



Chapter 8

TRANSPORT AND ACCESS

8 Transport and Access

Preface

This ES chapter has been revised to reflect the following:

- Details of post-submission consultation with the highways authorities and relevant statutory bodies and commentary as to how these have been addressed through this assessment;
- Details of an updated baseline scenario, including committed off-site highways mitigation;
- Updated traffic modelling on the local highway network, including elements of the Strategic Road Network in the model extent for the Development, with the adjacent Tritax Scheme, and other cumulative schemes; and
- Details of updated off-site highways mitigation for the Development and the adjacent Tritax Scheme, to provide enhancements and mitigate the potential for significant adverse effects. Details are also provided of potential highway mitigation measures identified as options for additional enhancement but not required to mitigate adverse effects of the Development, alone or in-combination with other cumulative schemes.

While there is no change in the conclusions stated for the construction phase, there is a beneficial change in the significance stated for the majority of residual effects during the operational Development relative to those stated in the 2021 ES. This is primarily due to proposed delivery of off-site highways improvement measures.

8.1 Introduction

8.1.1 This chapter of the ES was prepared by David Tucker Associates and presents an assessment of the likely significant effects of the Development on transport, access and traffic. 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. This chapter replaces in full the Transport chapter prepared for the 2021 ES.

8.1.2 The chapter is supported by the following appendices:

- Appendix 8.1: Transport Assessment;
- Appendix 8.1a: Transport Assessment Addendum; and
- Appendix 8.2: Framework Travel Plans.

Competence

8.1.3 The principal author of this chapter was Simon Parfitt MSc, BA, CILT, director at David Tucker Associates with over thirty years' experience in the appraisal of transport and traffic implications, including EIA. The secondary author is Richard McCulloch BEng, GMICE, Associate Director at DTA with over twenty years' similar experience.

8.2 Legislation, Planning Policy and Guidance

Legislation Context

8.2.1 There is no legislation of relevance to this assessment.

Planning Policy Context

National

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).

8.2.3 The National Planning Policy Framework (NPPF)¹ 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 and Connectivity Plan (2022-2050) adopted July 2022²; and
- Cherwell Local Plan (2011-2031) adopted July 2015, updated December 2016³. Relevant policies include:
 - SLE Improved Transport and Connections; and
 - ESD1 Mitigating and Adapting to Climate Change.
- Mid Cherwell Neighbourhood Plan (2018-2031), adopted 2019⁵:
 - T1 Rural Road Traffic Capacity, Safety and HGV content; and
 - CAP TO1 Mitigation of car and HGV volumes on rural roads.

Guidance

8.2.6 The following guidance is relevant to the Development:

- Institute of Environmental Management and Assessment (IEMA), Assessment Guidelines on the Environmental Assessment of Road Traffic⁵ (the 'IEMA Guidelines') published July 2023;
- Planning Practice Guidance (Live Document);
- Guidance on Transport Assessment (DfT 2007)⁶ – formally withdrawn; and
- Design Manual for Roads and Bridges (DMRB, various)⁷, including CD109, CD123, CD116, CD143, CD169, CD195 and LA104⁸.

8.3 Assessment Methodology

Consultation

8.3.1 Formal consultation responses to the Submitted Scheme have been prepared by the local highway authority, Oxfordshire County Council (OCC) and the strategic highway authority,

National Highways (NH). Consultation responses received from the highway authorities have led to continuous and extensive liaison throughout the period since application submission in September 2021. The agreed appraisal methodology has given rise to the presented mitigation strategy. A number of responses made have also been superseded by external events over the intervening two- and half-year period. This includes the removal of public funding for a previously committed road improvement scheme adjacent to the sites; and the change in status of a significantly sized nearby development aspiration. Comments were also made by a neighbouring highway authority, West Northants Council.

8.3.2 Table 8.1 summarises key comments raised of relevance to this assessment and how the assessment has responded to them.

Table 8.1: Consultation Response Summary

<i>Consultee and Comment</i>	<i>Response</i>
<i>Oxfordshire County Council Consultation Responses (18/11/21, 19/11/21 and 24/11/21)</i>	
<p>The development has not taken into account the committed “Growth Deal” scheme as capacity improvement at Baynard’s Green roundabout.</p> <ul style="list-style-type: none"> ▪ The 2021 application TA did not adequately assess the traffic impact on adjacent junctions using available transport models. ▪ The eastern site access is proposed as a four-arm roundabout affecting safety and active travel convenience. <p>Further information is required on a cycleway link to Bicester.</p> <p>Safe pedestrian access should be provided to access local restaurant / retail facilities.</p> <p>The western site access design requires localised review.</p> <p>Public right of way diversion within the western site</p>	<p>The “Growth Deal” scheme was withdrawn by the authority in November 2022. A developer funded improvement scheme is presented.</p> <ul style="list-style-type: none"> ▪ The traffic impact appraisal scope, methodology and results have been agreed with NH and OCC. Findings are set out at Section 6 of the Addendum TA. <p>The eastern site access design has been revised to provide a three-arm signal junction with comprehensive crossing facilities. Details are set out at Section 5 of the Addendum TA.</p> <p>Further detail is presented at Section 3 of the Addendum TA.</p> <p>Crossing facilities are provided as part of the Baynards Green roundabout improvement works. Detail is set out at Section 6 of the Addendum TA.</p> <p>The western site access has been subject to localised amendment. Detail is set out at Section 5 of the Addendum TA.</p>
<i>OCC Consultation Response (22/04/22)</i>	
<p>A cumulative assessment should be provided with the traffic arising from prospective plans for an Oxfordshire Strategic Rail Freight Interchange.</p>	<p>The authorities have confirmed this is no longer appropriate.</p>

National Highways (NH) Consultation Responses. These are regularly updated, usually in the form of a 3-month update (Multiple updates, dating back to 26/10/21). This summary very briefly summarises the extensive agreement.

Clarification of site floor area.	Confirmation provided and agreed.
Local authority transport model use to establish light vehicle Trip Distribution and additional evidence sought to establish goods vehicle Trip Distribution.	Light traffic and HGV traffic distributions agreed via submission of additional supporting information.
Committed development clarification.	This has been superseded and is established by the use of the Bicester Traffic Model (BTM) with committed development inherent.
Capacity Assessments (M40 J10 and A43 / B4100 junctions) – highway network capacity scope and appraisal methodology update required.	This has been entirely superseded. A mitigation scheme has been proposed and agreed. Assessments undertaken via highway authority BTM and VISSIM models.
Appropriate appraisal of the operation of M40 J10 links and junctions.	This has been undertaken and agreed via the VISSIM model.
Interim mitigation scheme not deemed appropriate.	No interim mitigation scheme is now proposed.

West Northants Council (ES Review response dated 17/11/21)

Post-mitigation assessment section required.	A post-mitigation assessment section was provided in the application ES, and this has now been updated.
Phasing implications of one AL site being occupied and other being built not covered.	The implications of both sites being occupied is assessed and is a worst case.
Committed development to be confirmed.	This has been updated and confirmed in the re-submission.
Construction period assumptions questioned.	The data provided is considered to represent a worst case, by combining peak construction operation of each site.
Validity of 2021 traffic data collection questioned.	All data agreed with the relevant highway authorities – BTM traffic flows, supplemented by more recently observed traffic data.
Validity of traffic models questioned.	OCC BTM and NH VISSIM models approved as fit for purpose by OCC and NH.

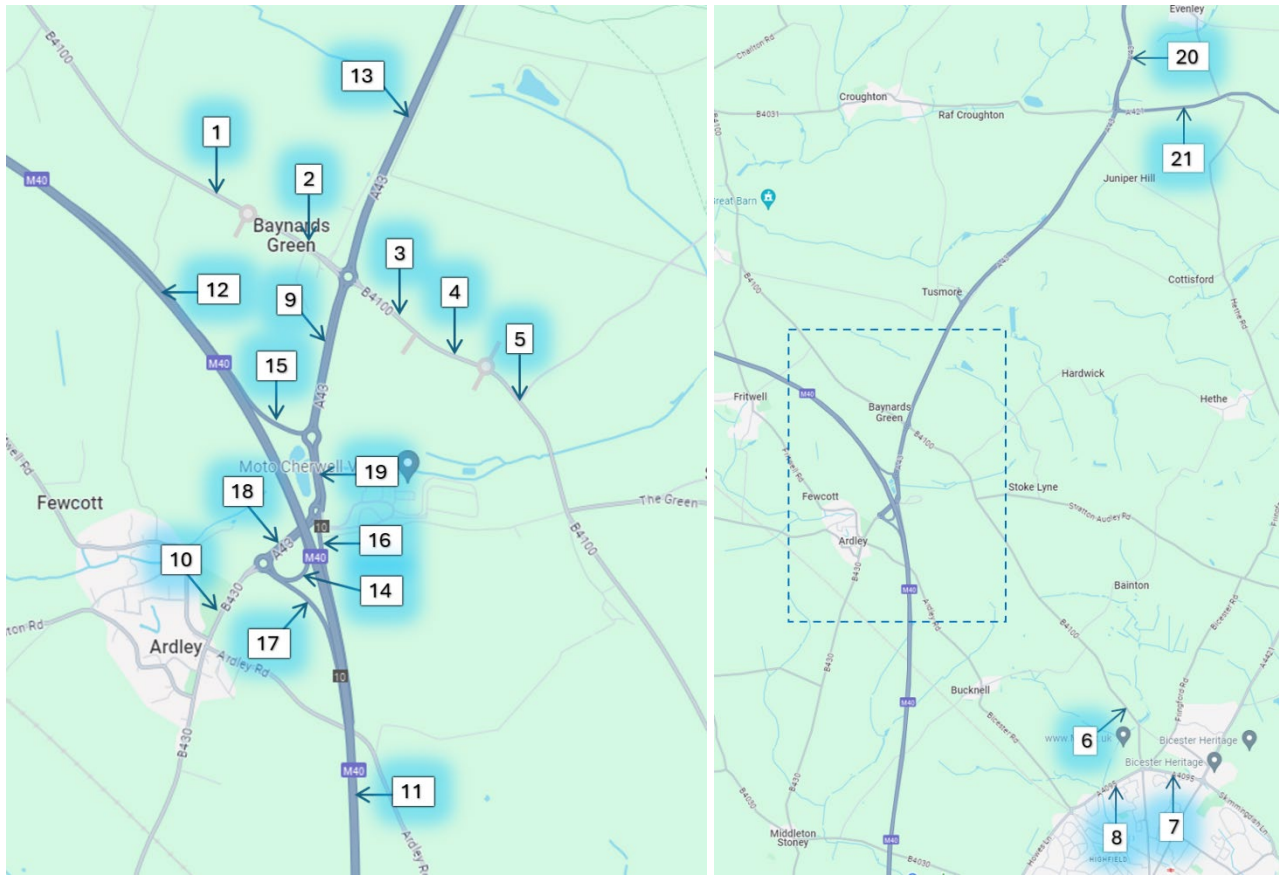
Receptor sensitivity classification questioned.	This has been reviewed and updated in light of passage of time and updated IEMA Guidelines.
Construction Traffic routing should be provided.	This will be provided via a CTMP, which will be conditioned with any consent.
Construction trip generation forecasts questioned and junction assessments to be considered.	Significantly less than operational site traffic forecasts.
Detailed numerical data queried.	Data checked and updated since in any event.
Junction and network capacity checks sought for B4100 and M40 J10.	Provided in full and agreed with NH and OCC.
Presentational clarification sought.	<ul style="list-style-type: none"> ▪ Dealt with in full.
<i>West Northants Council Highways 14/3/22</i>	
Traffic data collection sought relevant to WNC villages of Aynho and Croughton.	<ul style="list-style-type: none"> ▪ Additional traffic data collected.
Impact appraisal of the site development traffic on Aynho and Croughton.	Impact appraisal undertaken.

Study Area and Scope

8.3.3 The study area has been informed by pre and post-application discussions with OCC and NH as described in Table 8.1. It includes the B4100, M40 J10, the A43 and the B4100/A4095 junction and the A4095 on the northern fringe of Bicester. Figure 8.1 illustrates the study area. The extent of the network was derived from highway authority feedback and regard to the IEMA Guidelines.

8.3.4 The study area for appraisal of the PRow network is a 3km radius from the Site boundary.

Figure 8.1: Highway Link Study Area



8.3.5 The ES chapter provides an assessment of the likely significant effects of the Enabling Works, construction phase and operation of the Eastern and Western Developments, and consideration of the Development as a whole. The following assessment scenarios have been defined:

- Baseline – existing conditions at the time of time of the survey (i.e. 2022);
- Construction – assumed peak construction year 2026;
- Future Baseline (without Development) – 2026; and
- Completed Development – 2026.

8.3.6 Within the TA, junction capacity assessments are presented for the network in 2026 and sensitivity test purposes in 2031. The 2026 assessments of the trunk road network are the year of opening tests required by NH. For the trunk road, 2031 tests are provided as a sensitivity appraisal. For the local road network, 2031 represents the end of the Local Plan period.

Establishing Baseline Conditions

8.3.7 The following data sources have been used to inform the assessment:

- Commissioned traffic surveys;
- Webtris (National Highways) Traffic Information System for Strategic Road Network (SRN);

- OCC's Bicester Traffic Model [Tetra Tech Reference A099211-05 BTM];
- Site and adjacent highway topographic survey;
- CDC and OCC websites (used to obtain planning policy, information on Public Rights of Way, Personal Injury Collision Data and committed development information to inform the future base flows);
- OCC highway extents data;
- OS Mapping;
- TEMPro (Trip End Model Presentation Program) incorporating NRTF 2018 used to provide projections of growth over time for use in local and regional transport models. TEMpro presents projections of growth in planning data, car ownership and resultant growth in trip making by different modes of transport;
- TRICS (used to generate trip rates and trip generation for the Development);
- Base Year Freight Matrices published by the Department for Transport (2012);
- ESRI ArcGIS to inform trip assignment; and
- Site visits.

Field Surveys and Traffic Data

- 8.3.8 Multiple site visits have been undertaken within the study area over the period between April 2021 and January 2024. This has included visits undertaken during operational network peak conditions and inter-peaks.
- 8.3.9 Traffic turning flow data has been commissioned from OCC's term consultants (TetraTech) responsible for the Bicester Traffic Model as required by OCC and NH. Link data has been collected in the form of Automatic Traffic Counters by independent enumerator on the B4100. This has been supplemented with historic link data from the NH Webtris database.
- 8.3.10 Traffic data collection comprised:
- 24-hour Automatic Traffic Count (speeds only): B4100, east of A43: 19/06/21 - 25/06/21;
 - 24-hour Automatic Traffic Count (speeds only): B4100, west of A43: 13/07/21 - 19/07/21;
 - 24-hour Automatic Traffic Count: B4100, Croughton Road, Aynho: 24/06/22 – 30/06/22;
 - 12-hour Manual Classified Turning Count B4031 – B4100 Aynho (East) 28/06/22 – 30/06/22;
 - 12-hour Manual Classified Turning Count B4031 – B4100 Aynho (West) 28/06/22 – 30/06/22; and,
 - 24-hour Automatic Traffic County B4100 (multiple locations between A43 and Elmsbrook) 15/12/23 – 21/12/23.

Identifying Likely Significant Effects

8.3.11 The IEMA Guidelines set 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 of communities;
- Driver delay;
- Delay to non-motorised users;
- Non-motorised user amenity;
- Fear and intimidation;
- Road user and pedestrian safety; and
- Hazardous /large loads.

8.3.12 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 UK⁹. It is also not expected that would be a requirement for unusual or hazardous HGV movements from the Development once completed and operational. As such, the assessment of hazardous loads is scoped out of this chapter.

8.3.13 The environmental implications arising from noise and vibration, air quality and cultural heritage effects are dealt with in other chapters of this ES and, as such, not discussed further within this ES Chapter. Potential consequential effects arising from traffic movements on designated ecological sites are assessed within Chapter 9: Air Quality and Chapter 12: Biodiversity and associated appendices and should be read in conjunction with this ES Chapter.

Construction

8.3.14 During the construction of the Development, it will be necessary for various plant, equipment, and materials to be transported to the Site. The construction of the Development will take place in a phased approach, with commencement expected in early 2025 with the Enabling Works. Development of the Western Development and be Eastern Development would follow. Coincidental construction traffic patterns are considered within this assessment.

8.3.15 Construction traffic effects have been based upon the anticipated vehicle routing, professional judgement on quantum of trips, and comparison with baseline flows and the assessment undertaken for a 2026 scenario which is considered to provide a representative peak in construction traffic activity when both the Eastern and Western Developments could be under construction concurrently. The possible outcome whereby either the Eastern or Western Development is operational and the other under construction has not been explicitly assessed. This is because the outcome of completed Development would reflect a worse case as this would involve a higher number of traffic movements.

Completed Development

8.3.16 Operational traffic effects have been based on forecast trip generation, distribution and assignment of light and HGV traffic compared against baseline flows. The site traffic forecasts are based on similarly sized and operationally equivalent existing facilities and

represents a robust appraisal of peak and daily operation. This is based on the assumption of 24-hour, 7 day a week operations.

Cumulative Effects

8.3.17 Cumulative traffic effects have been based on forecast trip generation, distribution and assignment of light and HGV traffic from the Development and the cumulative schemes and compared against baseline flows. Following review of the identified cumulative schemes and consultation feedback from statutory consultees, the following schemes have been included as committed development for the purposes of cumulative assessment, as described in detail within Chapter 3: EIA Methodology, Figure 3.3 and Appendix 3.5:

- Heyford Park (18/00825/HYBRID);
- North-West Bicester (Axis J9) (Ref No. 14/01675/OUT, as amended by NMA 19/00347/OUT and NMA 20/03199/OUT);
- Land to the east of M40 and south of A4095, Chesterton (Great Wolf Leisure Resort) (APP/C3105/W/20/3259189); and
- Lower Farm (Firethorn) (21/01630/OUT).

8.3.18 As these cumulative schemes have been incorporated in the transport modelling scenarios, the assessment of cumulative impacts is inherent through the inclusion of the agreed committed developments in the future baseline (2026).

8.3.19 A cumulative impact appraisal is presented taking into account the neighbouring Tritax Symmetry Ltd (Tritax Scheme) application (22/01340/OUT).

Determining Effect Significance

8.3.20 The assessment of likely significant effects as a result of the Development has taken into account both the Enabling Works, construction phase and once the Development is completed and occupied. Given that the Development is comprised of three interlinked planning applications, the potential effects of each application (i.e. the Enabling Works, Eastern Development and Western Development) are assessed in turn along with an assessment of the three combined (i.e. the Development).

8.3.21 The significance of an effect is determined by the interaction of two factors:

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

8.3.22 The significance of levels of traffic change varies depending upon the environmental impact criteria being considered e.g. severance, driver delay, with reference made to the IEMA Guidelines on each criterion.

8.3.23 The assessment of likely significant environmental effects has been undertaken by comparing the identified baseline conditions of the Site and its surrounds with the Development proposals. 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 highway links of high sensitivity where traffic flows have increased by 10% or more.

8.3.24 Where the predicted increase in traffic flows is lower than the above thresholds, the IEMA Guidelines suggest further detailed assessments are not warranted. Furthermore, increases in traffic flows below 10% are generally considered to be insignificant in environmental terms given that daily variations in background traffic flow may vary by this amount.

Sensitivity of Receptor

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

Table 8.2: Definitions of Receptor Sensitivity

Sensitivity/Value	Definition
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 used by pedestrians without pavements; and 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, surgeries, hospitals, shopping areas with roadside frontage, community centres and parks; areas with narrow or poor-quality pavements and unsegregated cycleways; areas with limited public transport provision (e.g. peak hour only or over-subscribed services); and Conservations Areas.
Low	Receptors with some sensitivity to changes in traffic flows such as links and junctions with moderate or low flows that are operating within capacity, places of worship, public open space, nature conservation areas, listed buildings, residential areas with adequate footway provision, and areas with good public transport provision (i.e. frequent services within capacity).
Negligible	Receptors with a very low sensitivity to traffic flows those sufficiently distant from affected roads and junctions.

Magnitude of Impact

8.3.26 Reference is made to DMRB LA 104 Environmental assessment and monitoring in terms of definition of measure of magnitude and significance of impact. Some elements differ from thresholds suggested in the IEMA Guidance. For example, severance of thresholds are higher. Table 8.3 provides a consolidated set of the definitions of magnitude of impact applied in the assessment based on professional judgement.

Table 8.3: Definitions of Magnitude of Impact

Impact Magnitude	Definition
High	A change in 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 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 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 traffic flow of less than 10%.

Assessing Significance

8.3.27 Table 8.4 shows how the significance of effect is determined based on the sensitivity of the receptor and the magnitude of the impact.

Table 8.4: Significance of Effects Matrix

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

8.3.28 As stated in Chapter 3: EIA Methodology, a Major or Moderate significance of effect is considered significant.

Assumptions and Limitations

8.3.29 The construction traffic forecasts are based on the indicative construction programme defined within Chapter 6: Construction, as well as a number of assumptions on matters such as materials quantities, number of workers etc. However, worst-case assumptions have been applied to determine the forecast construction vehicles for this Site which has been used to determine the associated effects.

8.3.30 The appraisal is based upon contemporary traffic data. The traffic modelling undertaken in the TA is based upon a series of assumptions pertaining to traffic generation and distribution forecasts for the Development proposals. These assumptions were subject to discussion with OCC Highways and NH, with agreement that they are fit for purpose for traffic forecasting.

- 8.3.31 The reliability and accuracy of the cumulative development sites traffic flows are based on the traffic data sourced for committed developments from the respective Transport Assessments.

8.4 Baseline Conditions

Site Location and Access

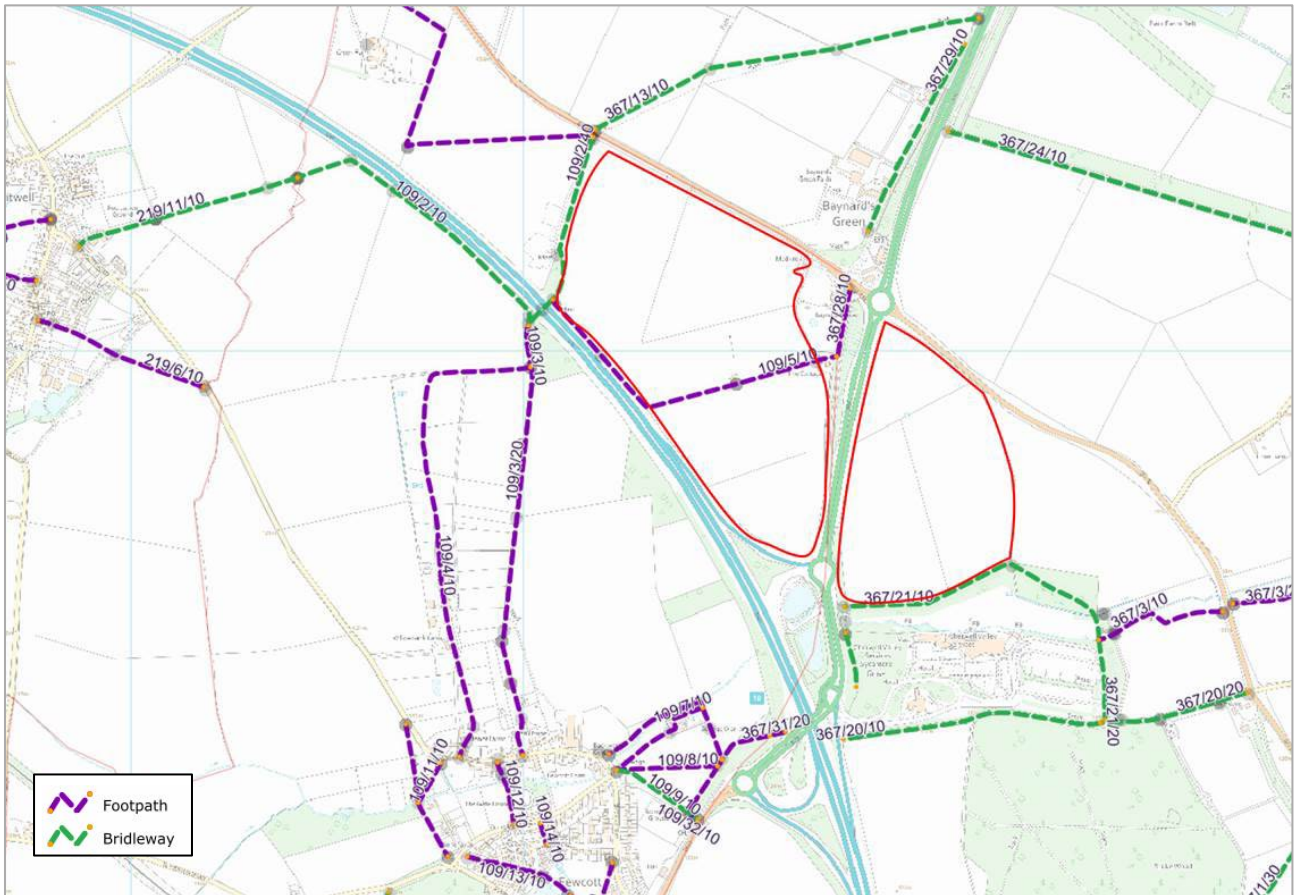
Eastern Site

- 8.4.1 The Eastern Site is bounded to the west by the A43, to the north by the B4100 and to the south by the Cherwell Valley Motorway Service Area (MSA). The Eastern Site is informally accessed by agricultural vehicles at the eastern end of the B4100 site frontage. Beyond occasional agricultural vehicles, the Eastern Site does not generate any trips.

Western Site

- 8.4.2 The Western Site is informally accessed by agricultural vehicles at the north-western extremity of the B4100 site frontage. Apart from occasional agricultural vehicles, the Western Site does not generate any vehicular trips. Public Footpath 109/5/10 crosses the site between the A43 and M40 as shown on Figure 8.2, before continuing inside the south-western boundary of the site. Bridleway 109/2/40 runs within the western boundary of the Western Site.

Figure 8.2: Public Right of Way Network



Local Highway Network

- 8.4.3 The Eastern Site is bounded to the west by the A43(T), a dual all-purpose road which runs between the M40 (at Junction 10) to the M1 at Northampton at Junction 15A. It is lit and subject to national speed limit.
- 8.4.4 The Eastern Site is bounded to the north by the B4100. The B4100 connects Bicester (to the southeast) and Banbury to the north west. The section fronting the Eastern Site is subject to a 50mph speed limit and is unlit. The carriageway is approximately 7.5m wide.
- 8.4.5 The Western Site is bounded to the B4100 to the north. This section is also unlit, but subject to national speed limit.
- 8.4.6 Part of the Western Site is bounded by the A43(T) to the east. The southwestern boundary is the M40 mainline and southbound off-slip.
- 8.4.7 The M40 runs between London and Birmingham. The adjacent section is dual three lanes, which northbound and southbound slips.
- 8.4.8 The junction of the A43/B4100, known as Baynards Green, is a large four-arm at grade priority-controlled roundabout with an inscribed circular diameter of 75m. The circulatory carriageway is 12m wide marked out in two lanes. There are no flares on the A43 approaches. Entry path curvature on both approaches is larger than recommended in current design guidance (CD116). The exit width on the B4100 eastern arm is narrower than recommended in CD116.
- 8.4.9 There are roadside services in the north-western quadrant of the roundabout accessed from the B4100 western arm. These are served by a priority junction where the right turn out movement is banned. There is a right turn lane for inbound movements.
- 8.4.10 The junction of A43 and M40 at M40 Junction 10 is a grade separated junction with an off-line motorway service area. The junction comprises a roundabout junction on the western side linking the northbound carriageway slip roads, the B430 and dual two-lane overbridges. On the eastern side of the junction is a partially signalised gyratory with the cut-through. The M40 southbound off-slip runs into the A43 Padbury junction, designed in the form of a roundabout although with no circulation at its southern point.
- 8.4.11 The B4100(E) forms a 4-arm 40m ICD roundabout junction with the A4095 on the edge of Bicester.
- 8.4.12 OCC has granted itself consent for a traffic signal scheme under the provision of County application 23/02852/OCC/R30094/21. The works are identified for construction this year, completion early 2025.

Traffic Flows

- 8.4.13 In addition to traffic surveys undertaken, as set out in para 8.3.9-10, published traffic data has been used. Figure 8.1 illustrates the area wide extent of link data collected.
- 8.4.14 Annual Average Daily Traffic (AADT) link flows for the M40 mainline; M40 J10 overbridge and slip roads; and A43 were obtained from NH Webtris online database for the most recently available year, usually 2022, but with 2019 and 2023 also used.

8.4.15 Similarly AADT data for A4095, B430 and A421 was obtained from the Department of Transport (DfT) database.

8.4.16 Base year (2022) AADT flows are summarised in Table 8.5.

Table 8.5: Baseline Traffic Flows - Daily 2022

Ref	Location	Total Flows	Heavy Vehicle Flows	Goods (HGV)
1+2	B4100 (West)	6,125	184	
3+4+5	B4100 (East)	12,940	492	
7	A4095 (East)	15,711	628	
8	A4095 (West)	12,568	201	
9	A43 (South)	36,328	5,377	
10	B430	8,255	388	
11	M40 (South)	108,440	16,808	
12	M40 (North)	88,674	16,848	
13	A43 (North)	37,315	5,970	
14	M40 Northbound On Slip	5,180	772	
15	M40 Southbound Off Slip	6,650	845	
16	M40 Southbound On Slip	16,700	3,307	
17	M40 Northbound Off Slip	17,308	2,873	
18	A43 M40 Overbridges	30,498	3,965	
19	A43 Padbury – Cherwell r'bouts	47,027	7,054	
20	A43 North of Barley Mow Roundabout	35,049	5,773	
21	A421	10,666	960	

8.4.17 To derive future year base traffic forecasts, factors have been extracted from TEMPRO for Cherwell 11 Middle Layer Super Output Area (MSOA) & 2018 Road Traffic Forecasts (RTF) Core Scenario as listed in Table 8.6.

Table 8.6: Tempro Growth Factors

		2019-2022	2022-2026	2022-2031
AADT	A-Road	1.0133	1.0219	1.0655
	Trunk	1.0259	1.0368	1.0948
	Motorway	1.0220	1.0371	1.1140
AM (0700-1000)	A-Road	1.0128	1.0226	1.0631
	Trunk	1.0253	1.0376	1.0923
	Motorway	1.0215	1.0379	1.1115
PM (1600-1900)	A-Road	1.0125	1.0215	1.0629
	Trunk	1.0251	1.0364	1.0920
	Motorway	1.0213	1.0367	1.1113

8.4.18 Peak hour reference case (2026 and 2031) data for junctions was extracted from OCC's Bicester Traffic Model (based on pre-pandemic) baseline traffic data and with traffic from committed development already included.

Severance and Driver Delay

- 8.4.19 There is currently limited need to cross the highway links on foot in close proximity to the site. The Roadside Services at A43/Baynards Green roundabout and a small number of residential dwellings are the extent of the existing land uses. The PRow network crosses the B4100 (W) at the north-western corner of the Western Site. Whilst safe crossing of the A43 is challenging, there is currently little need to do so. The B4100 (W) does not present a challenging link to cross in the vicinity of the PRow at the northwest corner of the western parcel; more so however at the PRow crossing adjacent to the roadside services .
- 8.4.20 M40 Junction 10 and the A43/Baynards Green are subject to congestion particularly during peak periods with drivers experiencing delay.

Highway Safety

- 8.4.21 Personal Injury Collision data (STATS19) data as published by Department of Transport has been reviewed for the most recent available five-year period. The study area includes the area within five kilometres of the site as per the requirements of GG142.
- 8.4.22 At the Baynard's Green roundabout there have been an average of two reported incidents per year between 2018 and 2023 inclusive (2023 provisional). This is a relatively good record given the level of demand and complexity of the junction. Most incidents were of slight severity. One incident was serious. Overall, there are no notable clusters or trends.
- 8.4.23 There are no reported incidents on the B4100 frontage of the Western Site. There was a single slight incident on the Eastern Site frontage which appears related to the A43 roundabout operation and included above.
- 8.4.24 Overall, there are no existing accident patterns that have a bearing on the proposed development.

Walking and Cycling Network

- 8.4.25 There is no pedestrian or cycleway provision on the B4100 or A43 frontage, or indeed on any part of either road within the study area.
- 8.4.26 Bridleway 109/2/40 runs along the western edge of the Western Site. This crosses the motorway at an overbridge where it turns to follow parallel to the northbound carriageway; the bridleway 109/2/10 continues to the village of Fritwell. Footpath 109/3/10 continues south from the overbridge into Fewcott.
- 8.4.27 Footpath 109/5/10 follows the southern boundary of the Western Site. Approximately midway along the southern boundary it diverts into the Western Site and joins footpath 367/28/10 south of Baynard House. Footpath 109/5/10 is intended to be retained but diverted within the Site.
- 8.4.28 Bridleway 367/21/10 which runs along the southern boundary of the Eastern Site with the Cherwell Valley Service Area.

Bus Services

- 8.4.29 An existing bus service, the 505 operated by Stagecoach, runs along the Eastern Site frontage on the B4100. There are currently no bus stops within convenient walking distance.

The service operates from Bicester Village railway station, through the centre of Bicester, along the Banbury Road, onto the B4100 past the Eastern Site before joining the A43 north, from where it loops within the Brackley area including the northern urban extension at Radstone Fields before heading to Banbury. It is an hourly service running from around 0700-1900 weekdays, with a slightly reduced frequency on Saturdays. There is no Sunday service.

Rail Services

- 8.4.30 The nearest rail services are at Bicester North and Bicester Village, both over 6km from the Site boundary. Both train stations are managed by Chiltern Railways. Bicester North station provides a half hourly service to Birmingham, Banbury and London Marylebone. Bicester Village provides a half hourly service between London Marylebone and Oxford.

Summary of Receptors and Sensitivity

- 8.4.31 The users of the nearby road links are considered sensitive receptors. Table 8.7 provides a summary of receptor sensitivity.

Table 8.7: Summary of Receptor Sensitivity

Receptor	Sensitivity (Value)
<i>Existing</i>	
A43/B4100 Junction	High
M40 Junction 10	High
A43	Negligible
B4100 (West of A43 - rural)	Negligible
B4100 (Croughton Road, Aynho)	Low
B4100 (East of A43)	Negligible
B430	Low
<i>Future</i>	
Western Development Site Access	Low
Eastern Development Site Access	Low

Future Baseline Conditions

- 8.4.32 There will be changes on the highway network in the absence of the Development. These are due to vehicle movements arising from other developments (i.e. cumulative schemes) in the area and planned highway upgrade schemes.
- 8.4.33 The network between M40 J10 and A43 Baynards Green had been identified for improvement with secured funding as an OCC Growth Fund scheme. The funding available was significantly reduced in late-2022, with only localised improvements to the A43 Padbury Roundabout, where the M40 southbound off-slip meets the A43 retained. The effect of the scheme proposals is incorporated within the Bicester Traffic Model (BTM).
- 8.4.34 The A4095/B4100 junction benefits from planning consent, with the existing roundabout junction due to be replaced by a signalised crossroads. Funding for the scheme is understood to be secured and works due to run through 2024.

8.5 Scheme Design and Management

Construction

- 8.5.1 It is anticipated that most construction vehicles will approach the Site via the A43 as opposed to the B4100 and this is what has been assumed within the assessment. The routes taken by construction traffic will be agreed with the planning and highway authorities by way of a Construction Traffic Management Plan (CTMP), to be secured by planning condition and agreed with CDC and OCC at the Reserved Matters stage. Contractors will be encouraged to minimise the impact of travel by considering alternative modes of transport to the site compound. Due to the rural location, sustainable travel will be best achieved through the promotion of car sharing.
- 8.5.2 The Applicant has committed to construction site working hours, on-site compounds and other mitigation measures such as wheel-washing in a Framework Construction Environmental Management Plan (CEMP) (Appendices 6.1 and 6.2).

Completed Development

- 8.5.3 Access to the Western Development will be provided via a new 40m inscribed circle diameter (ICD) roundabout on B4100. The junction has been designed to relevant DMRB standards and will fully accommodate pedestrian and cyclist infrastructure.
- 8.5.4 The proposed B4100 access roundabout feeds onto an internal link road leading into an internal roundabout (ICD 36m). The internal link comprises a 7.3m carriageway with bus layby to allow scheduled bus services to enter the Site, turn at the internal roundabout and leave in forward gear. This element forms part of the enabling works.
- 8.5.5 Access to the Eastern Development will be provided via a new signalised T-junction. This junction will also meet relevant DMRB standards and will fully accommodate pedestrian and cyclist infrastructure.
- 8.5.6 Both access designs (and the Enabling Works) have been subject to independent Stage 1 Road Safety Audit.
- 8.5.7 Parking demand will be accommodated within the Development in full. The precise configuration of vehicle parking is not fixed and will be addressed when the occupiers are known as part of subsequent Reserved Matters applications. The Illustrative Masterplan makes provision for parking at a ratio of 1 space per 200m² GIA. This reflects the applicant's experience of what the market would currently require from an operational perspective.
- 8.5.8 A total of 6% of the car parking spaces would be Blue Badge spaces which accords with relevant standards; 25% of the total parking would be active electric vehicle charging spaces reflecting OCC's policy.
- 8.5.9 Similarly cycle parking levels would be determined as part of subsequent Reserved Matters applications. The current OCC guidance would give rise to provision equivalent to approximately 50% of staff cycling to work. It is proposed to safeguard land for the level of cycle parking identified by the guidelines, but only provide a smaller proportion at the outset, prior to travel patterns being established.
- 8.5.10 The Western parcel has been designed such that scheduled bus services are brought into the Developments to provide convenient travel options. This includes bus stops with laybys and shelters. The Eastern Site is served by laybys adjacent to the B4100.

- 8.5.11 It is proposed to divert Public Footpath PRoW 109/5/10 which runs through the Western Site. The alignment reflects the expressed preference of OCC and passes through the Site rather than along the boundary. Overall walking times will remain similar.
- 8.5.12 The A43/B4100 is in need of improvement to address existing congestion concerns but the funding for the Growth Fund scheme previously identified by OCC was withdrawn.
- 8.5.13 The impact appraisal both for the Development and the cumulative Development including the Tritax Scheme proposals illustrate that mitigation at the Baynards Green roundabout is required. A roundabout signalisation scheme has been prepared and agreed in principle with NH and OCC. The design has been subject to formal review by NH.
- 8.5.14 The scheme comprises comprehensive pedestrian and cyclist facilities at the junction and further afield between the Eastern and Western Development site accesses. The scheme includes signalised crossing of the southern arm of the A43 and predominant provision of 3m footway/cycleways.
- 8.5.15 In summary, proposed enhancements brought forward through the Development in the form of embedded mitigation will include:
- Highway improvement scheme at A43/B4100, including localised widening; signalisation; extensive pedestrian/cycle links; and signalised crossing of the A43 southern arm;
 - Footway/cycleway on B4100 between the Eastern Development and Western Development via S278 Agreement;
 - Commitment to deliver scheduled bus service linking each Development to Bicester, as appropriate via Section 106 (S106) Agreement. This is discussed in more detail within [Section 4.4 of the TA;]; Localised re-alignment of the B4100 to the east of A43 facilitating delivery of bus laybys;
 - Pedestrian refuge crossing of B4100 (W) to link with roadside services via S278 Agreement; and
 - Diversion of existing Public Right of Way within Western Development.
- 8.5.16 A series of further measures, not required to mitigate any significant effects of the proposals have been identified as further potential options for enhancement. These include:
- The creation of a new cycle route to/from Bicester along the B4100.
 - Upgrading bus waiting areas within Bicester to incorporate cycle parking facilities at bus stops along the existing bus service passing the Site.
 - A further upgrade to the bus service referred at para 8.5.15.
 - Enhancing access to the Public Rights of Way network.

8.6 Construction

Assessment of Effects

Enabling Works (Western Development)

- 8.6.1 The Enabling Works provide the infrastructure measures to allow the Western Development to proceed. In transport terms they include the construction of the Western Site Access and a section of internal road infrastructure which facilitates development. As such it does not generate vehicular traffic in an operational stage, since the works themselves are not a trip attractor or generator. The Enabling Works include the diversion of PRoW within the Western Site.
- 8.6.2 The ES transport appraisal of these works therefore is only relevant to the construction assessment.
- 8.6.3 The number of HGV movements associated with the construction of the Enabling Works 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, there could be a total of 40 two-way HGV movements on a daily basis on the Western Site.
- 8.6.4 Throughout the Enabling Works programme, it is estimated that there would be approximately 40 construction personnel present, of whom 75% are estimated to drive to the Western Site. Therefore, there are likely to be in the order of 25 vehicles parked on the Western Site at any one time. The arrival of construction staff is assumed to follow a similar distribution to future employees of the Eastern and Western Developments with around 40% of the staff forecast to reside in Bicester, as set out in Table 7 of the TA.
- 8.6.5 A comparison of the estimated HGV movements of the Enabling Works against the existing baseline flows on the A43 is set out in Table 8.8.

Table 8.8: Percentage Increase in Daily (AADT) HGV Movements During Construction (2026) – Enabling Works

Link	Baseline HGV Flows (2-way)	Predicted Increase in HGV Movements	% Increase
A43 (N)	6,468	20	0.003%
A43 (S)	5,484	20	0.004%

Severance

- 8.6.6 Given the low level of daily flows generated by Enabling Works traffic, no significant severance effect is expected to result. The sensitivity of the receptor is negligible and the magnitude of the impact is negligible and therefore the overall significance of the effect is negligible.

Driver Delay

- 8.6.7 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 A43 receptor is high and the magnitude of the impact is negligible and therefore the overall significance of the effect is negligible. The construction of the Western Site Access will result in traffic management which would lead to some measure of driver delay. This traffic management is likely to be made via traffic signal control or similar and

the extent of delay not significant. The impact of the construction HGV traffic itself will be negligible on driver delay.

Pedestrian and Cyclist Delay and Amenity

- 8.6.8 Pedestrian and cyclist activity will not be significantly affected by construction traffic and the recommended routing as there are few existing pedestrians or cyclists, and because the HGV movements are insufficient to affect delay or amenity. Routeing of vehicles reflects the objective of minimising the areas of residential development affected and hence pedestrian activity. The sensitivity of the receptor is negligible and the magnitude of the impact is negligible and therefore the overall significance of the effect is negligible.
- 8.6.9 The PRoW diversion may lead to short term temporary inconvenience for pedestrians using the PRoW while works are undertaken, but the significance of the effect is negligible and temporary.

Accidents and Safety

- 8.6.10 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 negligible and the magnitude of the impact is negligible and therefore the overall significance of the effect is negligible. Standard safety measures would be in place for construction traffic and highway works as part of the CEMP and necessary highway approvals.

Development

- 8.6.11 As with the Enabling Works, the number of HGV movements associated with the construction of the Development is difficult to estimate with certainty on a daily basis. However, based upon similar schemes, it is considered that during the main construction phases with Eastern and Western Sites being built out at the same time, there would be a total of 80 two-way HGV movements on an average daily basis.
- 8.6.12 Throughout the construction programme, it is estimated that there would be approximately 160 construction personnel present on the Development, of whom 75% are estimated to drive to the Development. There are therefore likely to be in the order of 50-60 vehicles parked on each parcel at any one time. The arrival of construction staff is assumed to follow a similar distribution to employees of the Enabling Works.
- 8.6.13 A comparison of the estimated HGV movements of the Development against the existing levels on the A43 is set out in Table 8.9.

Table 8.9: Percentage Increase in Daily HGV Movements During Construction (2026) – Eastern Development

Link	Baseline HGV Flows (2-way)	Predicted Increase in HGV Movements	% Increase
A43 (N)	6,468	40	0.006%
A43 (S)	5,484	40	0.009%

Severance

- 8.6.14 Given the low level of daily flows generated by construction traffic, no significant severance effect will result. The sensitivity of the A43 receptor is high and the magnitude of the impact is negligible and therefore the overall significance of the effect is negligible. The construction of each of the Site Accesses will result in traffic management which would lead to some measure of driver delay. This traffic management is likely to be made via traffic signal control for part of the construction with the extent of delay not significant. The impact of the construction HGV traffic itself will be negligible on driver delay.

Driver Delay

- 8.6.15 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 in construction traffic (however limited in view of overall numbers). The sensitivity of the receptor is negligible and the magnitude of the impact is negligible and therefore the overall significance of the effect is negligible.

Non-Motorised Delay and Amenity

- 8.6.16 Pedestrian and cyclist activity will not be significantly affected by construction traffic and the recommended routing partly due to the low level of existing pedestrian and cyclist activity in the vicinity and partly due to the low numbers of construction vehicles. Routeing of vehicles reflects the objective of minimising the areas of residential development affected and hence pedestrian activity. The sensitivity of the receptor is negligible and the magnitude of the impact is negligible and therefore the overall significance of the effect is negligible.

Road User and Pedestrian Safety/Fear and Intimidation

- 8.6.17 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 or on Fear and Intimidation. The sensitivity of the receptor is negligible and the magnitude of the impact is negligible and therefore the overall significance of the effect is negligible. Standard safety measures would be in place for construction traffic and highway works as part of the CEMP and necessary highway approvals.

Mitigation, Monitoring and Residual Effects

- 8.6.18 Other than routing and timing agreements, together with details of site compound and parking provision, which would form part of the subsequent Reserved Matters applications for the Eastern and Western Developments, there is no requirement for site-specific mitigation to accommodate the construction phase as no significant adverse effects have been identified. However, as set out under [Section 8.5:] 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. CTMPs for both the Eastern and Western Developments will be provided at the Reserved Matters stage and can be secured via planning condition. Standard safety measures would be in place for construction traffic and highway works as part of the CEMP and necessary highway approvals.

8.6.19 The sensitive receptors within the vicinity of the Site are users of the congested A43/Baynards Green roundabout and M40 Junction 10 which will be subject to increased volumes of traffic from construction-related traffic from the Development. Potential effects will be temporary and short-term. There would be negligible residual effects as a result of the construction phase for the Enabling Works, Eastern Development; Western Development; and for the Development as a whole.

8.7 Completed Development

Assessment of Effects

Development Traffic

8.7.1 Traffic generation, distribution and assignment methodology and case peak hour and daily vehicular trip generation forecasts for the Eastern Development, Western Development and Development are set out in Section 4 of the TA Addendum.

8.7.2 A summary of the daily traffic generation for the Eastern Development, Western Development and combined Development is set out within Table 8.12. The Site is expected to operate on the basis 24 hours/day, 7 days/week.

Table 8.12: Daily AADT Development Traffic Generation

	Car/vans	HGVs	Total
Eastern Development	1,514	588	2,102
Western Development	2,724	1,060	3,784
Development (i.e. combined)	4,238	1,648	5,886

8.7.3 A summary of the peak hour traffic generation for the Eastern Development, Western Development and Combined Development is set out within Table 8.13.

Table 8.13: AM and PM Weekday Peak Hour Development Traffic Generation

	Car/vans	HGVs	Total
<i>AM Peak (08:00 – 09:00)</i>			
Eastern Development	119	38	157
Western Development	215	68	283
Development (i.e. combined)	334	106	440
<i>PM Peak (17:00 – 18:00)</i>			
Eastern Development	123	31	154
Western Development	223	56	279
Development (i.e. combined)	346	87	433

8.7.4 The effects of Development generated traffic on the wider highway network are considered to allow an investigation of the potential effects which may result. The Development implications are tested through traffic models as reported in the TA Addendum at Section 6. This includes the BTM, which includes 2026 and 2031 scenarios, and M40 Junction 10

VISSIM. Tables 8.14 and 8.15 set out the percentage change for total traffic and HGVs respectively with reference to the AADT flows in 2026.

- 8.7.5 Future Traffic Flows for 2031 are only produced as a sensitivity test to allow highway junction capacity appraisals, in accordance with highway authority requirements. Predicted traffic flows in 2031 are therefore not included in the ES chapter.

Table 8.14: Percentage Daily Traffic Increase for Western Development; Eastern Development; and Combined Development

Link Ref.	Road	% change relative to 2026 incl. committed development		
		Western Development	Eastern Development	Combined Development
		2026 (AADT)		
1	B4100 West	9%	3%	12%
2	B4100 between Western Access and A43	51%	3%	54%
3	B4100 between A43 and Eastern Access	6%	10%	16%
4	B4100 East	6%	4%	10%
5	B4100 East	6%	4%	10%
6	B4100 (Bicester)	5%	3%	8%
7	A4095	2%	1%	3%
8	A4095	1%	1%	2%
9	A43 between B4100 and Padbury junction	3%	2%	5%
10	B430	3%	1%	4%
11	M40 South	1%	<1%	1%
12	M40 North	<1%	<1%	<1%
13	A43 North of B4100	3%	2%	5%
14	M40 Northbound On	3%	2%	5%
15	M40 Southbound Off	2%	1%	3%
16	M40 Northbound Off	2%	1%	3%
17	M40 Southbound On	2%	1%	3%
18	M40 Overbridge	2%	1%	3%
19	MSA to Padbury	2%	1%	3%
20	A43 North of A421	2%	1%	3%
21	A421	3%	2%	5%

Table 8.15: Percentage Daily HGV Traffic Increase Western Development; Eastern Development; and Combined Development

Link Ref.	Road	% change relative to 2026 incl. committed development		
		Western Development	Eastern Development	Combined Development
		2026 (AADT)		
1	B4100 West	0%	0%	0%
2	B4100 between Western Access and A43	603%	0%	603%
3	B4100 between A43 and Eastern Access	10%	100%	110%
4	B4100 East	10%	5%	15%
5	B4100 East (between AL + Tritax)	10%	5%	15%
6	B4100 (Bicester)	10%	5%	15%
7	A4095	8%	4%	12%
8	A4095	0%	0%	0%
9	A43 between B4100 and Padbury junction	10%	5%	15%
10	B430	4%	2%	6%
11	M40 South	2%	1%	4%
12	M40 North	1%	<1%	1%
13	A43 North of B4100	7%	5%	11%
14	M40 Northbound On	7%	4%	11%
15	M40 Southbound Off	6%	4%	10%
16	M40 Southbound On	7%	4%	11%
17	M40 Northbound Off	6%	3%	10%
18	M40 Overbridge	7%	4%	11%
19	MSA to Padbury	7%	4%	10%
20	A43 North of A421	6%	4%	10%
21	A421	10%	6%	16%

- 8.7.6 As previously outlined in section 8.3, the IEMA Guidelines suggest that *“detailed environmental 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”*.

Eastern Development

- 8.7.7 Table 8.14 indicates that no links are expected to experience total traffic flows percentage increases exceeding 30%.
- 8.7.8 Table 8.15 indicates that the following links are expected to experience percentage increases in HGV flows exceeding 30%:
- B4100 between the A43 and the proposed Eastern Development access.
- 8.7.9 There are no further links which exceed the 10% threshold relevant to sensitive receptors.

Severance

- 8.7.10 There is no existing requirement to cross the B4100 at this location. With the Eastern Development, employees or visitors to the site will need to cross the B4100 to access the southbound bus layby. The Site access will include signalised pedestrian crossing facilities to allow convenient and safe movement. The significance of effect on severance is minor beneficial.

Driver Delay

- 8.7.11 Peak hour operational assessments were undertaken within the TA on the local network in future year of 2026 and a sensitivity test of 2031. The results of these are included in Section 6 of the TA Addendum.

Site Access Junction and B4100

- 8.7.12 The assessments show that the Eastern Development access will operate satisfactorily in all modelled scenarios during the peak hour periods. The sensitivity of the B4100 is low and the magnitude of change is low. The significance of the effect on driver delay of the Site Access on the B4100 is considered to be low.

A43/B4100 junction and M40 Junction 10

- 8.7.13 The sensitivity of the A43 receptor is high, and the magnitude of change is low. The proposed works at the A43/B4100 roundabout will fully mitigate the impact of the Eastern Development and provide significant operational capacity and pedestrian/cycle benefits. The significance of effect on driver delay at the A43/B4100 junction is assessed to be moderate beneficial.
- 8.7.14 The highway network implications of the mitigation scheme will also benefit the operation of the M40 Junction 10 interchange since the operation of M40 J10 and the A43 roundabout are linked. Congestion at the M40 J10 is partly as a consequence of the A43 queuing. The sensitivity of the M40 Junction 10 receptor is high, and the magnitude of change associated with the Eastern Development is low. Following implementation of the mitigation scheme, significance of effect on driver delay at M40 J10 is assessed to be minor beneficial.

Non-Motorised Users

- 8.7.15 Pedestrian and cyclist delay and amenity relate to existing users and future employees. 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 assessors' judgement is more appropriate than strictly held thresholds, but nonetheless it is informative as a point of reference.
- 8.7.16 The Development will deliver a predominantly 3m wide footway/cycleway on the B4100 between the Eastern and Western Sites including signalised crossing of the A43 providing a safe and convenient route for staff (and visitors) to access the roadside services. The footway/cycleway would be delivered via S278 Agreement.
- 8.7.17 The Applicant has committed to funding the increased frequency of a scheduled bus service. Layby facilities on the B4100 will include shelters and be supported by comprehensive footways and signalised crossing facilities.
- 8.7.18 The effects of Eastern Development traffic are permanent on pedestrians and cyclists. The Development will provide new pedestrian and cycle facilities in the form of a new footway/cycleway and pedestrian crossings on the A43 and B4100. The sensitivity of the receptor is high, and magnitude of change is low. The significance of the effect is minor beneficial.

Accidents and Safety / Fear and Intimidation

- 8.7.19 The Site access junctions will be designed in accordance with relevant design guidance presenting safe additions to the highway. The adjacent network (A43, M40 J10) is congested, but does not exhibit a poor accident history. The effects of Eastern Development traffic are permanent on road users. The sensitivity of the receptor is high and magnitude of change is low. The A43/B4100 mitigation scheme will introduce bespoke pedestrian/cyclist facilities and the signalisation will reduce vehicle conflict at the junction. The significance effect is minor beneficial.

Western Development

- 8.7.20 Table 8.14 indicates that the following links are expected to experience increased total traffic flows exceeding 30%:
- B4100 between the A43 and the proposed Western Development access.
- 8.7.21 Table 8.15 indicates that the following links are expected to experience increased HGV flows exceeding 30%.
- B4100 between the A43 and the proposed Western Development access.
- 8.7.22 There are no further links which exceed the 10% threshold relevant to sensitive receptors.

Severance

- 8.7.23 There is no requirement for future users of the Western Development to cross the B4100 to access the site. It is plausible that employees may visit the roadside services. A pedestrian

refuge is proposed. The sensitivity of the receptor is low, and the magnitude of change is high (in terms of HGV movement). The significance of the effect is negligible.

Driver delay

- 8.7.24 Peak hour operational assessments were undertaken within the TA on the local network in future year of 2031. The results of these are included in Section 6 of the TA Addendum.

Site Access Junction and B4100

- 8.7.25 The assessments show that the Western Development access will operate satisfactorily in all modelled scenarios with negligible queuing and minimal delay during the peak hour periods. The sensitivity of the B4100 is low and the magnitude of change is high (in terms of HGV movement). The significance of the effect is therefore minor adverse on road users on the B4100 between the Western Site and the A43 Baynards Green roundabout.

A43/B4100 junction and M40 Junction 10

- 8.7.26 The sensitivity of the A43 receptor is high, and the magnitude of change is low. The proposed works at the A43/B4100 roundabout will fully mitigate the impact of the Western Development and provide significant operational capacity and pedestrian/cycle benefits. The significance of effect on driver delay at the A43/B4100 junction is moderate beneficial.
- 8.7.27 The highway network implications of the mitigation scheme will benefit the operation of the M40 Junction 10 interchange. The sensitivity of the M40 Junction 10 receptor is high, and the magnitude of change is low. On implementation of the mitigation scheme, the significance of effect on driver delay at the M40 j10 is minor benefit.

Pedestrian and Cyclist Delay and Amenity

- 8.7.28 The Development will deliver a comprehensive footway/cycleway on the B4100 between the Western and the Eastern Sites providing a safe and convenient route for staff (and visitors) to access the roadside services.
- 8.7.29 There will be a localised re-routing of an existing Public Right of Way within the Western Development. Overall walking times will remain similar.
- 8.7.30 The Applicant has committed to bringing a scheduled bus service with increased frequency into the Western Development with a bespoke bus drop off area within the site, such that passengers would not need to access the public highway on foot. These works are included within the Enabling Works.
- 8.7.31 The effects of Western Development traffic are permanent on pedestrians and cyclists. The Development will provide new pedestrian and cycle facilities. The sensitivity of the receptor is low and magnitude of change is high (in terms of HGVs). The significance of the effect is minor beneficial.

Accidents and Safety / Fear and Intimidation

- 8.7.32 The Site access junctions to both Developments will be designed in accordance with relevant design guidance presenting safe additions to the highway. The adjacent network (A43, M40 J10) is congested, but does not exhibit a poor accident history. The mitigation

scheme at the A43/Baynards Green will introduce traffic signal control, removing elements of vehicle conflict.

- 8.7.33 The effects of Western Development traffic are permanent on road users. The sensitivity of the receptor is low and magnitude of change is high (in terms of HGVs). The significance of the effect is minor adverse. Both access junctions are designed to relevant standards hence turning movements are provided for in a safe manner.

Combined Development

- 8.7.34 Table 8.14 indicates that the B4100 between the Western Access and the A43 is expected to experience percentage traffic increases exceeding 30% with both the operational Eastern and Western Developments. Table 8.15 indicates that both sections of the B4100 between the A43 junction and two new Site accesses are expected to experience increased flows exceeding 30%.
- 8.7.35 Table 8.14 indicates that there are no further links with sensitive receptors which would exceed the threshold of a 10% increase for total traffic or HGVs.

Severance

- 8.7.36 There is no requirement for future users of the Western Development to cross the B4100 to access the Site although it is plausible that employees may wish to visit the roadside services. A pedestrian refuge is therefore proposed. The sensitivity of the receptor is low and the magnitude of change is high (in terms of HGV movement). The significance of the effect is negligible. A new signalised crossing will provide access to future bus laybys.

Driver Delay

- 8.7.37 Peak hour operational assessments were undertaken within the TA on the local network in future years of 2026 and a sensitivity test at 2031. The results of these are included in Section 6 of the TA Addendum.
- 8.7.38 The assessments show that the Development accesses will operate satisfactorily in all modelled scenarios with modest queuing and minimal delay during the peak hour periods. The sensitivity of the B4100 is low and the magnitude of change is high (in terms of HGV movement). The A43/B4100 mitigation scheme delivers capacity benefits over and above that required to mitigate the Development.

A43/B4100 junction and M40 Junction 10

- 8.7.39 The sensitivity of the receptor is high, and the magnitude of change is low. The proposed works at the A43/B4100 roundabout will fully mitigate the impact of the Western Development and provide significant operational capacity and pedestrian/cycle benefits. The significance effect on driver delay at the A43/B4100 junction is moderate beneficial.
- 8.7.40 The highway network implications of the mitigation scheme will benefit the operation of the M40 Junction 10 interchange. The sensitivity of the M40 Junction 10 receptor is high, and the magnitude of change is low. Following implementation of the mitigation scheme, the significance effect on driver delay at M40 J10 is minor beneficial.

Non-Motorised User Delay and Amenity

- 8.7.41 The Development itself will provide a safe environment for pedestrians and cyclists by delivering connectivity between the Sites with a footway/cycleway on the B4100 and signalised crossing facilities on the A43 southern arm. The Development also provides bus stops in the Western Site and in B4100 laybys served by a signalised crossing to the East. It will also deliver crossings of the A43 and the B4100 (West) in order to access the local services.
- 8.7.42 The effects of Development traffic are permanent on pedestrians and cyclists. The sensitivity of the B4100 receptor is low and magnitude of change is high (in terms of HGV). The sensitivity of the A43 is high, and magnitude of change is low. Therefore, the significance of the effect is minor beneficial.

Accidents and Safety / Fear and Intimidation

- 8.7.43 The Site access junctions will be designed in accordance with relevant design guidance presenting safe additions to the highway. The adjacent network (A43, M40 J10) is congested but does not exhibit a poor accident history.
- 8.7.44 The effects of the combined traffic from the Western and Eastern Developments will be permanent on road users. The sensitivity of the A43 receptor is high and magnitude of change is low. The sensitivity of the B4100 is negligible and the magnitude of change is high (in terms of HGVs).
- 8.7.45 The mitigation Scheme at the A43/Baynards Green will introduce traffic signal control, reducing elements of vehicle conflict and controlled pedestrian crossing. The significance of effect is minor beneficial.

Mitigation, Monitoring and Residual Effects

- 8.7.46 Framework Travel Plans (FTP) for the Development are included in Appendix 8.2. The FTP set a target of reducing single occupancy staff and visitor travel by 10% against the baseline levels, currently established by local census journey to work figures. A key part of the sustainable transport strategy is based upon providing high-quality non-car options to Bicester, where the most significant component of the future workforce is expected to be drawn from.
- 8.7.47 The details of the measures to be included in the detailed Travel Plans will be established with the occupiers in due course. The Travel Plans provide a formal monitoring and review process against which the Development is evaluated, including review of bus usage and frequency.
- 8.7.48 Based on the available information to date no significant residual adverse effects remain from the Development proposals following the implementation these measures.
- 8.7.49 In connection with the applications, a number of measures that are not required to mitigate any significant effects of the proposals but are potential options for enhancement.
- 8.7.50 These include the provision of a shared footway/cycleway on the B4100 running from the Eastern Site access through to the existing active travel infrastructure close to the A4095; upgraded bus waiting areas within Bicester to incorporate cycle parking facilities; further

increased frequency to the bus service; and enhanced access to the PROW network. The effects of these potential enhancements are not assessed.

8.8 Cumulative Effects

- 8.8.1 The cumulative effects for the committed development schemes and infrastructure schemes listed at paragraph 8.3.17 are inherent within the assessment.
- 8.8.2 The Tritax Scheme site abuts the Eastern Development. A standalone cumulative appraisal of the Development and the Tritax Scheme has been undertaken. The applicant teams have been working collaboratively, such that the traffic parameters; the appraisal methodology; and the elements of the transport mitigation strategy are largely common to each application.
- 8.8.3 The effects of this cumulative development scenario generated traffic on the wider network are considered to allow an investigation of the potential effects which may result. Tables 8.16 and 8.17 set out the cumulative percentage change for total traffic and HGVs respectively with reference to the AADT flows in 2026.

Table 8.16: Percentage Daily (AADT) Traffic Increase for Development and Tritax Scheme

Link Ref.	Road	% change relative to 2026 incl. committed development (AADT)
1	B4100 West	21%
2	B4100 between Western Access and A43	63%
3	B4100 between A43 and Eastern Access	52%
4	B4100 East (between AL + Tritax)	44%
5	B4100 East	20%
6	B4100 (Bicester)	19%
7	A4095	7%
8	A4095	4%
9	A43 between B4100 and Padbury junction	10%
10	B430	7%
11	M40 South	2%
12	M40 North	1%
13	A43 North of B4100	10%
14	M40 Northbound On	9%
15	M40 Southbound Off	7%
16	M40 Southbound On	6%
17	M40 Northbound Off	5%
18	M40 Overbridge	7%
19	MSA to Padbury	7%
20	A43 North of A421	7%
21	A421	11%

Table 8.17: Percentage Daily (AADT) HGV Traffic Increase for Development and Tritax Scheme

Link Ref.	Road	% change relative to 2026 reference case (AADT)
1	B4100 West	0%
2	B4100 between Western Access and A43	603%
3	B4100 between A43 and Eastern Access	411%
4	B4100 East (between AL + Tritax)	316%
5	B4100 East	31%
6	B4100 (Bicester)	31%
7	A4095	25%
8	A4095	0%
9	A43 between B4100 and Padbury junction	32%
10	B430	11%
11	M40 South	8%
12	M40 North	2%
13	A43 North of B4100	22%
14	M40 Northbound On	22%
15	M40 Southbound Off	20%
16	M40 Southbound On	23%
17	M40 Northbound Off	20%
18	M40 Overbridge	22%
19	MSA to Padbury	21%
20	A43 North of A421	16%
21	A421	45%

- 8.8.4 Table 8.16 indicates that the B4100 links between the A43 and the Western Development access, and the Tritax Scheme access are expected to experience percentage traffic increases exceeding 30% in this scenario. Table 8.17 indicates that the same sections are expected to experience increased HGV flows exceeding 30%.

Severance

- 8.8.5 There is no requirement for future users of the Western Development to cross the B4100 to access the Site although it is plausible that employees may wish to visit the roadside services. A pedestrian refuge is therefore proposed. The sensitivity of the receptor is low and the magnitude of change is high (in terms of HGV movement). The significance of the cumulative effect is considered to be minor adverse. A new signalised crossing on the B4100 between the Eastern Development access and the Tritax Scheme site access will provide for access to future bus laybys.

Driver Delay

- 8.8.6 Peak hour cumulative 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 6 of the TA Addendum.
- 8.8.7 The assessments show that the site accesses of the respective developments will operate satisfactorily in all modelled scenarios with modest queuing and minimal delay during the peak hour periods. The sensitivity of the B4100 is low and the magnitude of change is high between the accesses (in terms of HGV movement). The A43/B4100 mitigation scheme delivers capacity benefits over and above that required to mitigate the Development. The significance of the cumulative effect is considered to be minor beneficial on road users on the B4100 between the Western Site and the A43 Baynards Green roundabout.

A43/B4100 junction and M40 Junction 10

- 8.8.8 The sensitivity of the receptor is high, and the magnitude of change is low. The proposed works at the A43/B4100 roundabout will fully mitigate the impact of the cumulative development in this scenario and provide significant operational capacity and pedestrian/cycle benefits. The significance of effect on driver delay at the A43/B4100 junction is considered to be moderate beneficial.
- 8.8.9 The highway network implications of the mitigation scheme will benefit the operation of the M40 Junction 10 interchange. The sensitivity of the M40 Junction 10 receptor is high, and the magnitude of change is low. Following implementation of the mitigation scheme, the residual effect on driver delay at M40 J10 is considered to be minor beneficial.

Pedestrian and Cyclist Delay and Amenity

- 8.8.10 The cumulative development considered in this scenario will provide a safe environment for pedestrians and cyclists by delivering connectivity between the sites with a footway/cycleway on the B4100 and signalised crossing facilities on the A43 southern arm. It also makes provision for bus stops in the Western Development for a scheduled bus service and on B4100 laybys served by a signalised crossing to the east. Crossings of the A43 and the B4100 (West) would also be delivered in order to access the local services.

- 8.8.11 The effects of cumulative development traffic in this scenario are permanent on pedestrians and cyclists. The sensitivity of the B4100 receptor is low and magnitude of change is high (in terms of HGVs). The sensitivity of the A43 is high, and magnitude of change is low. Therefore, the significance of the effect is considered to be minor beneficial.

Accidents and Safety / Fear and Intimidation

- 8.8.12 The site access junctions will be designed in accordance with relevant design guidance presenting safe additions to the highway. The adjacent network (A43, M40 J10) is congested but does not exhibit a poor accident history.
- 8.8.13 The effects of the combined traffic from the cumulative schemes in this scenario will be permanent on road users. The sensitivity of the A43 receptor is high and magnitude of change is low. The sensitivity of the B4100 is low and the magnitude of change is high (in terms of HGVs). Therefore without mitigation the significance of the effect is considered to be minor adverse.
- 8.8.14 The mitigation scheme at the A43/ Baynards Green will introduce traffic signal control, reducing elements of vehicle conflict and controlled pedestrian crossing. The residual effect is considered to be minor beneficial.

West Northants (Aynho)

- 8.8.15 Beyond the previously agreed geographical scope of the transport appraisal, consultation feedback on the applications was received relating to the villages of Aynho and Croughton.
- 8.8.16 A series of traffic counts were commissioned as set out at paragraph 8.3.10, and the traffic forecasting extended. The potential effects of the Development and the combined cumulative effects of the Development plus the Tritax Scheme is summarised for each link in Table 8.18.

Table 8.18: Daily Development Traffic Impact on Aynho and Croughton

	2022	2026	Percentage Site Traffic Increase			
	Average Annual Daily Traffic	Average Annual Daily Traffic	Western AL	Eastern AL	Combined AL	AL + TSL
Aynho (B4100 Croughton Road)						
All traffic	10,905	11,144	1%	2%	3%	4%
HGVs	567	579	<1%	<1%	<1%	<1%
Croughton (B4031 West of village)						
All traffic	3,888	3,973	1%	<1%	1%	1%
HGVs	151	154	<1%	<1%	<1%	<1%

Mitigation, Monitoring and Residual Effects

8.8.17 The mitigation strategy developed for the Development has been prepared in close liaison with the Tritax Scheme. Almost all elements have been common to both parties and mitigating the cumulative effects has dictated the components of the strategy. No additional mitigation is considered necessary in this scenario, although additional measures may come forward in the future, as set out in paragraph 8.5.16. As these are currently unknown, potential effects cannot yet be quantified.

Table 8.18: Summary of Residual Effects

Effect	Receptor (Sensitivity)	Geographic Scale	Temporal Scale	Magnitude of Impact		Mitigation and Monitoring	Residual Effect		
<i>Construction</i>									
Severance in Communities	Low	Local	Temporary	Enabling Works	Negligible	Enabling Works	Adherence to CTMP.	Enabling Works	Negligible
				Eastern Development	Negligible	Eastern Development		Eastern Site	Negligible
				Western Development	Negligible	Western Development		Western Site	Negligible
				Development	Negligible	Development		Development	Negligible
Driver Delay	Low	Local	Temporary	Enabling Works	Negligible	Enabling Works		Enabling Works	Negligible
				Eastern Development	Negligible	Eastern Development		Eastern Development	Negligible
				Western Development	Negligible	Western Development		Western Development	Negligible
				Development	Negligible	Development		Development	Negligible
Non-Motorised User Delay Amenity	Low	Local	Temporary	Enabling Works	Negligible	Enabling Works		Enabling Works	Negligible
				Eastern Development	Negligible	Eastern Development		Eastern Development	Negligible
				Western Development	Negligible	Western Development		Western Development	Negligible
				Development	Negligible	Development		Development	Negligible
Fear and Intimidation	Low	Local	Temporary	Enabling Works	Negligible	Enabling Works	Enabling Works	Negligible	
				Eastern Development	Negligible	Eastern Development	Eastern Development	Negligible	

Effect	Receptor (Sensitivity)	Geographic Scale	Temporal Scale	Magnitude of Impact		Mitigation and Monitoring		Residual Effect						
Accidents and Safety	Low	Local	Temporary	Western Development	Negligible	Western Development		Western Development	Negligible					
				Development	Negligible	Development		Development	Negligible					
				Enabling Works	Negligible	Enabling Works		Enabling Works	Negligible					
				Eastern Development	Negligible	Eastern Development		Eastern Development	Negligible					
				Western Development	Negligible	Western Development		Western Development	Negligible					
				Development	Negligible	Development		Development	Negligible					
				<i>Completed Development</i>										
				Severance in Communities	Low	Local		Permanent	Eastern Development	Low	Eastern Development	Localised pedestrian/cycle infrastructure on the B4100 and crossings on B4100 and A43.Higher Frequency Bus Services.	Eastern Development	Negligible
Western Development	B4100 (West) High	Western Development	Localised pedestrian/cycle infrastructure on the B4100 and crossings on B4100 and A43. Diverted Bus Services.				Western Development		Negligible					
Development	B4100 (West) High	Development					Development		Negligible					
Driver Delay	A43/B4100 junction and M40 Junction 10 (High) B4100 (Low)	Local	Permanent	Eastern Development	Low	Eastern Development	Baynards Green Works	Eastern Development	Moderate Beneficial					
				Western Development	B4100 (West) High	Western Development	Improvement Scheme; Higher Frequency Bus Service. Travel Plans.	Western Development	Moderate Beneficial					
				Development	B4100 (West) High	Development		Development	Moderate Beneficial					

Effect	Receptor (Sensitivity)	Geographic Scale	Temporal Scale	Magnitude of Impact		Mitigation and Monitoring		Residual Effect	
Non-Motorised User Delay Amenity	Low	Local	Permanent	Eastern Development	Low	Eastern Development	Localised pedestrian/cycle infrastructure on the B4100 and crossings on B4100 and A43. Higher Frequency Bus Service.	Eastern Development	Minor Beneficial
				Western Development	B4100 (West) High	Western Development	Localised pedestrian/cycle infrastructure on the B4100 and crossings on B4100 and A43. Diverted and enhanced Bus Service.	Western Development	Minor Beneficial
				Development	B4100 (West) High	Development		Development	Minor Beneficial
Fear and Intimidation	Low	Local	Permanent	Eastern Development	Low	Eastern Development	Localised pedestrian/cycle infrastructure on the B4100 and crossings on B4100 and A43. Higher frequency bus service.	Eastern Development	Negligible
				Western Development	B4100 (West) High	Western Development	Localised pedestrian/cycle infrastructure on the B4100 and crossings on B4100 and A43. Diverted and enhanced bus service.	Western Development	Minor Adverse
				Development	B4100 (West) High	Development		Development	Minor Adverse
Accidents and Safety	A43/B4100 junction and M40 Junction 10 (High)			Eastern Development	Low	Eastern Development	Baynards Green Works Improvement Scheme; Localised pedestrian/cycle infrastructure on the B4100 and crossings on	Eastern Development	Minor Beneficial
	B4100 (Low)			Western Development	B4100 (West) High	Western Development		Western Development	Minor Beneficial
				Development	B4100 (West) High	Development		Development	Minor Beneficial

Effect	Receptor (Sensitivity)	Geographic Scale	Temporal Scale	Magnitude of Impact		Mitigation and Monitoring		Residual Effect	
							B4100 and A43. Bus Service Commitment; Travel Plans		
<i>Cumulative Effects (Development and Tritax Scheme scenario)</i>									
Severance in Communities	Low	Local	Permanent	Low - High		A new signalised crossing on the B4100 between the Eastern Development access and the Tritax Scheme site access.		Minor Adverse	
Driver Delay	Low	Local	Permanent	High		Baynards Green Works Improvement Scheme; Higher Frequency Bus Service. Travel Plans.		Minor Beneficial	
Pedestrian and Cyclist Delay and Amenity	A43/B4100 junction (Low) M40 Junction 10 (High)	Local	Permanent	A43/B4100 junction (High) M40 Junction 10 (Low)		Localised pedestrian/cycle infrastructure on the B4100 and crossings on B4100 and A43. Higher Frequency Bus Service.		Minor Beneficial	
Accidents and Safety / Fear and Intimidation	B4100 junction (Low) A43 Junction (High)	Local	Permanent	B4100 junction (High) A43 Junction (Low)		The mitigation scheme at the A43/ Baynards Green will introduce traffic signal control, reducing elements of vehicle conflict and controlled pedestrian crossing.		Minor Beneficial	

References

- 1 Ministry of Housing, Communities and Local Government (MHCLG), 2021. National Planning Policy Framework, December 2023.
- 2 Oxfordshire County Council (OCC), July 2022, Oxfordshire Local Transport and Connectivity Plan 2022-2050.
- 3 Cherwell District Council (CDC), 2016, Cherwell Local Plan (2011-2031) adopted July 2015, updated December 2016.
- 4 Mid Cherwell Neighbourhood Plan (2018-2031), adopted 2019.
- 5 Institute of Environmental Management and Assessment (IEMA), Assessment Guidelines on the Environmental Assessment of Road Traffic (the 'IEMA Guidelines').
- 6 Department for Transport (DfT), 2009, Guidance on Transport Assessment (withdrawn).
- 7 Department for Transport (DfT), various, Design Manual for Roads and Bridges (DMRB, various), including CD109, CD123, CD116, CD143, CD169, and CD195.
- 8 Department for Transport (DfT), various, Design Manual for Roads and Bridges LA104 Environmental Assessment and Monitoring.
- 9 Health and Safety Executive (HSE), 2009, The Carriage of Dangerous Goods in the UK