HGV Trip Rate		
	In	Out	Total	In	Out	Total
<b>08:00-09:00</b>	0.067	0.378	0.445	0.022	0.111	0.133
<b>17:00-18:00</b>	0.378	0.378	0.756	0.044	0.000	0.044
<b>07:00-19:00</b>	2.982	3.805	6.787	0.688	0.955	1.643

8.4.23 For robustness it has been assumed that a maximum of 20% of the site could be used as parcel distribution centres and the remainder for B8 as derived above. The modelling has therefore been undertaken based on the following traffic generation.

**Table 8.13: Vehicle and HGV Generation – Parcel Distribution Centre**

	Total Vehicle Generation			HGV Generation		
	In	Out	Total	In	Out	Total
<b>08:00-09:00</b>	199	210	409	63	94	157
<b>17:00-18:00</b>	182	279	461	59	34	93
<b>07:00-19:00</b>	2205	2512	4717	721	779	1501

8.4.24 As can be seen above, the proposed development is expected to generate around 409 two-way vehicle movements in the AM peak period and 461 two-way vehicle movements in the PM peak period. This equates to approximately 7-8 two-way vehicle movements every minute.

#### Proposed Traffic Distribution

8.4.25 Light vehicles include cars and vans. The light vehicles distribution is based on the existing journey to work pattern reported in the 2011 Census and reported at a middle super output area level (MSOA). All destinations have been assigned between population weighted ward centroids using ARCGIS software. Routes are based on fastest routes based on typical conditions for a weekday (Monday) morning (8am). Full details of the assignment is set out in the Transport Assessment.

8.4.26 The distribution for heavy vehicles on the wider highway network has been derived using data included within the Base Year Freight Matrices (BYFM) published by the Department for Transport (2012). The BYFM consist of the number of vehicles per average day between a set of origin-destination zone pairs for a 2006 base year. These zones are based on all 408 local authority districts, unitary authorities and London Boroughs and point zones for the 88 largest ports, 5 main freight airports and 56 major concentrations of distribution centres. This approach has been accepted by NH and OCC.

8.4.27 The traffic has been distributed between the two access points based on the building locations shown in the illustrative site layout. This indicates that approximately 35% of the GFA is located to the north of the site and would therefore use the northern access. The remaining 65% of the GFA is located more southernly within the site and would therefore use the southern access point.

8.4.28 The distribution of heavy vehicles to each region and the route which the vehicles are expected to take can be seen in **Table 8.14** below.

**Table 8.14: BYFM Distribution**

Region	Percentage	Routeing
East of England	11.4%	A422 E
East Midlands	10.8%	A361 N
North West of England	3.5%	M40 N
Scotland	0.6%	M40 N
South East of England	57.0%	M40 S – 48.1% A422 E – 7.3% A422 W – 1.7%
South West of England	5.5%	M40 N – 1.6% M40 S – 2.5%
Wales	0.3%	M40 N
West Midlands	7.5%	M40 N
Yorkshire and the Humber	3.4%	M40 N

8.4.29 The resulting assignment and development traffic generation by route is presented in **Table 8.15** below.

**Table 8.15: Proposed Traffic Assignment**

Link	Light Vehicles			HGVs		
	Assignm ent	AM	PM	Assignm ent	AM	PM
M40 N	14.2%	36	52	18.3%	29	17
M40 S	13.3%	34	49	50.6%	79	47
A422 E	17.1%	43	63	18.7%	29	17
A422 W	51.3%	129	189	1.7%	3	2
A361 N	4.1%	10	15	10.8%	17	10

#### Traffic Impact

8.4.30 The percentage change for total vehicles and then also, for completeness, for HGVs is shown in **Table 8.16** for the proposed operational traffic flows.

**Table 8.16: Traffic Impact on the Surrounding Road Network for Proposed Traffic Flows**

Locations	Base Traffic Flow – AADT		Proposed Traffic Flow		Percentage Increase	
	Totals	HGVs	Totals	HGVs	Totals	HGVs
M40 N	90,486	14,659	891	403	1.0%	2.5%
M40 S	92,286	15,506	834	1,113	1.6%	7.2%
A422 E	20,209	2,117	1,073	412	5.3%	19.4%
A422 W	45,183	2,548	3,218	37	7.1%	1.5%
A361 N	9,310	503	404	237	4.3%	47.1%

8.4.31 The following sections set out the impacts which have been identified, along with an indication of the significance of the resulting effects in the absence of any mitigation.

#### Severance

8.4.32 Severance is the perceived division that can occur within a community when it becomes separated by a major traffic route. Whilst the IEMA Guidelines refer to the effect of traffic on severance of 30%, 60% and 90% producing 'slight', 'moderate' and 'substantial' changes in severance respectively, it is suggested that caution be applied to relying on these quanta of change. The consideration of severance in this assessment has had due regard to specific local conditions.

8.4.33 The sensitivity of the traffic impacts is considered to be low (**Table 8.1**). Taking total traffic volumes – in accordance with the IEMA Guidelines – the level of traffic related to the operational phase is less than 30% on all links. The magnitude of overall traffic increase can, therefore, in accordance with **Table 8.2** be categorised as negligible for all the links.

8.4.34 For completeness, a similar exercise has been undertaken in respect of HGVs only. For HGVs, the increase is above 30% along the A361 N.

8.4.35 Adopting the methodology set out in **Tables 8.1-8.4**, the low sensitivity (**Table 8.1**) and significant magnitude of impact (**Table 8.2**) results in a **moderate** effect of severance as a result of the proposals (**Table 8.4**).

8.4.36 A routeing and signage strategy is to be confirmed for the site through condition. This will result in the residual impact being **minor**.

#### Driver Delay

8.4.37 Traffic delays to 'non-development' traffic can occur:

- At the site entrances where there will be additional turning movements;
- On the highways passing the site where there may be additional flow; and
- At key junctions on the nearby highway network.

8.4.38 Impact on driver delay is based on the quantum of change in traffic levels against interpretation of the local highway link capacity expressed in terms of predicted flows.

8.4.39 The modelling presented in the TA confirms that without mitigation the scheme would result in a moderate impact (**Table 8.2**) on a medium sensitivity receptor (**Table 8.1**) which would result in a **moderate** effect on driver delay.

8.4.40 Mitigation is therefore proposed to deal with this as discussed in the Transport Assessment which results in the residual impact being **minor**.

#### Pedestrian Delay and Amenity

8.4.41 Given the range of local factors and conditions which can influence pedestrian delay, the guidance suggests it is not considered wise to set down any thresholds, but instead it is recommended that assessors use their judgement to determine whether pedestrian delay is a significant impact.

8.4.42 There are no footways on the A361. It is, therefore, concluded that the proposals will have an insignificant effect on pedestrian delay and amenity.

8.4.43 Adopting the methodology set out in **Tables 8.1-8.4**, the pedestrian routes within the vicinity of the site are considered to be low sensitivity receptors (**Table 8.1**). The magnitude of the impact is minor/ slight (**Table 8.2**) and overall, this is considered to be a **minor** effect (**Table 8.4**). As already indicated, in common with standard assessment practice, minor effects are not considered to be significant in environmental assessment terms.

#### Fear and Intimidation

8.4.44 This again relates to pedestrians, and shares characteristics with pedestrian and non-motorised users and is based on the thresholds set out in **Table 8.5**.

8.4.45 Adopting the methodology set out in **Tables 8.1-8.4**, the pedestrian routes within the vicinity of the site are considered to be low sensitivity receptors (**Table 8.1**). The magnitude of the impact is negligible (**Table 8.2 & 8.5**) and overall, this is considered to be a **minor** effect (**Table 8.4**). As already indicated, in common with standard assessment practice, minor effects are not considered to be significant in environmental assessment terms.

#### Accidents and Safety

8.4.46 The PIC record for the local highway network has been obtained from OCC for the full five-year period preceding the introduction of Covid-19 restrictions up to the most recent PICs published (1st January 2015 to 31st December 2021). Further PIC data has been obtained from OCC from 31st December 2021 to 16th November 2023 and this is summarised below. The impact of additional traffic from the proposals is considered in terms of the magnitude of traffic increase and existing accident record data.

8.4.47 Adopting the methodology set out in **Tables 8.1-8.4**, the vicinity of the site is considered to be low sensitivity receptors (**Table 8.1**). The magnitude of the impact is negligible (**Table 8.2 & 8.5**) and overall, this is considered to be a minor effect (**Table 8.4**). As already indicated, in common with standard assessment practice, minor effects are not considered to be significant in environmental assessment terms.

#### Hazardous and Abnormal Loads

8.4.48 The IEMA Guidelines acknowledge that most developments will not result in increases in the number of movements of hazardous/dangerous loads. Regarding the Proposed Development, it is highly unlikely that any hazardous or abnormal loads will access the site.

8.4.49 Adopting the methodology set out in **Tables 8.1-8.4**, the low sensitivity (**Table 8.1**) and negligible magnitude of impact (**Table 8.2**) results in a **negligible** effect of hazardous or abnormal loads as a result of the proposals (**Table 8.4**).

**Decommissioning**

8.4.50 Given the nature and intended longevity of the Proposed Development's operational life, decommissioning has not been considered relevant as part of this study. Accordingly, the EIA is to focus on the potential likely significant effects of the Proposed Development during construction and operational phases only.

**8.5 MITIGATION AND ENHANCEMENT****Mitigation by Design**

8.5.1 As detailed in the Transport Assessment the scheme is accompanied by a Framework Travel Plan. The objectives of that document are to encourage non-car use by staff and therefore reduce the potential environmental impacts.

8.5.2 The proposed roundabout site access allows for the removal of a substandard bend on the approach to M40 Junction 11. At present the road bends through a centreline radius of 100m through 90° which is four design steps below desirable minimum at 70kph (six design steps below desirable minimum at 100kph). The roundabout allows the alignment of the A361 to be straightened in accordance with CD109 prior to the immediate approaches which are designed in accordance with CD116. The roundabout has been designed in accordance with the best practice guidance set out in DMRB CD116.

**Additional Mitigation**

8.5.3 In addition to the above, the following measures are included (or expected to be included as part of any planning consented).

Table 8.17: Mitigation

Ref	Measure to avoid, reduce or manage any adverse effects and/or to deliver beneficial effects	How measure would be secured		
		By Design	By S.106	By Condition
1	A contribution to OCC to fund wider capacity enhancements on the Hennef Way Corridor.		X	
2	Public Transport Enhancements – a contribution increasing the frequency of Service 200		X	
3	Further improvements to bus stop infrastructure		X	
4	Provision of EV Charging	X		
5	Routeing and Signage Strategy			X

## 8.6 CUMULATIVE AND IN-COMBINATION EFFECTS

8.6.1 The Transport Assessment which supports this chapter has taken into account cumulatively development from the adjacent consented Frontier Park (Land adjacent to M40 J11, Banbury – ref: 19/00128/HYBRID and 23/00501/REM). It considers the impact of that and future growth on the network in accordance with growth forecasts agreed with the Highway Authorities.

8.6.2 The conclusions on potential impacts therefore take full account of the cumulative effects of development.

## 8.7 SUMMARY

### Introduction

8.7.1 This chapter has provided an assessment of the potential significant effects of the proposed outline planning application for the construction of up to "**Outline planning application for the construction of up To 140,000 sqm of employment floorspace (use class B8 with ancillary offices and facilities) and servicing and infrastructure including new site accesses, internal roads and footpaths, landscaping including earthworks to create development platforms and bunds, drainage features and other associated works including demolition of the existing farmhouse. All matters of detail reserved.**"

8.7.2 This Chapter considers the potential traffic and transport implications of the development proposals both during the construction period and once the site is fully operational.

### Baseline Conditions

8.7.3 The Site is well connected to the local and wider road network with the M40 Junction 11 approximately 500m south. There are currently no significant accident issues within the study area that would require intervention as part of the Proposed Development.

8.7.4 At present, all forms of public transport are over 1km from the Proposed Development, but bus stops are to be built along the A361 adjacent to the western boundary as part of the Frontier Park site which would improve accessibility.

8.7.5 At present there are no pedestrian footways along the A361. As part of the Frontier Park development a footway is being built to allow pedestrian access to the new bus stops. There is a pedestrian/ cycle link provided via the Motorway underpass beneath the M40 which gives access to Banbury Gateway Shopping Centre and the main facilities which will be accessed from the Proposed Development.

### **Likely Significant Effects**

8.7.6 It is estimated there will be 250 car and HGV movements per day generated during peak construction. The vast majority of HGV and car movements generated during the construction period would be expected to route to/ from the M40.

8.7.7 Overall, the residual effect of the proposed development on highways during the construction phase is concluded to be negligible.

8.7.8 Once operational, the development site could generate around 6,300 two-way trips over a 24-hour weekday period, of which approximately 2,200 would be HGVs. The highest number of vehicle trips would route through the M40 north and south.

### **Mitigation and Enhancement**

8.7.9 The primary mitigation during the construction phase will include initial temporary access to the Site to enable preparation for construction and the construction of the new site access roundabout.

8.7.10 A Construction Management Plan would be prepared and the mitigation measures within it implemented throughout the construction phase. The aim of this will be to ensure the contractors meet the requirements of all relevant environmental legislation, agreements, authorisations and commitments.

8.7.11 The primary mitigation during the operational phase will include offsite improvements to J11 to improve capacity.

8.7.12 The site layout can incorporate direct connections to the adjacent existing and proposed bus infrastructure to facilitate public transport to and from the Site. An internal bus loop can be provided as part of the scheme.

8.7.13 The proposed internal access road will include a 3m wide segregated shared footpath and cycleway along the southern side of the access road.

### **Conclusion**

8.7.14 The effects of the Proposed Development with regard to the construction and operation phase have been considered in detail including the effect of driver delay, pedestrian delay, fear and intimidation, and accidents and safety. Overall, in transport terms the residual effects are not considered to be significant for either the construction or operational phase of the Proposed Development.



Table 8.18: Summary of Effects, Mitigation and Residual Effects

Receptor/ Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographica l Importance	Significance of Effects	Mitigation/ Enhancement Measures	Residual Effects
<b>Construction</b>								
Severance	This effects pedestrians.	Temporary / Direct	Low	Negligible	Local	Insignificant Adverse	None	Insignificant Adverse
Driver Delay	This effects road users.	Temporary / Direct	Medium	Negligible	Local	Insignificant Adverse	None	Insignificant Adverse
Pedestrian Delay and Amenity	This effects pedestrians.	Temporary / Direct	Low	Negligible	Local	Insignificant Adverse	None	Insignificant Adverse
Accidents and Safety	This effects road users.	Temporary / Direct	Low	Negligible	Local	Insignificant Adverse	None	Insignificant Adverse
Hazardous or Abnormal Loads	This effects pedestrians and road users.	Temporary / Direct	Low	Negligible	Local	Insignificant Adverse	None	Insignificant Adverse
Fear and Intimidation	This effects pedestrians.	Temporary / Direct	Low	Negligible	Local	Insignificant Adverse	None	Insignificant Adverse
<b>Operation</b>								
Severance	This effects pedestrians.	Permanent / Direct	Low	Significant	Local	Moderate Adverse	Routeing Strategy	Minor Adverse
Driver Delay	This effects road users.	Permanent / Direct	Medium	Moderate	Local	Moderate Adverse	Improvements to M40 J11 gyratory	Minor Adverse

**ENVIRONMENTAL STATEMENT**

**8 Transport & Access**

<b>Receptor/ Receiving Environment</b>	<b>Description of Effect</b>	<b>Nature of Effect</b>	<b>Sensitivity Value</b>	<b>Magnitude of Effect</b>	<b>Geographical Importance</b>	<b>Significance of Effects</b>	<b>Mitigation/ Enhancement Measures</b>	<b>Residual Effects</b>
Pedestrian Delay and Amenity	This effects pedestrians.	Permanent / Direct	Low	Minor/ Slight	Local	Minor Adverse	None	Minor Adverse
Accidents and Safety	This effects road users.	Permanent / Direct	Low	Negligible	Local	Minor Adverse	None	Minor Adverse
Hazardous or Abnormal Loads	This effects pedestrians and road users.	Permanent / Direct	Low	Negligible	Local	Negligible Adverse	None	Negligible Adverse
Fear and Intimidation	This effects pedestrians.	Permanent / Direct	Low	Negligible	Local	Minor Adverse	None	Minor Adverse
<b>Cumulative and In-combination</b>								
Severance	This effects pedestrians.	Permanent / Direct	Low	Significant	Local	Moderate Adverse	Routeing Strategy	Minor Adverse
Driver Delay	This effects road users.	Permanent / Direct	Medium	Moderate	Local	Moderate Adverse	Improvements to M40 J11 gyratory	Minor Adverse
Pedestrian Delay and Amenity	This effects pedestrians.	Permanent / Direct	Low	Minor/ Slight	Local	Minor Adverse	None	Minor Adverse
Accidents and Safety	This effects road users.	Permanent / Direct	Low	Negligible	Local	Minor Adverse	None	Minor Adverse
Hazardous or Abnormal Loads	This effects pedestrians and road users.	Permanent / Direct	Low	Negligible	Local	Negligible Adverse	None	Negligible Adverse

**ENVIRONMENTAL STATEMENT****8 Transport & Access**

<b>Receptor/ Receiving Environment</b>	<b>Description of Effect</b>	<b>Nature of Effect</b>	<b>Sensitivity Value</b>	<b>Magnitude of Effect</b>	<b>Geographica l Importance</b>	<b>Significance of Effects</b>	<b>Mitigation/ Enhancement Measures</b>	<b>Residual Effects</b>
Fear and Intimidation	This effects pedestrians.	Permanent / Direct	Low	Negligible	Local	Minor Adverse	None	Minor Adverse