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Environmental Statement Volume III

**Appendix 8.1:
Transport Assessment**

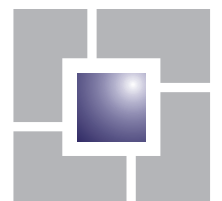
Axis J9, Phase 3

SEPTEMBER 2021

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**Axis J9, Phase 3 – Employment
Bicester**

Transport Assessment



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transport planning consultants



Axis J9, Phase 3 – Employment Bicester

Transport Assessment

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1.0 INTRODUCTION

1.1 David Tucker Associates (DTA) has prepared this Transport Assessment (TA) to accompany the planning application made by Albion Land in relation to proposed commercial development at Howes Lane, Bicester. The site location is shown at **Figure 1**.

1.2 The proposals for the site involve the erection of 16,901sqm GIA of flexible employment covering E(g)(iii), B2 and B8 use classes on land to the west of Howes Lane with associated access arrangements. Vehicular access to the site will be from the forthcoming North West Bicester (NWB) Strategic Link Road. The site masterplan is shown at **Appendix A**.

1.3 The land is allocated in the Development Plan for development as part of the wider Bicester Eco-Town. The site will be linked to the wider network via proposed walking and cycling routes. A Travel Plan has been prepared to support the application with the aim of encouraging employees to travel to and from the site via sustainable modes.

1.4 This site forms part of the land which benefits from existing planning consents, these proposals were the subject of comprehensive Transport Assessments and Travel Plans. This included a consented mixed use application, now referred to as Axis 9, Phases 1 and 2 comprised employment land. Phase 3, the current site, comprised residential development for up to 150 dwellings. The application site also benefits from a separate residential consent. Oxfordshire County Council (OCC) were involved in agreeing the previous application material and methodology for the Transport Assessments prepared by DTA.

1.5 Traffic data has been provided by OCC for the future year of 2031 which has been used to inform a review of the traffic impact with committed development once the wider North West Bicester (NWB) Eco Town site comes forward within which the proposed site sits. As a worst case appraisal, this data has also been used to test the pre-SLR impact.



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- 1.6 Pre-application discussions with the Highway Authority have taken place regarding the site access design to ensure consistency with the emerging SLR design which is being co-ordinated and delivered by OCC.
- 1.7 A review of personal injury accident data has demonstrated that there are no current road safety issues and there is no evidence to suggest that the development proposals will be detrimental to highway safety.
- 1.8 The access proposals include delivery of a significant section of SLR highway infrastructure consented as part of the wider NWB aspirations. The access and transport proposals are entirely consistent with the approved transport and access strategy, as well as the Development Plan.
- 1.9 Although now withdrawn, this TA has been prepared in accordance with DfT 'Guidance on Transport Assessment' (GTA) dated March 2007, as there is no new formal guidance which replaces it.
- 1.10 It has already been accepted that the scale of the consented residential development would not result in any material impact on the adjacent highway network post the opening of the SLR and the employment proposals are forecast to generate less traffic than already consented site development. Due to other development across NWB not having come forward yet, there is sufficient highway capacity to accommodate the proposals prior to the SLR opening. The site's sustainable credentials are equally well established. There are no highway or transport reasons to refuse planning permission.



2.0 SURROUNDING DEVELOPMENT CONTEXT

2.1 Introduction

2.1.1 The Development Plan sets an ambitious growth programme for Bicester. In response to the demand for new housing and associated jobs and community facilities for local people, there are a number of development proposals and committed schemes for the expansion of Bicester town, some of which have begun construction, particularly at the western and southern edges. A plan showing local development context is included as **Figure 4**.

2.2 NWB Eco Development

2.2.1 The NWB Development occupies an area of 416 hectares. The development is set to be one of the UK's first designated eco towns and aims to achieve a zero carbon community of 6000 new homes over the next 20 years. Provision is to be made for new employment and other services.

2.2.2 The site forms part of the overall NWB. The traffic impact of the overall NWB site was assessed by Hyder Consulting within an Access and Travel Strategy report prepared in June 2014.

2.2.3 To provide appropriate access to the NWB development, a new/ realigned A4095 NW Strategic Link Road for Bicester will be delivered which will address the traffic movement and highways constraints issues which have long been considered an issue for the town. The SLR which benefits from a planning consent, will provide a new, straight underpass of the railway line, removing the skewed bridge and junctions on each side. The underpass has already been constructed. When completed, the SLR connect to the B4030/Vendee Drive junction, providing a continuous good standard link from the A41 to the B4100 Banbury Road.

2.2.4 The Axis J9 Phase 3 proposals include the construction of part of the future link road which will be brought forward as part of this application. The delivery of the remainder of the link road will not be prejudiced as a result of the works associated



with access to the Axis J9 Phase 3 employment development application.

2.2.5 The applicant is committed to collaborate with the highway authority to deliver the SLR. Pre-application discussions have been underway for some time and agreement reached on the site access and link road design on the section onto which site access is taken.

2.2.6 The construction of the Link Road rail crossing (tunnel) completed at Easter 2021, removed a significant obstacle in the comprehensive delivery of NWB. As a consequence, the SLR delivery is now programmed for completion towards the end of 2024.

2.3 **Axis J9**

2.3.1 The Axis J9 consent was secured at Appeal for up to 53,000 sqm of B1c/B2/B8 floorspace and residential development for up to 150 dwellings. Construction and initial occupations on the employment land to the south known as Axis J9 Phase 1 and 2 has been underway for some time, soon to be completed and totalling around 45,000sqm. Vehicular access is taken from a right turn lane priority junction constructed onto Middleton Stoney Road to the south. Post SLR, the small units on Phase 1 will route onto the SLR. The internal site road is Empire Road.

3.0 EXISTING CONDITIONS

3.1 Site Location

3.1.1 The site is located to the western edge of Bicester town centre. The site is bounded to the east by A4095 Howes Lane and to the south by the Axis J9 Phase 1 and 2 employment land. The residential area of Highfield is situated to the east of Howes Lane. The location of the site is shown in **Figure 1**.

3.1.2 Access to the site is currently provided via Axis J9 Phase 1 and 2.

3.2 Adjacent Highway Network

3.2.1 The A4095 Howes Lane is a 6m wide single carriageway road, and forms the eastern site boundary. It is subject to a speed limit of 50 mph. There are no footways or street lighting provided on Howes Lane along the site frontage.

3.2.2 A traffic signal controlled junction with Shakespeare Drive is situated on Howes Lane approximately 400m to the north of the development 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.

3.2.3 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 (14ft 6in).

3.2.4 To the south, Howes Lane links with a four arm roundabout junction with the B4030 Middleton Stoney Road and Vendee Drive at the south eastern corner of the site boundary. The southern arm of this junction provides access to the A41 via the single carriageway Vendee Drive. The road benefits from a shared cycleway/footway on the eastern side and is subject to a speed limit of 50 mph.



3.2.5 The B4030 Middleton Stoney Road continues west towards the village of Middleton Stoney. Around 180m to the west of the Howes Lane roundabout, a right turn lane priority junction has recently been constructed to provide access to Axis J9 Phases 1 and 2.

3.2.6 The B4030 continues east from the roundabout linking with Kings End/Oxford Road at a mini roundabout junction to the south east.

3.3 Public Transport

Bus Network

3.3.1 There are two bus services which run within close proximity to the proposed site, the number 21 and 250. The frequency and destinations of these services are summarised in **Table 1** and **Figure 3**.

Table 1 – Bus Services within the vicinity of the site

Service	Operator	Route	Frequency		
			Monday-Friday	Saturday	Sunday
21	Grayline Coaches	Bicester – Highfield - Bicester (Circular)	Every 30 minutes	Every 30 minutes	No service
250	Hallmark	Oxford – Kirtlington - Bicester	Every 60 minutes	Every 60 minutes	No service

3.3.2 These routes terminate at or adjacent to Bicester Market Square, where connection can be made with other town bus services including destinations such as Brackley, Buckingham, Banbury and Aylesbury. The Square is approximately 1.1km from Bicester North railway station, and 550m from Bicester Village railway station.

3.3.3 Following completion of the SLR and forthcoming development within NWB, the site will sit on the main bus route, including a bus only link immediately to the south of the site.

Rail Network

3.3.4 Bicester benefits from two railway stations in the town; Bicester North and Bicester

Village. These stations are situated approximately 3.1km and 3.7km from the proposed site respectively.

3.3.5 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.

3.4 **Walking and Cycling**

3.4.1 Footways are provided through to Middleton Stoney Road via Axis J9 Phase 1 and 2. From there footway/cycleway facilities extend along Middleton Stoney Road to the east. At the roundabout junction with the B4030 to the south, tactile paving is provided on all arms. A shared cycleway/footway is provided south of the roundabout on the eastern side of Vendee Drive.

3.4.2 A footpath connects the Highfields residential area to the east onto Howes Lane. The footpath is approximately 1.8m in width and is surfaced. The footway links with the southern cul-de-sac on Beckdale Close between existing residential properties. Linkage through to the Highfields area will be provided by OCC via a protected corridor alignment within the site provided by the applicant linking through to Howes Lane which will itself become a pedestrian/cycle route following completion of the SLR.

3.4.3 A further grassed footpath to the north of Beckdale Close also links with Howes Lane.

3.4.4 The existing footway and cycleways are shown on **Figure 2**. The site benefits from good pedestrian and cycle links, which will be significantly enhanced with the implementation of the SLR.

3.5 **Existing Traffic Flows**

3.5.1 Base traffic data for was made available from OCC's traffic model at the time of the application for the consented residential scheme.



3.6 **Highway Safety**

- 3.6.1 Personal Injury Accident (PIA) data for the last 5 years (01/01/2016 – 31/05/2021) on the adjacent highway network has been provided by OCC. The full details are included in **Appendix B**.
- 3.6.2 A total of 9 accidents were recorded on the local network during the last 5 years. 5 of the accidents were classed as “slight” and 4 were classed as “serious”. No “fatal” accidents were recorded.
- 3.6.3 There were 2 “serious” and 2 “slight” accidents recorded on Howes Lane. There was one “slight” accident at the Howes Lane/Vendee Drive roundabouts.
- 3.6.4 One “serious” accident and one “slight” accident involved motorcyclists. One “serious” and 2 “slight” accidents involved a pedal cyclist. No accidents involved pedestrians. The number of accidents involving vulnerable road users is not significant and there are no clusters in their occurrences.
- 3.6.5 There are no existing road safety issues within the vicinity of the site. It is concluded that there are no patterns which would give rise to concern within the vicinity of the site and there is no evidence to suggest that the development proposals will exacerbate road safety within the surrounding area.



4.0 DEVELOPMENT, ACCESS AND PARKING PROPOSALS

- 4.1 The proposals involve 16,901sqm GIA of flexible employment floorspace (E(g)(iii) and/or B2 and/or B8) with ancillary office, associated access and infrastructure. The masterplan for the site is included in **Appendix A**.
- 4.2 The road infrastructure required to deliver the NW Bicester Masterplan involves the re-alignment of Howes Lane at the eastern site boundary. When the wider site is developed the existing Howes Lane carriageway will be closed. A traffic signal crossroads junction would be provided on the alignment of the SLR. A bus only link is planned to the west. Again, this would be delivered by others. The proposals to deliver the Albion Land site are consistent with this expectation and do not prejudice its delivery.
- 4.3 The development floorspace is proposed on two development parcels, located either side of the future SLR. An area-wide plan providing context is shown at **Figure 4**.
- 4.4 The SLR is programmed for completion in 2024 and will run through the application site. To the south of the site boundary, the SLR will form a junction, which is planned to provide access for a bus only link, along with pedestrian and cycle access.
- 4.5 The site will therefore be accessed via a discrete section of the SLR, onto which an eastern parcel and a western parcel of employment development floorspace will feed. The proposed design is shown at **Appendix C**.
- 4.6 The access into each parcel will comprise a right turn lane priority controlled junction. The right turn lane lengths have been oversized to ensure sufficient stacking space for large vehicles. The designs have been agreed with OCC and each provide pedestrian and cyclist priority for journeys being undertaken along the SLR. The design of the SLR accords with OCC proposals, albeit that it is understood that detailed revisions may arise during the detailed design stage of the SLR being undertaken by OCC.



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- 4.7 The access proposals have further been subject to an independent Stage 1 Road Safety Audit which made no recommendations for amendments. The Audit Report is provided at **Appendix D**.
- 4.8 Only that part of the spine road required to access the development parcels from Empire Road will be constructed as part of the proposals, with the remainder brought forward by the local highway authority. The deliverability of the future link road will not be prejudiced by the early delivery of the section of the spine road required to access the development. The applicant is committed to collaborate in the delivery of the SLR.
- 4.9 There is anticipated to be a period before the completion of the SLR by OCC when the application site will be operational. Site access will be delivered by way of a temporary arrangement, whereby the Phase 1 and 2 access road (Empire Road) onto Middleton Stoney Road will provide access for all modes of travel. This arrangement is shown on **Appendix C**.
- 4.10 Both the permanent access arrangements and the interim access arrangements have been subjected to vehicle swept path appraisal as shown in **Appendix E**.
- 4.11 The internal servicing arrangements have similarly been subject to HGV vehicle tracking as shown on **Appendix F**.
- 4.12 Parking provision is in accordance with Cherwell District Council Parking Standards. The masterplan shows 206 parking spaces at a ratio of 1 space per 82sqm GIA reflecting the balance required to meet the requirements of the flexible land uses being sought. The parking spaces provided are spread broadly evenly across the 11 Units shown. Electric Vehicle Charging will comprise 10% of the parking spaces at the outset, with the provision in place to increase this to 25% in due course.
- 4.13 A Framework Travel Plan has been prepared under separate cover to support the proposed site and will include a number of travel initiatives to encourage employees to travel by sustainable modes.

5.0 TRANSPORT PLANNING POLICY CONTEXT

5.1 National Guidance - National Planning Policy Framework

5.1.1 In July 2021, the Government published a revised National Planning Policy Framework (NPPF). This report should therefore be read in the context of the new NPPF.

5.1.2 Paragraph 111 of the NPPF is clear that: "Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe".

5.1.3 Within this context, the NPPF identifies in Paragraph 112 that applications for development should:

"a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

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

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

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

5.1.4 Paragraph 113 of the NPPF goes on to state that: *"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the*

application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed”.

5.1.5 In reinforcing the principle of supporting sustainable development, paragraph 10 stipulates that at the heart of the Framework is “...a presumption in favour of sustainable development”.

5.2 **Transport Assessments and Statement – Planning Practice Guidance**

5.2.1 Following directly on from paragraph 108 of the NPPF, the PPG 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).”*



5.3 **Gear Change: A Bold Vision for Cycling and Walking**

5.3.1 Gear Change is a Department for Transport (DfT) document which aims to change people's travel behaviour to increase to popularity of cycling and walking and transform permanently how people move around, particularly in towns and cities. This will help tackle some of issues faced as a society including improving air quality, combatting climate change, improving health and wellbeing, addressing inequalities, and tackling congestion on our roads.

5.3.2 On cycle routes it states that *"Physically segregated bike tracks on main roads, including at junctions, are the most important thing we can do to promote cycle use." The separation can be using "a kerb, or lighter-touch materials which take less space, such as wands, stepped kerbs or planters. But they must be physically separated – not just on links, the stretches between junctions, but at junctions themselves".*

5.3.3 The DfT want *"new developments to be easily and safely accessible and navigable by foot and bike, and to make existing cycling and walking provision better."*

5.4 **Local Policy**

Oxfordshire Local Transport Plan 4 2015 - 2031

5.4.1 The Local Transport Plan was adopted by OCC in September 2015, following public consultation on the draft plan earlier in the year. The Plan was updated in 2016 in order to strengthen the emphasis on improving air quality and making better provision for walking and cycling.

5.4.2 The LTP includes an Area Strategy for Bicester with a plan to reduce the pressure on transport networks as the population grows, and minimise emissions and other environmental damage from transport we will encourage residents and visitors to travel sustainably as well as supporting the use of more sustainable public and private vehicles.



5.4.3 The priority for Bicester is to provide the transport infrastructure which supports the aspirations set out in the Local Plan and the initiatives for their implementation in the forthcoming Bicester Masterplan.

5.4.4 The North West Bicester development site will provide new approaches to transport, including a heavy emphasis on sustainable modes and travel choice advice, as well as early provision of bus services and cycle routes. This may unlock opportunities for wider travel choice options.

Cherwell Local Plan 2011 - 2031

5.4.5 The Cherwell Local Plan was adopted in July 2015 and sets out the long term spatial vision for the District and contains policies to help deliver that vision.

5.4.6 The Cherwell Local Plan seeks to use this potential to deliver jobs-led growth, supported by housing, with 138.5 ha of employment land, and approximately 10,000 further new homes are planned for Bicester. The Local Plan also sets out an ambition for Bicester to become a greener more pleasant place to live, work and visit.

5.4.7 An eco-town development of 6,000 homes will be developed on land identified at North West Bicester in accordance with the standards set out in the former Eco-Towns PPS. It is estimated that a total of 3,293 are to be delivered within the plan period. The wider NW Bicester Masterplan sets out parameter plan measures to frame the delivery of pedestrian, cycle, bus and vehicular movements. The strategy to deliver these benefits from the role that the application site assists within the infrastructure design proposals set out in this TA.



6.0 TRANSPORT STRATEGY

6.1 Introduction

6.1.1 The transport strategy for the site has been carefully developed to be capable of delivering a standalone development site, but also to be entirely consistent with the wider NWB development aspirations within which the application site sits.

6.1.2 This manifests itself in two strategies for all modes of transport. The first is termed 'Interim', in that it would become superseded by the comprehensive delivery of NWB and the associated SLR, but nonetheless is fully compliant.

6.2 'Interim'

6.2.1 The access from the site would be onto the section of the SLR being delivered by the applicant and thereafter running through the Axis J9 Phases 1 and 2 layout and onto Middleton Stoney Road via its junction with Empire Road. The concept of this phased access approach has been agreed with OCC as part of the pre-application discussions and is critical to enabling the development to be delivered now. The access design has been subject to a Stage 1 Road Safety Audit (RSA) and the report is included in **Appendix D**.

6.2.2 The 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. This is to ensure consistency with the development and the rest of SLR. The accesses onto the section of the SLR will be right turn lanes, albeit without through traffic to give way to. The extent of the interim site access proposals are shown in **Appendix C**.

6.2.3 In terms of bus access, the most convenient bus stops are located on Middleton Stoney Road.

6.2.4 In regards the "Interim" situation, the occupation of consented residential development on the Phase 3 site was contingent on the SLR being open to traffic.

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- 6.2.5 The restriction was imposed for highway capacity reasons without the realignment of Howes Lane/Lords Lane.
- 6.2.6 A series of DTA Technical Notes were submitted to OCC during the consultation period of the mixed use scheme consented at Appeal, which informed the traffic threshold established for Axis J9 (including the residential component). This detail had stemmed from the NW Bicester Masterplan and its inclusion within a 2014 Hyder Memo agreed with OCC, which established the development quantum which could come forward prior to the Howes Lane re-alignment.
- 6.2.7 The 2014 Memo appraised three scenarios of development across NW Bicester in 2024 and identified an acceptable level of development coming forward by 2024 “pre-tunnel”, comprising traffic from 900 NW Bicester dwellings and employment. Of the residential threshold of 900 dwellings, to date only the Exemplar Scheme (393 dwellings) off Bucknell Road have come forward. The anticipated traffic generation from the remaining 507 dwellings has not therefore been realised.
- 6.2.8 The 900 dwelling development threshold underpinned by the 2014 Memo was derived from a junction capacity appraisal of the Bucknell Road/Howes Lane priority junction in 2024.
- 6.2.9 During the mixed use application consultation period, DTA liaised with Hyder regarding the origins of the network traffic flow data which was used within the Memo. Part of this information was available within the NW Bicester Masterplan application Transport Assessment Appendices. The supporting material, agreed between Hyder and OCC giving junction peak hour turning matrices was provided to DTA by Hyder within a spreadsheet in 2015.
- 6.2.10 The relevant spreadsheet output is provided at **Appendix L**. The matrix comparison between the differing NW Bicester development quantum options quoted in the 2014 Memo (i.e. 900, 1200 and 2256 dwellings) allows quantification of a per NWB dwelling trip rate routing through the Howes Lane/Bucknell Road junction. For example, the

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- 300 dwelling difference between 900 and 1200 dwellings sees an additional 112 PM peak hour trips added. This works out at 0.373 trips per dwelling and the proportional level of employment. The trip rates are linear irrespective of the quantum.
- 6.2.11 The NW Bicester development traffic associated with 900 dwellings (and commensurate employment) within the 2014 Memo at the junction is therefore 336 trips (900 x 0.373) in the PM peak hour.
- 6.2.12 The traffic from the employment component was derived within the mixed use application Axis J9 consent and agreed with OCC to be 45 employment trips in the PM peak through the Bucknell Road junction.
- 6.2.13 By deducting these 45 employment trips from the total 336 development trips at the junction, leaving 291, it is then possible to calculate a per dwelling trip rate (through the junction) from the 900 dwelling threshold. This gives 0.323 trips per dwelling.
- 6.2.14 Applying this rate to the difference between 900 dwellings and the built and occupied Exemplar Scheme (393) of 507 dwellings, gives 164 vehicular PM peak movements through the Howes Lane/Bucknell Road junction as the permitted but unrealised traffic flow threshold.
- 6.2.15 Based on the Phase 3 employment forecast trip generation and distribution set out in **Sections 7.2** and **7.3**, the equivalent vehicular movements routing to the north are only 26 vehicles in the PM peak period.
- 6.2.16 Given the timescales of SLR delivery (during 2024), and the extent of unrealised PM peak traffic within the permitted threshold (164 vehicles), it is therefore reasoned that the Phase 3 employment land can come forward pre-SLR. The forecast Phase 3 employment traffic (26 vehicles) represents only 15% of the unrealised traffic level. This is the traffic equivalent of 76 dwellings not being occupied. In other words, were the full Phase 3 employment to come forward before the SLR is open, then a further 431 dwellings across NWB (507 - 76) would still be able to be built and occupied.



6.2.17 It is recognised that prior to the SLR being opened, that HGV site traffic should be restricted from routing via the Bucknell Road bridge. This restriction would be the subject of planning condition and/or pre-SLR routing agreement.

6.3 **Post SLR Completion**

6.3.1 As identified above, the infrastructure strategy is consistent with future NWB aspirations.

6.3.2 Extensions to the internal NWB infrastructure, providing new connection to the A4095/B430 roundabout and into the wider NWB area will be the responsibility of the highway authority and the wider NWB site.

6.3.3 The illustrative masterplan for the NWB area is shown in **Appendix G** which provides context for how each element of the wider NWB highway infrastructure sits. The future site access arrangement following construction of the link road is shown in apparent from the site Masterplan at **Appendix A** and **Figure 4**.

6.3.4 Bus services will be significantly upgraded as part of the NWB proposals which will benefit the accessibility of the site.

6.3.5 The development is supported by a Framework Travel Plan which includes a number of measures and initiatives that will be implemented by a Travel Plan co-ordinator to encourage employees on the site to minimise travel by private car. Measures to encourage car sharing will be included in the Plan.

6.4 **Public Transport**

6.4.1 In the interim situation, the site is within reasonable distance of the hourly service (250) on Middleton Stoney Road, within 800m walking distance.

6.4.2 In the permanent situation, the site will be adjacent to a high frequency bus service as part of the wider NWB proposals. The bus services are expected to run along the southern and eastern boundaries of the site.

7.0 TRAFFIC GENERATION AND DISTRIBUTION

7.1 Traffic Generation (Consented Residential Scheme)

7.1.1 The site benefits from an extant consent for up to 150 dwellings. Residential trip rates derived from the TRICS database and trip numbers were previously agreed with OCC as part of the consented mixed use scheme and a separate consent for residential development on Phase 3. The trip rates and trip generations are shown in **Tables 2 and 3** respectively.

Table 2 – Trip Rates – Per dwelling

	Arrivals	Departures	Total
AM Peak (0800-0900)	0.158	0.421	0.579
PM Peak (1700-1800)	0.396	0.231	0.627
12 Hour	2.638	2.713	5.351

Table 3 – Trip Generation – 150 dwellings

	Arrivals	Departures	Total
AM Peak (0800-0900)	24	63	87
PM Peak (1700-1800)	59	35	94
12 Hour	396	407	803

7.1.2 The forecast total traffic generation for the Consented Residential Scheme is 87 movements in the AM peak and 94 movements in the PM peak. Over a 12 hour period it was estimated that the site would generate 803 movements.

7.2 Traffic Generation (Proposed Employment Scheme)

7.2.1 Trip rates derived from the TRICS database for the proposed land uses were agreed with OCC as part of the Consented Appeal Scheme for Phase 1 and 2 Axis J9 development adjacent to the site and currently under construction. These are set out below.



7.2.2 The trip rates and trip generations for industrial and warehousing floor space are shown in **Tables 4, 5, 6 and 7**. The tables show the range of outcome whereby the full site could be occupied by E(g)(iii) or B2 industrial land uses; or alternatively by B8 warehousing.

Table 4 – Trip Rates – Industrial (per 100 sqm)

	In			Out			Total		
	Lights	OGV1 &2	Total	Lights	OGV1 &2	Total	Lights	OGV1 &2	Total
AM Peak (0800-0900)	0.366	0.024	0.39	0.063	0.023	0.086	0.429	0.047	0.476
PM Peak (1700-1800)	0.036	0.005	0.041	0.302	0.007	0.309	0.338	0.012	0.35
12 Hour	1.58	0.217	1.797	1.716	0.173	1.889	3.296	0.39	3.686

Table 5 – Trip Generation assuming site fully occupied by Industrial land use class (16,901 sqm GIA)

	In			Out			Total		
	Lights	OGV1 &2	Total	Lights	OGV1 &2	Total	Lights	OGV1 &2	Total
AM Peak (0800-0900)	62	4	66	11	4	15	738	8	81
PM Peak (1700-1800)	6	1	7	51	1	52	57	2	59
12 Hour	267	37	304	290	29	319	557	66	623

Table 6 – Trip Rates – Warehousing (per 100 sqm)

	In			Out			Total		
	Lights	OGV1 &2	Total	Lights	OGV1 &2	Total	Lights	OGV1 &2	Total
AM Peak (0800-0900)	0.058	0.013	0.071	0.032	0.015	0.047	0.09	0.028	0.118
PM Peak (1700-1800)	0.021	0.01	0.031	0.069	0.01	0.079	0.09	0.02	0.11
Daily	0.619	0.283	0.902	0.661	0.32	0.981	1.28	0.603	1.883



Table 7 – Trip Generation assuming site fully occupied by Warehousing land use class (16,901 sqm GIA)

	In			Out			Total		
	Lights	OGV1 &2	Total	Lights	OGV1 &2	Total	Lights	OGV1 &2	Total
AM Peak (0800-0900)	10	2	12	5	3	8	15	5	20
PM Peak (1700-1800)	4	2	5	13	2	13	15	3	19
Daily	105	48	152	112	54	166	216	102	318

7.2.3 Based on TRICS data, the worst-case total traffic generation for the development would be 80 two-way vehicle movements in the AM peak and 59 movements in the PM peak. Over a typical day the site could generate 623 movements.

7.2.4 The net implication of the proposal in traffic generation terms is of a reduction in site traffic between the Consented Residential and proposed employment development. The “worst case” comparison reflects the difference between residential and 100% industrial occupation. **Table 8** sets out the comparison.

Table 8 – Net Trip Generation

	Residential			Worst-Case Employment			Net Difference		
	In	Out	Total	In	Out	Total	In	Out	Total
AM Peak	24	63	87	66	15	81	+42	-48	-6
PM Peak	59	35	94	7	52	59	-52	+17	-35
12 Hour	396	407	803	304	319	623	-92	-88	-180

7.2.5 In net two-way traffic terms, there will be reduction in traffic generated by site. The employment land uses would generate more HGV movements, however the worst-case HGV outcome arises with even lower total traffic levels (based on the Warehousing uses). The highest forecast HGV hourly movements would be only 5 two-way trips across an hour, and this is in the context of significantly less total traffic than consented.



7.3 Traffic Distribution

- 7.3.1 The Census 2011 journey to work data provides an estimation of the main destinations for employees associated with the proposed development. The light and heavy traffic associated with the site will follow a different distribution on the local road network.
- 7.3.2 The 2011 Census data uses Middle Layer Super Output Areas and the Cherwell 013 has been used for the origin-destination analysis and again was agreed with OCC as part of the Consented Appeal Scheme. An extract of the Cherwell 013 area and the journey to work assessments are included in **Appendix H**. In brief this forecast shows 43% journey to work trips from the north, and 57% to the south on the local road network.
- 7.3.3 The end user of the development is yet to be determined and therefore assuming a distribution for heavy traffic is more difficult, however a number of assumptions have been made with regards to the likely route.
- 7.3.4 Given the proximity of the site to road networks, the primary routes of the A41 and M40 at Junction 9, it is likely that the majority, if not all heavy traffic will enter and leave the site via the south using Vendee Drive to reach the A41.
- 7.3.5 The resulting trip generation and distribution in the AM and PM peak periods for the employment traffic movements are shown in **Figures 5** and **6** for industrial and warehousing outcomes respectively. These trip patterns reflect the gross totals and not the net totals if the consented residential development were taken into account.

8.0 TRAFFIC IMPACT ANALYSIS

8.1 Traffic Model Data

8.1.1 The base traffic flows from the OCC traffic model for 2031 have been provided. The use of this data for the employment application has been agreed with highway officers at OCC.

8.2 Operational Assessment – Interim

8.2.1 The junctions listed in this section have been modelled using the priority and roundabout junction modules of TRL's Junctions software extract from the model provided by OCC is included at **Appendix I**.

Middleton Stoney Road/Empire Road/Site Access (Interim Proposal)

8.2.2 The Interim scenario whereby site traffic would route via Axis J9 Phase 1 and 2, and the Middleton Stoney Road/Empire Road junction, is only required until the SLR is fully opened to traffic. The SLR is due for completion during 2024.

8.2.3 Given the post SLR network flows (with additional NWB development) will be higher, a worst-case appraisal of the Interim situation (Middleton Stoney Road/Empire Road junction) has been undertaken using 2031 (as distinct from 2024 flows).

8.2.4 The results of the assessment are summarised in **Table 9** and the full analysis is included in **Appendix J**.



Table 9 – Middleton Stoney Road/Empire Road/Assessment Results With Development

	AM Peak (0800-0900)		PM Peak (1700-1800)	
	Max RFC	Queue	Max RFC	Queue
Empire Road Left Turn	0.12	0	0.31	0
Empire Road Right Turn	0.07	0	0.06	0
Right Turn into Site from Middleton Stoney Road	0.31	0	0.07	0

8.2.5 The results indicate maximum Ratio of Flow to Capacity (RFC) values of significantly below the operational threshold value of 0.85. There will be minimal queuing and delay at the junction during peak periods with development traffic in the Interim scenario.

8.3 Operational Assessment - Permanent

8.3.1 In the future year of 2031 Howes Lane will be realigned as part of the wider NW Bicester proposals. Access to the site will be taken from the realigned link.

8.3.2 The SLR/B4030/Vendee Drive roundabout has been assessed. The results of the assessment are shown in **Table 10** and the full analysis is included in **Appendix J**.



Table 10 – SLR/B4030/Vendee Drive Roundabout Assessment Results – 2031

2031 Base	AM Peak (0800-0900)		PM Peak (1700-1800)	
	Max RFC	Queue	Max RFC	Queue
SLR	0.93	10	0.7	2
Middleton Stoney Road (East)	0.84	5	0.55	1
Vendee Drive	0.45	1	0.66	2
B4030 (West)	0.74	3	0.97	18
20231 Base+Dev	AM Peak (0800-0900)		PM Peak (1700-1800)	
	Max RFC	Queue	Max RFC	Queue
SLR	0.94	12	0.74	3
Middleton Stoney Road (East)	0.87	6	0.56	1
Vendee Drive	0.51	1	0.73	3
B4030 (West)	0.75	3	0.97	19

8.3.3 The results show that the impact of development traffic is negligible without detriment to queueing in 2031. This appraisal also fails to recognise that consented Residential traffic from the site would mean that forecast levels would decrease.

8.3.4 The accesses into each of the employment parcels have also been assessed in the future year of 2031. The results are included in **Appendix K** and summarised in **Table 11** and **12**.

Table 11 – Western Parcel Access Road/SLR Assessment Results

2031	AM Peak (0800-0900)		PM Peak (1700-1800)	
	Max RFC	Queue	Max RFC	Queue
Western Parcel Access	0.03	0	0.12	0
SLR Right Turn-In	0.04	0	0.01	0

Table 12 – Eastern Parcel Access Road/SLR Assessment Results

2031	AM Peak (0800-0900)		PM Peak (1700-1800)	
	Max RFC	Queue	Max RFC	Queue
Eastern Parcel Access	0.00	0	0.02	0
SLR Right Turn-In	0.01	0	0.00	0

8.3.5 The results show that the access will operate with ample spare capacity with the SLR in place in 2031.

8.4 **Summary**

8.4.1 The proposals have been demonstrated to be able to come forward with no severe traffic or transport impacts. Indeed the development proposals represent a reduction in traffic levels compared with the consented scheme. This has been demonstrated both in terms of the interim situation prior to the completion of the SLR; and in the permanent situation, whereby the remainder of the link road is constructed.



9.0 CONCLUSIONS

- 9.1 This Transport Assessment has investigated the highway and transport implications of the proposals for the erection of flexible employment floorspace on land to the west of Howes Lane with associated access arrangements.
- 9.2 The site sits within the NW Bicester development area and already benefits from consent for residential development (150 dwellings). The site is demonstrated to be sustainably located in regards of accessibility to local facilities and public transport links. The sustainable credentials will be further enhanced once the adjacent NW Bicester proposals come forward.
- 9.3 The employment parcels will be accessed from right turn lane junction arrangements from the SLR whereby the applicant will deliver a section of the SLR onto which the employment feeds. Associated footways and cycleways will be provided.
- 9.4 The highway infrastructure providing access to the site forms a significant part of the consented link road forming the main route through the NW Bicester proposals.
- 9.5 The proposals will not therefore frustrate the delivery of comprehensive Howes Lane re-alignment mechanism in place to facilitate this as part of the Consented Appeal site within which this application site is located.
- 9.6 Traffic data for the local network has been utilised from an OCC traffic model. The trip rates and traffic distribution have previously been agreed with OCC as part of the consented Appeal Scheme.
- 9.7 The traffic assessment demonstrates no potential capacity issues prior to the SLR being completed.
- 9.8 An assessment of the local network in 2031 shows that the development can be suitably accessed and can be accommodated on the future road network to be



delivered by the highway authority.

- 9.9 In conclusion, the development of up to 16,901sqm flexible employment floorspace will not result in significant impact on the local road network. The development will encourage travel by sustainable modes.