

8 Transport

8.1 Introduction

8.1.1 This chapter of the ES was prepared by David Tucker Associates (DTA) and presents an assessment of the likely significant effects of the Development on Transport. Mitigation measures are identified, where appropriate, to avoid, reduce or offset any significant adverse effects identified and/or enhance likely beneficial effects. The nature and significance of the likely residual effects are reported.

8.1.2 The chapter is supported by the following appendices:

- Appendix 8.1: Transport Assessment (TA) (dated September 2021);
- Appendix 8.2: Framework Employment Travel Plan (dated September 2021); and
- Appendix 8.3: Minutes from Meetings held with Oxfordshire County Council (OCC).

Competence

8.1.3 The author of this Chapter was Simon Parfitt MSc, BA, CILT, Director at DTA with over thirty years' experience in the appraisal of transport and traffic implications including environmental impact appraisal.

8.2 Legislation, Planning Policy and Guidance

Legislation Context

8.2.1 There is no legislation of relevance to the assessment.

Planning Policy Context

8.2.2 A review of national, regional and local transportation and land use policies as well as how the Development meets those policy objectives is provided in the TA (Appendix 8.1).

National

8.2.3 The National Planning Policy Framework (2021)¹ (NPPF), which sets out the Government's policies to achieve sustainable development, is the key national planning policy relevant to the Development.

Regional

8.2.4 There is no regional policy of relevance to the Development.

Local

8.2.5 The following local planning policy is relevant to the Development:

- Oxfordshire Local Transport Plan 2015-2031 adopted September 2015, updated 2016²; and
- Cherwell Local Plan 2011 - 2031 Part 1 Partial Review, Adopted September 2020³.

- Cherwell Local Plan 2011 - 2031 Part 1, Re-adopted December 2016)⁴:

Guidance

8.2.6 The following guidance is relevant to the Development:

- Planning Practice Guidance (Live Document)⁵;
- Institute of Environmental Management and Assessment (now IEMA), Guidelines on the Environmental Assessment of Road Traffic (1993)⁶ (the 'IEMA Guidelines');
- LTN 1/20 Cycle Infrastructure Design;
- Guidance on Transport Assessment (DfT 2007) – formally withdrawn⁷; and
- Design Manual for Roads and Bridges (DMRB, various).

8.3 Assessment Methodology

Consultation

8.3.1 Cherwell District Council (CDC) provided their Scoping Opinion on the 3rd August 2021 (the 'Scoping Opinion'). The Scoping Opinion confirmed that the highway authority, OCC had not responded to their consultation request. However, DTA were in liaison with OCC outside of the Scoping Request and reference in Table 8.1 is made to the discussions between DTA and OCC.

Table 8.1: Consultation Response Summary

Consultee and Comment	Response
<i>Cherwell District Council</i>	
Construction traffic impacts should be assessed.	Noted. The construction assessment is set out at Section 8.6.
<i>Oxfordshire County Council</i>	
Discussions with OCC related to the evolution of the access strategy for the Site. These included a series of meetings held on the 21/5/21, 17/6/21 and 5/8/21. Detailed minutes of the former two meetings are provided at Appendix 8.3. along with an email dated 27/5/21 (DTA).	The access designs were agreed via detailed feedback from OCC. DTA provided historical context of the trip parameters agreed within the Axis J9 development (Phase 1 and Phase 2). The 2017 Appeal Application (Ref: APP/C3105/W/16/3163551) and the 2017 Residential Application (Ref: 17/00455/HYBRID) are equally applicable to Phase 3.

8.3.2 As such, the proposals have been discussed and largely agreed with the OCC Design and Development Control officers. The Site access proposals are agreed as part of the recent meeting exchanges described in Table 8.1. The geographical scope of impact appraisal similarly was agreed during those meetings. The relevant traffic and trip parameters were all agreed as part of the 2017 Appeal Application and the 2017 Residential Application. Reference to these various parameters is set out at various locations within Section 7.1 and 7.2 of the TA (Appendix 8.1).

- 8.3.3 The access strategy has been developed utilising data provided by OCC from their wider Bicester traffic model as described in Section 8.4 of this chapter.

Study Area and Scope

- 8.3.4 The study area includes the proposed SLR onto which the Development units are accessed, Middleton Stoney Road via which the Site is accessed prior to completion of the SLR, and Howes Lane and Vendee Drive.
- 8.3.5 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.
- 8.3.6 The highway network relevant to the Site will change as a result of the committed infrastructure, i.e., the SLR being delivered by OCC. The SLR is committed for completion in 2024. The base year of assessment is 2020 (pre Covid, with subsequent data through to 2021 being unrepresentative). An assessment of future years of 2022 (Construction) and 2025 (Operational) is presented in this Chapter.
- 8.3.7 The completed Development assessment periods are therefore as follows:
- Year 2020 (Baseline);
 - Year 2022 Without and With Development Traffic (Pre-SLR); and
 - Year 2025 Without and With Development Traffic (Post-SLR).
- 8.3.8 The TA includes assessments of highway junction capacity in 2031. Despite the SLR being committed for completion in 2024, as a worst-case assessment with SLR and without SLR scenarios are each undertaken based on 2031 flows provided by OCC.

Establishing Baseline Conditions

- 8.3.9 Baseline conditions were determined using background traffic flow and accident data obtained from the Local Highway Authority, OCC.
- 8.3.10 Traffic data for the baseline and future years is derived from the OCC traffic model data (2026 Reference Case Without SLR and 2031 With SLR) respectively. The 2026 flows have been factored back to 2020 Baseline (and 2022). As part of a worst-case assessment traffic flows for the Axis J9 development (i.e., Phase 1 and 2) were manually added to the Reference Case flows. This gives rise to an element of double counting. However, it is not possible to disaggregate the individual component elements of the OCC traffic model dates, and hence to ensure robust appraisal discrete additional allowance is made for the Axis J9 development. These forecasts for Phase 1 and 2 of the Axis J9 Development are taken from the 2017 Appeal Application TA (dated 14/06/17).
- 8.3.11 Multiple site visits undertaken both pre and post Covid lockdowns have been made. Site visits were undertaken during AM and PM peak periods as well as inter-peak periods.
- 8.3.12 Accident data has been obtained from OCC for the most recent 5-year period (01/01/16-31/05/21).
- 8.3.13 Baseline Traffic data provided from OCC's traffic model related to the following:

- Middleton Stoney Road;
- Middleton Stoney Road/Howes Lane roundabout; and
- Howes Lane/Bucknell Road junction.

Identifying Likely Significant Effects

- 8.3.14 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.
- 8.3.15 The IEMA Guidelines were used to ensure that the likely significant environmental effects arising due to predicted changes in traffic levels are addressed. It sets out the recommended list of environmental impacts that could be considered as potentially significant whenever a new development is likely to give rise to changes in traffic flows:
- Severance;
 - Driver delay;
 - Pedestrian and cyclist delay and amenity;
 - Accidents and safety;
 - Hazardous loads; and,
 - Public Transport.
- 8.3.16 IAQM guidance recommends standard measures for mitigating the impacts of dust during construction and demolition, and these will be incorporated during the construction process. A detailed assessment of Air Quality effects was included in the 2017 Axis J9 ES which reported negligible residual effects for both the construction and operation of the 2017 Appeal Application. As detailed in the Scoping Report (Appendix 3.2) and as agreed with CDC via the Scoping Opinion (Appendix 3.3), air quality is scoped out of further assessment within this ES.

Construction

- 8.3.17 HGV construction traffic will take pre-arranged routes to access the strategic road network (A41). The Axis J9 Phase 1 and 2 HGV routing agreement requires vehicles to arrive via Vendee Drive and onto the A41. The same would apply for the Development. No HGV construction traffic will utilise Middleton Stoney Road (West). Construction traffic effects were therefore considered using baseline HGV traffic figures on Vendee Drive and the short section of Middleton Stoney Road between Empire Road and Howes Lane.

Completed Development

- 8.3.18 The effects of the completed Development were identified through junction modelling results included within Section 8 of the TA (Appendix 8.1). Percentage increases on individual road links are set out within this chapter to establish the environmental significance of Site traffic.

Development Trip Generation

- 8.3.19 The Development comprises 17,808sqm gross external area (GEA) or 16,901sqm gross internal area (GIA) of fully flexible employment floorspace (i.e. Class Eg(iii), B2 or B8 floorspace). This assessment uses the GIA value of the Development to inform the assessment and therefore the 16,901sqm GIA value has been used. Trip rates were derived

from the TRICS database (national traffic generation database) to determine the peak period and daily traffic generation for the Site. The rates were agreed with OCC as part of the 2017 Appeal Application (i.e., the Axis J9 development Phases 1 and 2) and are set out in Section 7 of the TA.

- 8.3.20 The Census 2011 journey to work data provides an estimation of the main origins for employees associated with the Development. The 'middle super output area' (geographical area for the collection and publication of statistics) for Cherwell 013 was used to provide a reasonable assumption of the distribution of employee trips. These forecasts were agreed with OCC as part of the gross internal and provided at Appendix H of the TA.

Cumulative effects

- 8.3.21 The traffic generation from all relevant cumulative development on the adjacent highway network is incorporated within the OCC traffic model data supplied by the highway authority. There is no way of disaggregating the individual traffic components of individual developments. The assessment of the completed Development is therefore made in the context of all relevant forecast development and infrastructure.

Determining Effect Significance

Sensitivity of Receptor

- 8.3.22 Table 8.2 provides the definitions of receptor sensitivity applied in the assessment.

Table 8.2: Receptor Sensitivity Descriptors

Value (Sensitivity)	Descriptor
High	Receptors with the greatest sensitivity to changes in traffic flows such as junctions and links at capacity, points of access to schools, hospitals and playgrounds. Urban and residential roads (including Homes Zones) used by pedestrians without pavements. Areas with no public transport provision.
Medium	Traffic flow-sensitive areas such as junctions and links with high flows but that are not at capacity. Heavily used areas such as local or district centres and employment areas. Areas with narrow or poor quality pavements and unsegregated cycleways. Conservations Areas. Areas with limited public transport provision (e.g. peak hour only or over-subscribed services).
Low	Receptors with some sensitivity to changes in traffic flows such as links and junctions with moderate or low flows that are operating within capacities, residential and employment areas with appropriate pavements and crossing facilities, public open space, nature conservation areas and areas with Listed Buildings. Areas with good public transport provision (i.e. frequent services within capacity).
Negligible	Receptors with a very low sensitivity to traffic flows and / or distant from affected roads and junctions.

Magnitude of Impact

- 8.3.23 In accordance with the IEMA Guidelines, the following rules of thumb are applied to delimit the scale and extent of the 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 any other specifically sensitive areas where traffic flows have increased by 10% or more.

- 8.3.24 The guidance is based upon knowledge and experience of environmental effects of traffic and also acknowledges that traffic forecasting is not an exact science. The 30% threshold is based upon research and experience of the environmental effects of traffic, with less than a 30% increase generally resulting in imperceptible changes in the environmental effects of traffic apart from within sensitive locations. The guidance considers that projected changes in traffic flow of less than 10% create no discernible environmental effect, hence the second threshold as set out in Rule 2.
- 8.3.25 The IEMA Guidelines give examples of sensitive locations as: locations where specific environmental problems may occur such as accident black-spots, conservation areas, hospitals; and, links with high pedestrian flows (e.g. near to schools). However, for the purpose of ensuring a robust assessment, all of the assessed highway links have been considered as sensitive receptors. The basis for determining if there is any transport effect will therefore make use of the 10% threshold outlined in the IEMA Guidelines (i.e. Rule 2).
- 8.3.26 The magnitude of impact of traffic change varies depending upon the environmental impact criteria being considered e.g. severance, driver delay and so on. Reference was made to the IEMA Guidelines on each criterion. Reference was also made to DMRB LA 104 – Environmental assessment and monitoring in terms of definition of measures of magnitude of impact.
- 8.3.27 A description of the terminology used in describing the magnitude of the environmental impact, which could be either adverse or beneficial, is set out in Table 8.3. It is important to note that the following parameters are used as a guide and that, as advocated in the IEMA Guidelines, a range of factors are considered in reaching a professional judgment when assessing the magnitude of the impact.

Table 8.3: Magnitude of Impact Descriptors

Impact Magnitude	Descriptor
High	A change in total or segregated traffic flow of greater than 50% or any change in traffic flow that would result in the capacity of a link or junction being exceeded. Removal or addition of a public transport service(s)
Medium	A change in total or segregated traffic flow of between 25% and 50%. Permanent severance of an existing footpath or cycleway or alterations to public transport services (e.g. frequency of service or patronage). Creation of new cycleway or public footpath.
Low	A change in total or segregated traffic flow of between 10% and 25% or temporary severance of an existing footpath or cycleway. Enhancement to the pedestrian and cycle environment.
Negligible	A change in total or segregated traffic flow ¹ of less than 10%

Assessing Significance

- 8.3.28 The assessment of likely significant effects as a result of the Development has taken into account both the construction phase and once the Development is completed and occupied. The significance level attributed to each effect was assessed based on the magnitude of impact due to the Development and the sensitivity of the affected receptor / resource to change.
- 8.3.29 The significance of an effect was determined by the interaction of two factors:
- the magnitude, scale or severity of the effect or change;
 - the value, importance or sensitivity of the environmental resource being affected.
- 8.3.30 The level of total traffic flow or composition change was considered in relation to the sensitivity of the receptor in line with the significance matrix summarised in Table 8.4.

Table 8.4: Significance of Effect Criteria

Sensitivity of Receptor	Magnitude of Impact			
	High	Medium	Low	Negligible
High	Major	Substantial	Moderate	Minor
Medium	Substantial	Moderate	Minor	Negligible
Low	Moderate	Minor	Minor	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

Assumptions and Limitations

- 8.3.31 The construction traffic estimates have been based upon professional experience of other similar sites, as distinct from specific future programming plans.
- 8.3.32 The TA (Appendix 8.1) assumes that the Site will draw travel demand from the existing Bicester travel to work catchment area as described in the most recent Census journey to work statistics.
- 8.3.33 The highway authority supplied traffic forecast model data which incorporates a series of committed development and infrastructure schemes. The traffic from committed development cannot be disaggregated on a site by site basis.
- 8.3.34 Traffic generation estimates within the TA address the potential spread of travel demand generation based on different uses (industrial and warehousing). Estimates were therefore based on the worst-case (highest vehicular demand) calculated from each alternative uses across the employment floorspace. The final uses will be subject to market requirements.

8.4 Baseline Conditions

Site Location and Access

- 8.4.1 The Site is located within the NW Bicester Eco Town.
- 8.4.2 To the south and south west of the Site is the Axis J9 development. Phase 1 of the Axis J9 development is already constructed with Phase 2 construction underway. When complete Phases 1 and 2 will comprise c.45,000sqm GIA employment floorspace. Phases 1 and 2

are accessed via a right turn lane junction onto B4030 Middleton Stoney Road to the west of Howes Lane. The Phase 1 and 2 access road is named Empire Road. It is 7.3m wide and contains a 3m footway / cycleway and a 2m footway.

- 8.4.3 The Development would initially be accessed via Middleton Stoney Road through the Axis J9 development onto the section of the SLR that will be delivered by the Development. The section of the SLR to be delivered by the Development will follow the approved route and will be constructed in accordance with the consented detail of the planning approval for the SLR (Appendix 5.1, Drawing No.14042-60)

Local Highway Network

- 8.4.4 Middleton Stoney Road is single carriageway and subject to a 40mph speed limit and also comprises a 3m footway / cycleway linking to the roundabout formed with Howes Lane.
- 8.4.5 The A4095 Howes Lane is a single carriageway road and currently forms the north western boundary of Bicester town. Howes Lane forms the eastern Site boundary and is approximately 6m wide. It is subject to a speed limit of 50 mph. There are no footways or street lighting provided on Howes Lane at the proposed Site frontage.
- 8.4.6 A traffic signal controlled junction with Shakespeare Drive is situated on Howes Lane approximately 500m to the north of the Site. Shakespeare Drive provides access to the Highfield residential area to the east of the Site. The speed limit on Howes Lane changes to 40 mph approximately 80m to the north of this junction.
- 8.4.7 Howes Lane links with Bucknell Road to the north east of the Site via simple priority junction. The A4095 continues north east via a three-arm roundabout junction and marks the northern boundary of the town. The railway line crosses on a bridge over the road at this location between the priority and the roundabout junction. The bridge has a height restriction of 4.5m.
- 8.4.8 To the south, Howes Lane links with the four arm roundabout junction with the B4030 Middleton Stoney Road and Vendee Drive. Vendee Drive provides access to the A41. It benefits from a shared cycleway / footway on the eastern side and is subject to a speed limit of 50 mph. It links with the A41 via a roundabout junction to the south east.

Bus and Rail Services

- 8.4.9 Bus service 250 runs along Middleton Stoney Road with stops in each direction within close proximity to the Site and bus service 21 runs within the Highfield residential area. Based on observation prior to COVID restrictions, there is spare capacity within both services.
- 8.4.10 Bicester benefits from two railway stations in the town; Bicester North and Bicester Village (previously Bicester Town). These stations are situated approximately 3.1km and 3.7km from the Site, respectively.
- 8.4.11 Both train stations are managed by Chiltern Railways. Bicester North station provides an hourly service to Birmingham and to Banbury, and 2 trains an hour to London Marylebone. Trains from Bicester Village provides a half-hourly service between London Marylebone and Oxford.

Walking and Cycling

- 8.4.12 There are no formal footways located within the vicinity of the Site on Howes Lane. To the north of the junction with Shakespeare Drive, a footpath is provided on the eastern side of the road linking with Shakespeare Drive. This footway extends north for around 100m providing access to an employment area at the junction of Howes Lane.
- 8.4.13 A footpath is provided from the Highfields residential area to the east. The footpath is approximately 1.8m in width and is surfaced.
- 8.4.14 A further grassed footpath is provided to the north of Beckdale Close and also links with Howes Lane.
- 8.4.15 At the roundabout junction with the B4030 to the south, tactile paving is provided on all arms. A shared cycleway / footway is provided south and west of the roundabout. The pedestrian and cycling infrastructure adjacent to the Site will be significantly enhanced on completion of the SLR with comprehensive wide footway/cycleways on the SLR and forming part of a network across North West Bicester.
- 8.4.16 Personal Injury Accident data for the most recently available 5 year period (01/01/16 – 31/05/21) has been provided by OCC. The full details are provided within Section 3.6 of the TA (Appendix 8.1). There are no existing road safety issues within the vicinity of the site. There are no patterns which would give rise to concern and no evidence to suggest that the development proposals would create or exacerbate road safety within the surrounding area.

Future Baseline

- 8.4.17 Traffic from committed development within the vicinity are incorporated within the OCC traffic model (2031) data provided.
- 8.4.18 These have been factored to 2025 for an appropriate operational daily phase within this chapter. The 2031 data is used as provided within the TA to assess peak hour network capacity.
- 8.4.19 There are a number of changes that will be made to the wider network by 2031 which will include the reconfiguration of Howes Lane to form a new NW Bicester SLR and the partial closure of Howes Lane to vehicular traffic. The SLR will provide a new, straight underpass of the railway line, removing the constraint of the skewed railway bridge and junctions either side. The 2031 model traffic flows reflect these changes.

Summary of Receptors and Sensitivity

- 8.4.20 The adjacent road network does not comprise traditionally sensitive receptors such as schools, playgrounds, poor pedestrian facilities or high levels of congestion. Howes Lane has no footways, but there is no demand to walk along the route. Each of the adjacent links are therefore designated as having low receptor sensitivity.

Table 8.5: Summary of Receptor Sensitivity

Receptor	Sensitivity (Value)	Rationale
<i>Existing</i>		
Howes Lane (relevant to Completed Development)	Low	No facilities, no demand to walk along. Not congested.
Middleton Stoney Road (East) (relevant to Completed Development)	Low	Good quality pedestrian/cycle routes. Not congested.
Vendee Drive (relevant to Construction and Completed Development)	Low	Good quality pedestrian/cycle routes. Not congested.
<i>Future</i>		
SLR	Low	High quality pedestrian/cycle links and crossings. Designed to cater for future traffic levels.

8.5 Scheme Design and Management

Construction

- 8.5.1 A Construction Traffic Management Plan (CTMP) will be prepared to control traffic during the temporary period of construction, which is expected to be secured by planning condition. This will include measures to control HGV movements in respect of timing, routing and wheel washing. Other measures to control construction work on Site will also be implemented.
- 8.5.2 Access to the Site is designed in accordance with best practice guidance to ensure that appropriate access to the Site can be achieved. Temporary construction access can be readily achieved via extension of the Axis J9 development road layout, and along the route of the SLR, part of which is being delivered by the Applicant. This would be agreed with OCC and expected to be secured by planning condition.

Completed Development

- 8.5.3 The design of the Development includes the provision of fully technically compliant access junctions onto a technically compliant section of the SLR.
- 8.5.4 The design of the section of the SLR from which the Development accesses will be taken has been progressed and agreed to planning stage with the designers at OCC responsible for the delivery of the full SLR.
- 8.5.5 Prior to the completion of the SLR (by OCC), Site traffic will route via the Axis J9 development road network and join the existing public highway at the junction of Middleton Stoney Road/Empire Road. The SLR is programmed for completion in 2024. Once the SLR

is complete, the link through to the Axis J9 development would be closed to vehicular traffic, with all Site traffic routing either north or south along the SLR.

- 8.5.6 The Development access junctions onto the SLR are each right turn lane junctions (into the western parcel and eastern parcel respectively).
- 8.5.7 The accesses and the section of the SLR being constructed by the Applicant will comprise fully compliant pedestrian and cyclist facilities, consistent with the OCC design of the wider SLR.
- 8.5.8 Once the SLR has been completed and is open to traffic, it is OCC's stated intention to close part of Howes Lane to vehicular traffic. The Applicant has agreed to provide a protected route alignment for a pedestrian/cyclist connection within the red line to connect the SLR to Howes Lane.
- 8.5.9 The car and cycle parking levels are compliant with local standards. A total of 206 car parking spaces and 88 cycle parking spaces are to be provided by the Development.
- 8.5.10 Further mitigation will comprise a Travel Plan for the Site to reduce reliance on the private car for staff and visitor journeys. A Framework version of the Travel Plan is provided at Appendix 8.2. This will be secured via S106 agreement.

8.6 Construction Assessment of Effects

- 8.6.1 During the construction of the Development, it will be necessary for various plant, equipment and materials to be transported to the Site. The indicative delivery programme for the Development is estimated to 18 months or 1.5 years. Subject to planning permission, construction is anticipated to commence in Q1 2022 and be completed by Q2 2023. Construction of the Development is likely to take place continuously over the 18 month period, albeit at different levels of intensity.
- 8.6.2 Works will include the construction of a section of the SLR from which the operational users of the Development will take access. Construction traffic will enter and exit via Empire Road (the Axis J9 development) via Middleton Stoney Road. It is anticipated that most construction vehicles will approach the Site either from the A41 via M40 Junction 9 or to the south towards Aylesbury.
- 8.6.3 The routes taken by construction traffic on the local highway network will be agreed with the planning and highway authorities, and will also be subject to the existing physical and legal restrictions on movements of large vehicles. This includes the low bridge to the north east of the Site on Howes Lane. The construction routing agreement for the Axis J9 development is considered to be equally appropriate for the Development and should be implemented. This requires all construction HGV traffic to route via Vendee Drive. The routing agreement for Axis J9 Phase 1 and 2 was agreed with both CDC and OCC.
- 8.6.4 The number of HGV movements associated with the construction of the Site is difficult to estimate with certainty on a daily basis, as it will depend upon the preferred construction techniques and will also vary between construction phases. However, based upon construction experience of similar schemes, it is considered that during the main construction phases, on an average daily basis there would be a total of 20 two-way HGV movements.

- 8.6.5 Throughout the various stages of the construction programme, it is estimated that there would be approximately 30 construction personnel on-site, of whom 75% are estimated to drive to the Site. There are likely to be in the order of 25 vehicles parked on-site at any one time. The arrival of construction staff is assumed to follow a similar distribution to future employees of the Site.

HGV Construction Site Traffic Movements (2022)

- 8.6.6 Comparing the estimated movements with the existing level of HGV movements on the study area network gives rise to the percentage increases in daily HGV flows set out in Table 8.6.

Table 8.6: Percentage Increase in Daily HGV movements During Construction (2022)

Link	Baseline HGV flows (2-way)	Predicted increase in HGV movements	Percentage Increase
Middleton Stoney Road (between Howes Lane roundabout and Empire Way) Site frontage	860	20	2.3%
Vendee Drive	1708	20	1.2%

- 8.6.7 Middleton Stoney Road is a rural link and is not a route via which to encourage HGV movements. As such, a routing restriction to preclude such movements is appropriate with all movements routing via the B4030 / A4095 roundabout onto Vendee Drive to the south. Similarly, no construction HGV traffic will use Howes Lane.

Severance

- 8.6.8 Given the low levels of daily flows generated by construction traffic, there will be no significant severance effects expected as result of the Development. The sensitivity of the receptor is low and the magnitude of change is negligible. Therefore, the significance of the effect is negligible.

Driver delay

- 8.6.9 Given the low levels of traffic flows generated by construction traffic there will be no significant effect on driver delay. Background traffic peak hour movements are unlikely to coincide with any peak (however limited in view of overall numbers) in construction traffic. The sensitivity of the receptor is low and the magnitude of change is negligible. Therefore, the significance of the effect is negligible.

Pedestrian and cyclist delay and amenity

- 8.6.10 Pedestrian and cyclist activity will not be significantly affected by construction traffic and the recommended routing. Routing of vehicles reflects the objective of minimising the areas of residential development affected and hence pedestrian activity. The construction HGV route is characterised by the presence of off-road cycle lanes providing safe and convenient cycling conditions. The sensitivity of the receptor is low and the magnitude of change is negligible. Therefore, the significance of the effect is negligible.

Accidents and safety

- 8.6.11 The expected changes in traffic are too small in comparison with base flows to have any statistically meaningful effects upon the observed local accident rate record. The sensitivity of the receptor is low and the magnitude of change is negligible. Therefore, the significance of the effect is negligible.

Hazardous loads

- 8.6.12 Due to the nature of the construction activities it is not anticipated that the construction process will require carriage of materials listed on The Carriage of Dangerous Goods in the UK⁸. The sensitivity of the receptor is low and the magnitude of change is negligible. Therefore, the significance of the effect is negligible.

Public Transport

- 8.6.13 As outlined above, it is estimated that there would be approximately 30 construction personnel on-site, of whom 75% are estimated to drive to the Site. Therefore, up to 25% of the construction workforce could use public transport to access the Site, and this would equate to less than 8 additional trips one-way trips or 16 two-way trips on the public transport network. The sensitivity of the receptor is low and the magnitude of change is negligible. Therefore, the significance of the effect is negligible.

Mitigation, Monitoring and Residual Effects

- 8.6.14 As set out under “Scheme Design and Management”, the Applicant has committed to ensuring that the contractor(s) implement CTMPs throughout construction of the Development which would include standard control measures for minimising, managing and monitoring construction effects. In order to mitigate the potential effects of construction traffic the developer will ensure that a CTMP will be implemented by the contractor(s).
- 8.6.15 On-going monitoring of construction traffic would form part of the CTMPs and would be the responsibility of the contractor.
- 8.6.16 Effective implementation of the CTMPs would minimise potential adverse effects associated with construction activity. Overall, there would be no significant residual effects as a result of construction traffic arising from the Development.

8.7 Completed Development Assessment of Effects

Site Access

- 8.7.1 The proposed temporary access from Middleton Stoney Road and Empire Road will take the form of an access road from which the Development will be served. The temporary access will be interim until the remainder of the SLR is brought forward. Thereafter, the interim link into Empire Road will be closed off to Development traffic. In the long term, the Eco Town envisages the link between the SLR and the Axis J9 development as a bus route and a pedestrian / cycle link. The pedestrian / cycle function will be retained throughout.
- 8.7.2 The accesses into each of the Development parcels and the section of the SLR to be delivered by the Applicant are designed in accordance with the Design Manual for Roads and Bridges (DMRB). Each element has been designed to accommodate large HGVs and the SLR will be lit. The proposed design has been subject to independent Road Safety Audit

(RSA), which made no recommendations for amendment. The RSA is provided as Appendix D of the TA (Appendix 8.1).

- 8.7.3 The SLR carriageway will be 7.3m wide with 4.0m footway / cycleway on the northern side and 2.5m cycleway and 2m footway to the south providing safe and convenient passage for all modes of travel. The proposal is compliant with LTN 1/20 Cycle Infrastructure Design.
- 8.7.4 Within the Development itself, the layout will provide a safe and convenient network for pedestrians and cyclists. Pedestrian and cyclist priority across the accesses is proposed.
- 8.7.5 Detailed assessments of the Development accesses along with the Middleton Stoney Road/Empire Road and SLR/Vendee Drive roundabout junctions have been undertaken and are set out in detail in the TA (Appendix 8.1 Section 8). These illustrate that in highway capacity terms the Development will have a negligible impact.

Traffic Flows

- 8.7.6 The generation, distribution and assignment of traffic from the Development are fully described in the TA (Appendix 8.1) within Section 7. A range of daily development traffic numbers are given in Table 8.7 reflecting the flexible employment land uses that are applied for. These estimates reflect the theoretical outcomes where all of the floorspace is either occupied by industrial use or alternatively all occupied by warehousing use. The estimates therefore provide a range and are not additive. The impact appraisal undertaken is based on the higher flows and hence the worst case scenario.

Table 8.7: Range of Development Traffic Generation (24 Hour Two-Way Flows)

Time Period	Cars/Vans	HGVs	Total Vehicles
Daily (100% Industrial Development)	722	85	807
Daily (100% Warehousing Development)	281	132	413

- 8.7.7 The Development will initially be accessed via the Axis J9 development (i.e. pre SLR) during which construction traffic may also be present. This will continue until the SLR is complete at which point the Development will take access via the completed SLR.

Year 2022 Scenario

- 8.7.8 For the purposes of the pre-SLR appraisal, a worst-case assessment in 2022 will reflect:
- Access onto the partially constructed SLR;
 - Route via Middleton Stoney Road/Empire Road; and
 - Assume Development fully operational – no construction traffic.

- 8.7.9 Traffic flows reflecting the above, with and without Development are set out in Table 8.8.

Table 8.8: Year 2022 Pre-SLR Daily (24 hour two-way) Traffic Flows with and without Development

Link	Without Development	With Development	% Increase
Howes Lane / SLR	12,560	12,907	2.8%
B4030 (West)	14,316	14,324	0.1%

Link	Without Development	With Development	% Increase
Vendee Drive	16,865	17,051	1.1%
Middleton Stoney Road (East)	13,984	14,251	2.0%
Empire Road	1,669	2,476	48.4%

Year 2025 Scenario

8.7.10 For the purposes of the post-SLR appraisal, a worst-case assessment in 2025 will reflect:

- Access via the completed SLR;
- Assume Development fully operational; and
- Based on 2031 OCC traffic model output growthed back to 2025.

8.7.11 Traffic flows reflecting the above, with and without Development are set out in Table 8.9.

Table 8.9: Year 2025 Post-SLR Daily (24-hour two-way) Traffic Flows with and without Development

Link	without Development	with Development	% Increase
SLR (North)	12,598	12,945	2.8%
SLR (South)	12,598	13,058	3.7%
B4030 (West)	19,035	19,043	0.1%
Vendee Drive	18,036	18,222	1.0%
Middleton Stoney Road (East)	14,814	15,081	1.8%

8.7.12 The IEMA Guidelines suggest that *“detailed environmental impact studies will only be triggered where road links experience a change in traffic greater than 30%, or more than 10% where the links contain sensitive interest.”* On this basis, the links are defined as follows:

- There are no locations where increase in flows exceed 30% (with sensitive receptors).
- The only link exhibiting an increase of more than 30% is the Axis J9 development access road (Empire Road) in the temporary pre-SLR scenario. This is a modern industrial access road and hence fully compliant and appropriate in design with negligible resulting significance.
- There are no other locations where increase in flows is between 10% and 30% with or without sensitive receptors.
- All other locations exhibit an increase in flows less than 10%.

8.7.13 The highway locations described with particular regard to the identification of sensitive receptors represent those for which detailed consideration is required within the IEMA Guidelines i.e. with an increase in flow of 10% or more. There are no links that fall into this category.

Severance

- 8.7.14 In terms of the suggested thresholds for traffic change impact on severance, no links experience an increase in excess of the 30% 'slight' category in either the Year 2022 or Year 2025 scenario. No significant severance effects are therefore predicted. The sensitivity of the receptor is low, and the magnitude of change is negligible. Therefore, the significance of the effect is negligible.

Driver delay

- 8.7.15 Peak hour operational assessments were undertaken within the TA at a number of junctions on the local network in future year of 2031. The results of these are included in Section 8 of the TA (Appendix 8.1).
- 8.7.16 The assessments show that the Development accesses, the B4030 / Howes Lane roundabout, and the Middleton Stoney Road / Empire Road junction will all operate satisfactorily in all modelled scenarios with modest queuing and minimal delay during the peak hour periods in both the Year 2022 or Year 2025 scenarios. The difference between without and with development traffic is negligible.
- 8.7.17 The sensitivity of the receptor is low and the magnitude of change is negligible. Therefore, the significance of the effect is negligible.

Pedestrian and Cyclist Delay and Amenity

- 8.7.18 Pedestrian delay and amenity relate to both existing and new residents in the area. The IEMA guidelines describe a range of thresholds of pedestrian crossing time of 10 seconds (lower) to 40 seconds (upper), which equates, for a link with no crossing facilities, to the lower threshold of a two-way flow of about 1,400 vehicles per hour. The guidance suggests that assessor's judgement is more appropriate than following strictly held thresholds, but nonetheless it is informative to have a point of reference.
- 8.7.19 The section of the SLR being delivered as part of the Development will include high quality, wide footway / cycleway facilities. On this basis, pedestrian and cyclist movements are catered for on the links in and around the Site. Traffic flows further afield from the Site will not impact on pedestrian delay or amenity.
- 8.7.20 The Development will provide a safe environment for pedestrians and cyclists. The objectives of the pedestrian and cyclist elements of the transport strategy are to assist the delivery of proposed routeing, facilitating access on foot or by cycle. The Development will be linked via footway and crossing points to also allow journeys to be undertaken by bus from Middleton Stoney Road and subsequently from within Eco Town. As a consequence, these measures should seek to persuade employees making short commuting journeys to use an alternative means of travel from the car.
- 8.7.21 Following a request from OCC, the Developer will provide a protected alignment between the SLR and Howes Lane for OCC to deliver a future pedestrian / cyclist link once Howes Lane is closed to traffic. This is to be located broadly to the east of the Eco Town bus link.
- 8.7.22 The effects of the Development traffic are permanent on pedestrians and cyclists. However, the Development will provide new pedestrian and cycle facilities. The sensitivity of the

receptor is low and magnitude of change is low. Therefore, the significance of the effect is minor beneficial.

Accidents and safety

- 8.7.23 Overall, the accidents recorded within the search area were not attributable to road design or layout, and it is therefore considered that there are no existing road safety issues that would warrant mitigation measures as a result of the current proposal. No significant effects are therefore likely.
- 8.7.24 The sensitivity of the receptor is low and the magnitude of change is negligible. Therefore, the significance of the effect is negligible.

Hazardous loads

- 8.7.25 The development will not be associated with the movement of hazardous loads and therefore no significant effects are likely.

Public Transport

- 8.7.26 The Development will be well served by public transport. As part of the wider Eco Town proposals, high frequency bus services will operate on the SLR running through the Development, and the section of the road running to the west from the SLR. The Axis J9 development contributed towards the local services and providing bus stop infrastructure. In the interim period, the Site will be most conveniently served by bus service 250 which runs along Middleton Stoney Road with access on foot in the interim period via the Axis J9 Phase 1 and 2 Development.

Mitigation, Monitoring and Residual Effects

- 8.7.27 A Framework Employment Travel Plan (FETP) for the Development is included in Appendix 8.2. The transport strategy for the Development is based upon excellent linkages with pedestrian and cycle transport facilities and good public transport facilities, together with enhancement of those facilities to encourage travel by modes other than the car. The FETP provides a formal monitoring and review process. The details of the measures to be included in the Final Travel Plan will be established once occupiers are known.
- 8.7.28 No significant adverse effects have been identified. No further mitigation measures are therefore considered necessary.

8.8 Cumulative Effects

Construction

- 8.8.1 As set out above, around 20 HGV movements a day could be generated during construction from the Development. Taking into account the traffic impact from other cumulative schemes that are permitted to be constructed prior to the completion of the SLR in 2024. It is considered that the percentage increase of the Development construction traffic with the cumulative construction traffic would remain lower than the 30% increase identified in the IEMA Guidelines and on this basis, it is concluded there will be no significant cumulative effects.

- 8.8.2 It is reasonable to assume that CTMPs will also be implemented for the cumulative schemes which will minimise local disruption where possible.

Mitigation, Monitoring and Residual Effects

- 8.8.3 Mitigation measures are set out in the Scheme Design and Management section of this chapter.

Completed Development

- 8.8.4 The assessment in 2025 has been undertaken using OCC modelled flows with the addition of a number of committed development schemes in the vicinity of the Site. These schemes reflect the wider Eco Town proposals, the SLR and other development around Bicester.
- 8.8.5 On this basis, the assessment has already considered the cumulative effects of the Development for future year of 2025 when the Site is expected to be fully occupied. In addition, a future year assessment in 2031 for the operation of the SLR / Howes Lane/ Vendee Drive junction and the Middleton Stoney Road / Empire Road junction prior to the SLR being completed has also been undertaken in the TA. The assessment has identified mitigation in the form of the preparation of a FETP and linkage with the wider footway / cycleway network. The Development would deliver the highway infrastructure within its boundary as defined for SLR. As such, the Development assists in the delivery of the area wide transport network.
- 8.8.6 The maximum increase in traffic on any single link as a result of the Development with the cumulative schemes in place is identified to be 3.7% on the SLR in 2025. The wider delivery of the SLR as part of the Eco Town proposals gives rise to a comprehensive pedestrian and cycling network which prioritises journey on foot and by bike over the car. Whilst associated with increased traffic levels as a consequence of Eco Town development, this will offer a minor beneficial effect at local level.

Mitigation, Monitoring and Residual Effects

- 8.8.7 Mitigation measures are set out in the Scheme Design and Management section of this chapter.

Table 8.10: Summary of Residual Effects

Effect	Receptor (Sensitivity)	Geographic Scale	Temporal Scale	Magnitude of Impact	Mitigation and Monitoring	Residual Effect
<i>Construction</i>						
Severance	Low	Local	Temporary	Negligible	Routing Agreement and Construction Traffic Management Plan	Negligible
Driver Delay	Low	Local	Temporary	Negligible	None required	Negligible
Pedestrian Delay and Amenity	Low	Local	Temporary	Negligible	None required	Negligible
Accidents and Safety	Low	Local	Temporary	Negligible	Construction Traffic Management Plan	Negligible
Public Transport	Low	Local	Temporary	Negligible	None Required	Negligible
<i>Completed Development</i>						
Severance	Low	Local	Permanent	Negligible	Delivery of part of NW Bicester Infrastructure	Negligible
Driver Delay	Low	Local	Permanent	Negligible	Travel Plan	Negligible
Pedestrian Delay and Amenity	Low	Local	Permanent	Negligible	Footway/cycle links and crossing facilities	Minor Beneficial
Accidents and Safety	Low	Local	Permanent	Negligible	Footway/cycle links and crossing facilities	Negligible
Public Transport	Low	Local	Permanent	Negligible	None Required	Negligible
<i>Cumulative Effects</i>						
Severance	Low	Local	Permanent	Negligible	Delivery of part of NW Bicester Infrastructure	Negligible
Driver Delay	Low	Local	Permanent	Negligible	Travel Plan	Negligible

Effect	Receptor (Sensitivity)	Geographic Scale	Temporal Scale	Magnitude of Impact	Mitigation and Monitoring	Residual Effect
					Delivery of part of NWB ` Transport Services	
Pedestrian Delay and Amenity	Low	Local	Permanent	Negligible	Part of extensive footway/ cycleway network	Minor Beneficial
Accidents and Safety	Low	Local	Permanent	Negligible	Part of extensive footway/cycleway network and highway infrastructure as part of NWB	Negligible

References

- ¹ Ministry for Housing, Communities and Local Government (2021). National Planning Policy Framework.
- ² Oxfordshire County Council, 2015. Oxfordshire Local Transport Plan 4 (2015-2031)
- ³ Cherwell District Council, Adopted September 2020. Cherwell Local Plan 2011 - 2031 Part 1 Partial Review. Available at: <https://www.cherwell.gov.uk/info/83/local-plans/215/adopted-cherwell-local-plan-2011-2031-part-1-partial-review---oxfords-unmet-housing-need> Last accessed July 2021.
- ⁴ Cherwell District Council, Re-adopted December 2016. Cherwell Local Plan 2011 - 2031 Part 1. Available at: <https://www.cherwell.gov.uk/info/83/local-plans/376/adopted-cherwell-local-plan-2011-2031-part-1> Last accessed July 2021.
- ⁵ Ministry for Housing, Communities and Local Government (last updated 24 June 2021). Planning practice guidance.
- ⁶ The Institute of Environmental Management and Assessment, 1993 The Guidelines for the Environmental Assessment of Road Traffic.
- ⁷ Department for Transport (2007). Guidance on Transport Assessment.
- ⁸ Health and Safety Executive, (2009). The Carriage of Dangerous Goods in the UK.
- ⁹ LTN 1/20 Cycle Infrastructure Design.
- ¹⁰ DMRB (DfT, 2019) including CD109 Highway Link Design and CD123 Geometric design of at-grade priority and signal controlled junctions.