

# **APPENDIX 6.1 TRANSPORT ASSESSMENT**

# LAND AT NORTH WEST BICESTER

## TRANSPORT ASSESSMENT VOL 1 - REPORT

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# 1 INTRODUCTION

## 1.1 APPOINTMENT

1.1.1 Velocity Transport Planning (VTP) has been appointed by Firethorn Trust (The Applicant) to prepare this Transport Assessment (TA) providing highways and transport planning advice for an outline planning application relating to the development of up to 530 dwellings on land which forms part of the North West Bicester Eco Town development located in Oxfordshire in England.

1.1.2 The outline planning application is described as follows:

*“Outline planning application for residential development (within Use Class C3), open space provision, access, drainage and all associated works and operations including but not limited to demolition, earthworks, and engineering operations, with the details of appearance, landscaping, layout and scale reserved for later determination.”*

## 1.2 SITE LOCATION

1.2.1 The Application Site comprises two separate development parcels totalling approximately 22ha of uncultivated agricultural land. It is located to the north of Bicester within the administrative area of Cherwell District Council (CDC) and within Oxfordshire County Council (OCC), which are the local highway authority.

1.2.2 The permitted Exemplar Scheme lies to the south east and north east of the Application Site, which separates the two development parcels. The larger development parcel is located to the west and the smaller development parcel to the east. The Western Parcel of land is currently bound by uncultivated agricultural land to the north west, a water course and wooded area to the south, whilst the remaining boundary along the eastern and northern edges is the as-built Exemplar Scheme. The Eastern Parcel of land is bound by the B4100 Banbury Road to the north east, Home Farm to the south east, with the remaining boundaries along the south west and north west being the as-built Exemplar Scheme.

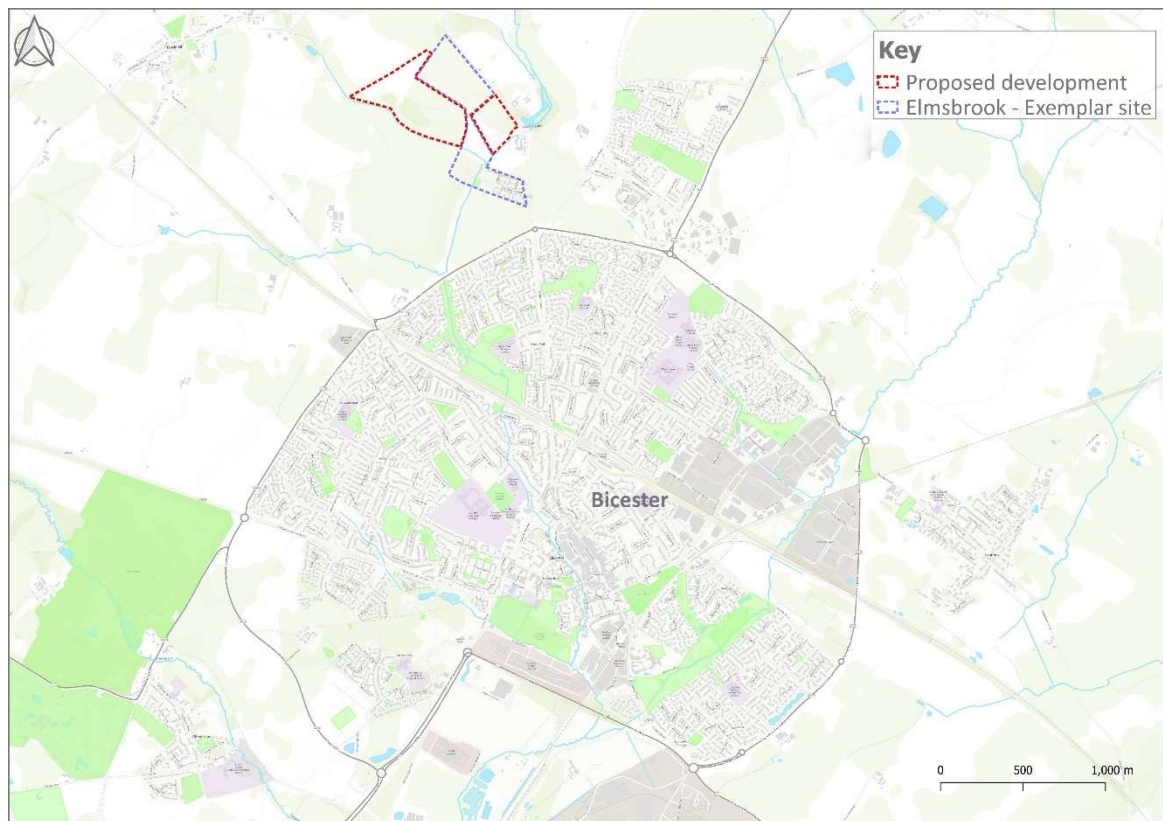
1.2.3 The Western Parcel is to be accessed from the permitted Exemplar Scheme via three locations. A new priority junction will be provided to the south of the existing bus gate, which separates Phases 1 & 2 of the Exemplar Scheme from Phases 3 & 4. A second priority junction will be provided to the north of the bus gate. Finally, a further access will be provided at a point approximately mid-way along the northern boundary of the Western Parcel, which will be via an extension into the Application Site from Phase 4 of the Exemplar Scheme. A number of further pedestrian and cycle links are to be provided from the Western Parcel that will provide additional links to the surrounding areas and the existing Exemplar Scheme.

1.2.4 The Eastern Parcel is to be accessed from an extension to an existing access road that is located to the south of the existing bus gate. A number of further pedestrian and cycle links are to be provided from the Eastern Parcel that will provide additional links to the surrounding areas and the existing Exemplar Scheme.

1.2.5 The Site is located to the north of Bicester and is presented within the wider context of the local area within **Figure 1-1**.



Figure 1-1: The Application Site within the Wider Context of Bicester



- 1.2.6 Mosaic Urban Design & Masterplanning have prepared an Illustrative Masterplan, which provides further details of the proposed site layout. Whilst it is acknowledged that this TA and associated documents have been prepared in support of an outline planning application, as access is a matter for consideration as part of the outline planning application, the location and form of the proposed site access points presented on this Illustrative Masterplan are considered to be fixed.
- 1.2.7 It is appropriate to note that at the time of preparing this outline planning application, the internal road network of the permitted Exemplar Scheme has not yet been adopted by OCC in their role as local highway authority. As such, the planning application boundary includes an element of the existing local road network within the permitted Exemplar Scheme to ensure that the proposed means of access to the Application Site will extend to the limit of the existing adopted highway, which is identified as being the existing priority junction of Charlotte Avenue with the B4100 Banbury Road to the south east and the existing priority junction of Braeburn Avenue with the B4100 Banbury Road to the north of the Application Site.
- 1.2.8 This Illustrative Masterplan is included at **APPENDIX A** of this Transport Assessment (TA), an extract of which is included at **Figure 1-2**.





Figure 1-2: Proposed Site Layout Plan



### 1.3 NORTH WEST BICESTER ECO TOWN

- 1.3.1 The Application Site forms part of the wider North West Bicester Eco Town proposals. The North West Bicester Eco Town is a zero-carbon sustainable development that will provide a new community of up to 6,000 homes, new employment opportunities, and attractive amenities on 390 hectares of land to the north west of Bicester.
- 1.3.2 The overall Eco Town scheme is guided by the North West Bicester Masterplan, which is detailed within CDC's North West Bicester Supplementary Planning Document (adopted February 2016). This SPD expands upon Policy Bicester 1 of the adopted CDC Local Plan 2011-2031 and sets out the key principles of the development, such as land use distribution and the overall access strategy by all modes of transport. It provides a guide for all future planning applications across the site and establishes a framework against which these planning applications will be judged by the local planning authority.
- 1.3.3 In summary, the Bicester Eco Town will provide through the North West Bicester Masterplan:
- Up to 6,000 "true" zero carbon homes;
  - Employment opportunities providing at least 4,600 new jobs;
  - Up to four primary schools and one secondary school;
  - 40% green space, half of which will be public open space;
  - Pedestrian and cycle routes;
  - New links under the railway line and to the existing town;
  - Local centres to serve the new and existing communities; and
  - Integration with existing communities.





- 1.3.4 The initial phase of development at the North West Bicester Eco Town is referred to as the Exemplar Scheme (Planning Ref 10/01780/hybrid), locally known as Elmsbrook, which was granted planning permission on the 10<sup>th</sup> of July 2012 for 393 residential units on land adjacent to this Application Site. The Exemplar Scheme is close to completion and once finished, will comprise the 393 residential units, a primary school, a mix of commercial uses including an Eco-Business Centre, and a community centre.
- 1.3.5 Following the grant of planning permission for the Exemplar Scheme, a further two outline planning applications were submitted to CDC, representing additional phases of the Eco Town Development. These are summarised as follows:
- Outline Application 1: Land North of the Railway Line (Planning Ref 14/01384/OUT)
 

*“Development comprising redevelopment to provide up to 2600 residential dwellings (Class C3), commercial floorspace (Class A1 - A5, B1 and B2), social and community facilities (Class D1), land to accommodate one energy centre, land to accommodate one new primary school (Up to 2FE) (Class D1) and land to accommodate the extension of the primary school permitted pursuant to application (reference 10/01780/HYBRID). Such development to include provision of strategic landscape, provision of new vehicular, cycle and pedestrian access routes, infrastructure, ancillary engineering and other operations“*
  - Outline Application 2: Land South of Railway Line (Planning Ref 14/01641/OUT)
 

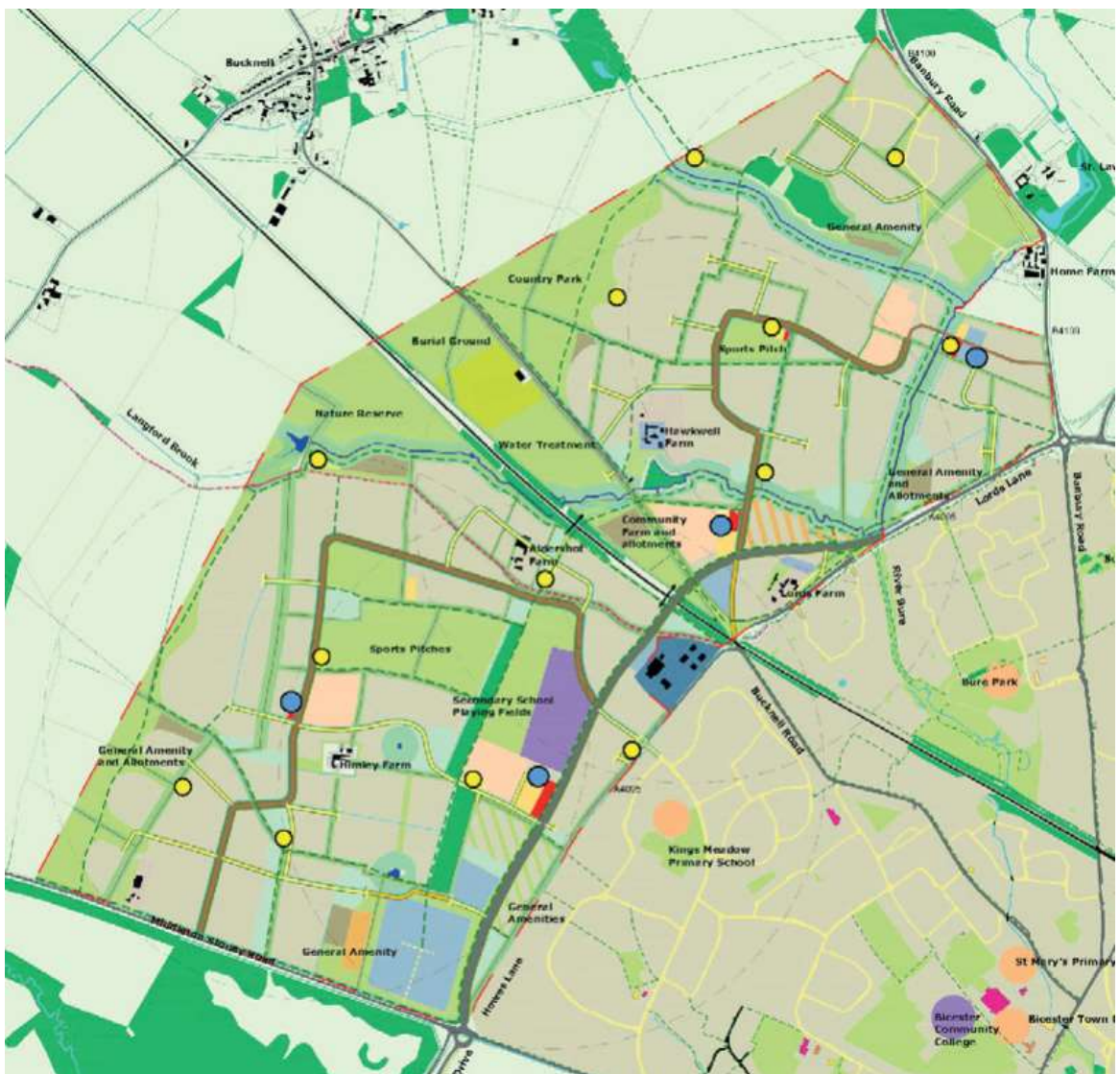
*“Amendment to Outline Application - To provide up to 900 residential dwellings (Class C3), commercial floor space (Class A1-A5, B1 and B2), leisure facilities (Class D2), social and community facilities (Class D1), land to accommodate one energy centre and land to accommodate one new primary school (up to 2 FE) (Class D1), secondary school up to 8 FE (Class D1). Such development to include provision of strategic landscape, provision of new vehicular, cycle and pedestrian access routes, infrastructure, ancillary engineering and other operations“*
- 1.3.6 Both of these outline planning applications have a resolution to grant, subject to the agreement of Section 106 contributions. It is key to note that the majority of the Application Site was included within the assessment of the Application 1 proposals, which excluded the permitted Exemplar Scheme.
- 1.3.7 In addition to the further outline applications for the Eco Town Development, an infrastructure application was submitted to CDC for the following:
- Infrastructure Application: New Highway Aligned with Howes Lane, Bicester (Planning Ref 14/01968/F)
 

*“Construction of new road from Middleton Stoney Road roundabout to join Lord's Lane, east of Purslane Drive, to include the construction of a new crossing under the existing railway line north of the existing Avonbury Business Park, a bus only link east of the railway line, a new road around Hawkwell Farm to join Bucknell Road, retention of part of Old Howes Lane and Lord's Lane to provide access to and from existing residential areas and Bucknell Road to the south and associated infrastructure.”*
- 1.3.8 The infrastructure application for the A4095 Strategic Highway Link was granted planning permission by CDC on the 21<sup>st</sup> of August 2019.



- 1.3.9 Transport Infrastructure proposals set out within the Outline Application 1 and Outline Application 2 schemes, combined with the proposals for the re-alignment of the A4095 Strategic Highway Link to the west of Bicester, which will pass through the Eco Town, provide the associated mitigation measures that will help underpin the delivery of the wider North West Bicester Masterplan, as detailed within the SPD.
- 1.3.10 An Interim Access and Travel Strategy was prepared to support the wider North West Bicester Masterplan, which was published in 2014 and prepared by Hyder. This report sets out how the Eco Town will be accessed by all modes of travel, the measures proposed to meet Eco Town targets and how the anticipated impacts of travel generated by the wider development were assessed.
- 1.3.11 The wider North West Bicester Eco Town is presented at Figure 10 of the adopted SPD and **Figure 1-3** presents an extract of this for ease of reference.

**Figure 1-3: North West Bicester Masterplan**



## 1.4 PROPOSED DEVELOPMENT

- 1.4.1 The Proposed Development is to provide up to 530 residential units over the two identified parcels of land. For ease of reference, these are referred to as the Western Parcel, which is proposed to deliver approximately 75% of the proposed development (approximately 400 dwellings) and the Eastern Parcel, which is effectively the same parcel of land that was considered for the Home Farm planning application (Planning Ref 18/00484/OUT) and is proposed to deliver the remaining 25% of the proposed development (approximately 130 dwellings).
- 1.4.2 The general vehicular access arrangements have been identified as being at 3 locations to the Western Parcel and a single location to the Eastern Parcel with additional pedestrian connection points at appropriate locations along the boundary of both parcels. Further details of the site access arrangements are set out within Section 6 of this TA.

## 1.5 CONSULTATION

- 1.5.1 Prior to the submission of this outline planning application, a pre-application meeting was held on the 13<sup>th</sup> of November 2020 with CDC and OCC. Following this initial pre-application meeting, VTP issued a Transport Assessment Scoping Report dated the 27<sup>th</sup> of November 2020 to OCC and attended a scoping meeting with OCC on the 11<sup>th</sup> of December 2020. A copy of the TA Scoping Note and the associated OCC response is contained at **APPENDIX B**.
- 1.5.2 Following this, a series of technical meetings have been held with CDC, OCC and Highways England (HE) to develop the scope and methodology for the assessment work. The most recent of these technical meetings was held on the 12<sup>th</sup> of March 2021 and a copy of the meeting note is included at **APPENDIX B**.
- 1.5.3 There have been a number of consultations on the scheme with various interested parties, including Bicester Town Council, Caversfield Parish Council, Elmsbrook Community Organisation, and Gagle Brook Primary school.

## 1.6 DOCUMENT STRUCTURE

- 1.6.1 The remainder of this TA is structured as follows:
- **Section 2** reviews relevant national and local transport planning policy;
  - **Section 3** sets out the site in context to the North West Bicester Masterplan;
  - **Section 4** summarises the existing local provision for walking, cycling, and public transport services;
  - **Section 5** describes the local highway network within the vicinity of the site and broader surrounding area;
  - **Section 6** describes the Proposed Development;
  - **Section 7** forecasts future travel demand generated by the Proposed Development;
  - **Section 8** assesses the impact of the development traffic on the local junctions;
  - **Section 9** models the existing development junctions, as agreed with the highway authorities;
  - **Section 10** summarises management plans and mitigation proposals; and
  - **Section 11** provides a summary and conclusions.
- 1.6.2 This TA is supported by a Framework Residential Travel Plan.



## 2 POLICY CONTEXT

### 2.1 INTRODUCTION

2.1.1 This section sets out details of relevant transport-related policies. The local and national policy focuses on encouraging development that maximises the use of sustainable travel modes in areas with good public transport connectivity and reduces the need to travel by car.

2.1.2 In planning terms, North West Bicester was formally allocated for development in July 2015 as part of the North West Bicester statutory development plan.

### 2.2 NATIONAL PLANNING POLICY FRAMEWORK (2019)

2.2.1 The National Planning Policy Framework (NPPF) was updated in June 2019 and sets out the Government's planning policies for England and how these should be applied and provides a framework within which locally prepared plans for housing and other development can be produced. At its heart, the NPPF sets out a presumption in favour of sustainable development (Paragraph 11).

2.2.2 The NPPF promotes sustainable transport. It notes that transport issues should be considered at the earliest stages of development proposals.

2.2.3 Chapter 9 of the revised NPPF sets out the requirements for promoting sustainable transport advising that significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. The NPPF advises that planning policies should support an appropriate mix of uses across an area, and within larger scale sites, to minimise the number and length of journeys needed for employment, shopping, leisure, education and other activities.

2.2.4 The NPPF does not set parking standards but notes in Paragraph 105 that parking policies should take into account:

- a) *the accessibility of the development;*
- b) *the type, mix and use of development;*
- c) *the availability of and opportunities for public transport;*
- d) *local car ownership levels; and*
- e) *the need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles.*

2.2.5 In Paragraph 108 the NPPF sets out that when assessing applications for development, it should be ensured that:

- a) *appropriate opportunities to promote sustainable transport modes can be or have been taken up, given the type of development and its location;*
- b) *safe and suitable access to the site can be achieved for all users; and*
- c) *any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.*



2.2.6 Paragraph 109 of the NPPF states 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” and in this context that planning applications 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.*

2.2.7 Paragraph 111 of the NPPF requires all developments that will generate significant amounts of movement to provide a travel plan and be supported by a transport assessment so that the likely impacts of the proposal can be assessed.

## 2.3 NATIONAL PLANNING PRACTICE GUIDANCE (MARCH 2014)

2.3.1 In March 2014, the Department for Communities and Local Government (as it was then) launched the National Planning Practice Guidance (PPG) to provide web-based guidance in support of the NPPF. The NPPG details the overarching principles on Transport Assessments and Travel Plans.

2.3.2 Paragraph 15 (Ref. ID: 42-015-20140306) of the PPG notes that the scope and level of detail of a Transport Assessment will vary from site to site. It lists matters to be considered when setting the scope of a Transport Assessment including:

- Information about the proposed development, site layout and access arrangements for all modes of transport;
- Information about the neighbouring uses, amenity and character, and existing functional classification of the nearby road network;
- Data about existing public transport provision, including the provision and frequency of services and proposed public transport changes;
- A qualitative and quantitative description of the travel characteristics of the proposed development, including movements across all modes of transport that would result from the development and in the vicinity of the site;
- An assessment of trips from all directly relevant committed development in the area (i.e. development that there is a reasonable degree of certainty will proceed within the next three years);
- Data about current traffic flows on links and at junctions, including by different modes of transport and the volume and type of vehicles within the study area and identification of critical links and junctions on the road network;





- An analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent three-year period (or five-year period if the proposed site has been identified as within a high accident area);
- An assessment of the likely associated environmental impacts of transport related to the development, particularly in relation to proximity to environmentally sensitive areas (such as air quality management areas or noise sensitive areas);
- Measures to improve accessibility (such as provision/ enhancement of nearby footpath and cycle path linkages) where these are necessary to make the development acceptable in planning terms;
- A description of parking facilities in the area and the parking strategy of the development;
- Ways of encouraging environmental sustainability by reducing the need to travel; and
- Measures to mitigate the residual impacts of development such as improvements to the public transport network, introducing walking and cycling facilities, physical improvements to existing roads.

## 2.4 PLANNING POLICY STATEMENT – ECO TOWNS

2.4.1 Planning Policy Statements (PPS) set out the national policies on different aspects of spatial planning in England before all, inclusive of the PPS on Eco Towns, were superseded by the NPPF. It is noted that the Eco-Towns PPS provided the standards any eco-town had to adhere to before it was cancelled for all areas excluding north west Bicester on the 05<sup>th</sup> of March 2015.

2.4.2 The PPS on Eco Towns supplements PPS1 which outlines the overarching planning policies on delivery of sustainable development through the planning system. It sets out the objectives for sustainable development in the form of large-scale development providing more homes while responding to the impact of climate change as well as a wide range of standards for the delivery of zero carbon development, homes, transport, jobs and other components of an Eco Town.

2.4.3 The objectives for planning set out in the PPS1 supplement were:

- *To promote sustainable development by ensuring that eco-town achieve sustainability standards significantly above equivalent levels of development in existing towns and cities by setting out a range of challenging and stretching minimum standards for their development, in particular by:*
- *providing a good quality of green spaces of the highest quality in close proximity to the natural environment*
- *offering opportunities for space within and around dwellings*
- *promoting healthy and sustainable environments through `Active Design 2` principles and healthy living choices*
- *enabling opportunities for infrastructure that makes best use of technologies in energy generation and conservation in ways that are not always practical or economic in other developments*
- *delivering a locally appropriate mix of housing type and tenure to meet the needs of all income groups and household size, and*
- *taking advantage of significant economies of scale and increases in land value to deliver new technology and infrastructure such as for transport, energy and community facilities.*





- *To reduce the carbon footprint of development by ensuring that households and individuals in eco-towns are able to reduce their carbon footprint to a low level and achieve a more sustainable way of living.*

- 2.4.4 The PPS1 supplement states that Eco Towns should develop unique characteristics by responding to the opportunities and challenges of their location and community aspirations and that all Eco Town proposals should meet the standards as set out in the PPS1 supplement or any standards in the development plan which are of a higher standard. The document identifies at Appendix A that the North West Bicester site allocation will be required to meet the Eco Town standards.
- 2.4.5 Policy ET11 – Transport in the PPS1 supplement identifies the standards for transport in an Eco Town. It states that *“Travel in eco-towns should support people’s desire for mobility whilst achieving the goal of low carbon living. The town should be designed so that access to it and through it gives priority to options such as walking, cycling, public transport and other sustainable options, thereby reducing residents’ reliance on private cars, including techniques such as filtered permeability. To achieve this, homes should be within ten minutes’ walk of (a) frequent public transport and (b) neighbouring services. The provision of services within the eco-town may be co-located to reduce the need for individuals to travel by private car and encourage the efficient use of the transport options available.”*
- 2.4.6 PPS1 states that Travel Plans are required to be included with any planning application with respect to Eco Town development and should demonstrate:
- *How the town’s design will enable at least 50 per cent of trips originating in eco-towns to be made by non-car means, with the potential for this to increase over time to at least 60 per cent;*
  - *Good design principles, drawing from Manual for Streets, Building for Life, and community travel planning principles;*
  - *How transport choice messages, infrastructure and services will be provided from ‘day one’ of residential occupation; and*
  - *How the carbon impact of transport in the eco-town will be monitored, as part of embedding a long-term low-carbon approach to travel within plans for community governance.*
- 2.4.7 PPS1 also states that where an Eco Town is close to an existing higher order settlement, in this case Bicester, planning applications should also demonstrate:
- *Options for ensuring that key connections around the eco-town do not become congested as a result of the development, for example by extending some aspects of the travel plan beyond the immediate boundaries of the town; and*
  - *Significantly more ambitious targets for modal share than the 50 per cent (increasing to 60 per cent over time) mentioned above and for the use of sustainable transport.*
- 2.4.8 Eco Towns should be *“designed in a way that supports children walking or cycling to school safely and easily. There should be a maximum walking distance of 800m from homes to the nearest school for children aged under 11.”*

## 2.5 OXFORDSHIRE LOCAL TRANSPORT PLAN 4 2015-2031 (2016)

- 2.5.1 The Oxfordshire Local Transport Plan (LTP4) ‘Connecting Oxford’ includes objectives and policies for improving transport in Oxfordshire to 2031. These objectives and policies look at, in addition to other issues, minimising the need to travel and encouraging active travel.



- 2.5.2 The focus of the LTP4 is to attract and support economic investment and growth, deliver transport infrastructure, tackle congestion and improve quality of life. In Connecting Oxfordshire Volume 1, it also sets out policy priorities for parts of Oxfordshire less affected by the Knowledge Spine; therefore, it provides a basis for securing transport improvements to support development across the whole of Oxfordshire.
- 2.5.3 LTP4 has been developed with 3 over-arching transport goals.
- **Goal 1** – *To support jobs and housing growth and economic vitality;*
  - **Goal 2** – *To reduce emissions, enhance air quality and support the transition to a low carbon economy; and*
  - **Goal 3** – *To protect and enhance Oxfordshire’s environment and improve quality of life.*
- 2.5.4 To achieve these transport goals, 10 objectives for transport have been developed:
- **Goal 1:** Supporting *Growth* and economic vitality:
    - *Maintain and improve transport connections to support economic growths and vitality across the county;*
    - *Make most effective use of all available transport capacity through innovative management of the network;*
    - *Increase journey time reliability and minimise end-to-end public transport journey times on main routes;*
    - *Develop a high quality, innovative and resilient integrated transport system that is attractive to customers and generates inward investment;*
  - **Goal 2:** Reduce *emissions*, enhance air quality and support the transition to a low carbon economy:
    - *Minimise the need to travel;*
    - *Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive;*
    - *Influence the location and layout of development to maximise the use and value of existing and planned sustainable transport investment;*
    - *Reduce per capita carbon emissions from transport in Oxfordshire in line with UK government targets;*
  - **Goal 3:** Improving *Quality of Life*:
    - *Mitigate and wherever possible enhance the impact of transport on the local built, historic and natural environment; and*
    - *Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties, and enabling inclusive access to jobs, education, training and services.”*
- 2.5.5 A number of policies in the LTP4 are important to Eco Town developments:
- Policy 03 – Oxfordshire County Council will support measures and innovation that make more efficient use of transport network capacity by reducing the proportion of single occupancy car journeys and encouraging a greater proportion of journeys to be made on foot, by bicycle, and/or by public transport;



- Policy 19 – Oxfordshire County Council will encourage the use of travel associated with healthy and active lifestyle;
- Policy 20 – Oxfordshire County Council will carry out targeted safety improvements on walking and cycling routes to school, to encourage active travel and reduce pressure on school bus transport;
- Policy 22 – Oxfordshire County Council will promote the use of low or zero emission transport, including electric vehicles and associated infrastructure where appropriate; and
- Policy 23 – Oxfordshire County Council will work to reduce the emissions footprint of transport assets and operation where economically viable, taking into account energy consumption and the use of recycled materials.

2.5.6 *Connecting Oxfordshire Volume 8 Part ii* outlines the key strategies for particular local areas within Oxfordshire. The Bicester Area Strategy outlines 4 key aims for Bicester with respect to the county.

- **BIC1 -Improve access and connections between key employment and residential sites and the strategic transport system by:**
  - Continuing to work with Highways England to improve connectivity to the strategic highway;
  - Investing a new motorway junction as part of the Garden Town work;
  - Reviewing key county road links out of Bicester, including those that cross the county boundary;
  - Investigating options for infrastructure improvements and bus priority;
  - Delivering effective peripheral routes around the town;
  - Investigating solutions to East- West Rail Phase 2 challenges; and
  - Supporting the proposal to secure a potential freight interchange at Graven Hill and working with the district and developers to achieve this.
- **BIC2 – We will work to reduce the proportion of journeys made by private car though implementing the Sustainable Transport Strategy by:**
  - Significantly improving public transport connectivity with key areas of economic growth within Oxfordshire;
  - Improving Bicester’s bus services along key routes and providing improved public transport infrastructure;
  - Enhancing pedestrian, cycle and public transport links to the Bicester Village Station, Bicester North Station and key employment sites;
  - Implementing Bicester town centre highway modifications;
  - The Bicester Sustainable Transport Strategy has identified a number of new sections of urban pedestrian and cycle routes; and
  - Progressing a Wayfinding Project for Bicester with the aim of improving signage across the town.
- **BIC3 – We will increase people’s awareness of the travel choices available in Bicester, which should improve public health and wellbeing by:**



- Undertaking travel promotions and marketing measures;
  - Developing a coordinated parking strategy in partnership with Cherwell District Council;
  - Discourage undesirable routing of traffic by developing a signage strategy;
  - Providing coordinated information and advance notice of construction closures and traffic related issues;
  - Providing new approaches to transport through the North-West Bicester development site.
- **BIC4 - To mitigate the cumulative impact of development within Bicester and to implement the measures identified in the Bicester Area Transport Strategy Oxfordshire Council will:**
    - Secure strategic transport infrastructure contributions from all new development;
    - Secure sustainable transport measures through all major new development. For large new or expanded housing development sites, the following principles for cycle provision apply:
      - a) Developers must demonstrate through master planning how their site has been planned to make cycling convenient and safe for cyclists travelling to, from, within and through the site
      - b) Site road network and junctions must be constructed with cycling in mind, including providing space for cycling on main/ spine roads through the provisions of, as a minimum, advisory cycle lane
      - c) We will ask developers to fund cyclability, so that the local user view is incorporated into new cycle facilities
    - Secure strategic public transport contributions for new or improved public transport services as well as bus stop infrastructure to supply sustainable development.

## 2.6 CHERWELL LOCAL PLAN 2011-2031

- 2.6.1 The Cherwell Local Plan 2011-2031 Part 1 sets out how Cherwell will grow and change in the period up to 2031. Consultation on the Local Plan was undertaken between July 2020 - September 2020 to inform and review of the adopted Cherwell Local Plan. The policies of the existing adopted Local Plan will be reviewed in the next three-year period with further stages of consultations to follow.
- 2.6.2 The Local Plan demonstrates the importance of the North West Bicester Eco Town to Cherwell as a whole through Policy Bicester 1. It states that “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 on the former Eco Towns PPS.” The policies map, as well as the inset map for Policy Bicester 1: North West Bicester Eco Town both identify the location and the area of the Eco Town scheme and development proposals.
- 2.6.3 Any development proposals as part of the Eco Town scheme should ensure the below:
- *A zero-carbon development as defined in the Eco Towns PPS and Eco Bicester One Shared Vision;*
  - *Delivery of a high quality local environment;*
  - *Climate Change adaption: Eco Town standards are met on water, flooding, green infrastructure and biodiversity;*



- *Homes that achieve at least Level 5 of the Code of Sustainable Homes;*
- *Employment: at least 3,000 jobs within the plan period (approximately 1,000 jobs on B use class land on the site within the plan period). An economic strategy will be required and there should be local sourcing of labour, including providing apprenticeships during construction;*
- *Transport: at least 50% of trips originating from the development to be made by means of other than car;*
- *promotions of healthy lifestyles;*
- *Provision of local services and facilities;*
- *Green Infrastructure and biodiversity: 40% of the total gross site area will be provided as green space of which at least half will be public open space;*
- *Sustainable management of waste.*

2.6.4 Policy Bicester 1 also states that “a masterplan for the North west Bicester site will be required to demonstrate how proposals will achieve the standards set out in the Eco Towns PPS and Eco Bicester One Shared Vision. Development will be considered on the basis of a masterplan for the whole development area, to ensure that development takes place in an integrate, coordinated and planned way, whilst recognising that phasing of development within the overall masterplan strategy will be required. It will integrate with and complement the function and urban form of Bicester and reinforce the role of Bicester town centre as the primary retail and service centre.” Policy Bicester 1 ensures that the Eco Town scheme will be designed as an exemplar which incorporates best practice and provide a showcase for sustainable living.

2.6.5 Policy Bicester 1: North West Bicester Eco Town

- *Development Area: 390 hectares*
- *Development Description: A new zero carbon mixed use development including 6,000 homes will be developed on a land identified at North West Bicester.*
- *Planning permission will only be granted for development at North West Bicester in accordance with a comprehensive masterplan for the whole area to be approved by the Council as part of a North West Bicester Supplementary Planning Document.*

2.6.6 The council will expect the North West Bicester Masterplan and applications for planning permission to meet the following requirements which relate to transport and movement:

- *Proposals should enable residents to easily reduce their carbon footprint to a low level and live low carbon lifestyles.*
- *Layout of development that enables a high degree of integration and connectivity between new and existing communities.*
- *A layout that maximises the potential for walkable neighbourhoods.*
- *New footpaths and cycleways should be provided that link with existing network, the wider urban area and community facilities with a legible hierarchy of routes to encourage sustainable modes of travel.*



- *A layout which makes provisions for and prioritises non-car modes and encourages a modal shift from car use to other forms of travel.*
- *Infrastructure to support sustainable modes of transport will be required including enhancement of footpath and cycle path connectivity with the town centre, employment and rail stations.*
- *Measures to ensure the integration of the development with the remainder of the town including measures to address movement across Howes Lane and Lords Lane.*
- *Good accessibility to public transport services should be provided for, including the provision of a bus route through the site with buses stopping at the railway stations and at new bus stops on the site.*
- *Contributions to improvements to the surrounding road networks, including mitigation measures for the local and strategic highway network, consistent with the requirement of the Eco-Town PPs to reduce reliance on the private car, and to achieve a high level of accessibility to public transport services improvements to facilities for pedestrians and cyclists and the provision and implementation of a Travel plan to maximise connectivity with existing development;*
- *Provision of a Transport Assessment;*
- *Measures to prevent vehicular traffic adversely affecting surrounding communities; and*
- *Significant green infrastructure provision, including new footpaths and cycleways, enhancing green modal accessibility beyond the site to the town centre and Bicester Village Railway station, and adjoining developments;*
- *Public open space to form a well-connected network of green areas suitable for formal and informal recreation.*

2.6.7 All proposals for development across the Eco Town site will be required to meet the Eco Town development standards set out in Policy Bicester 1: North West Bicester Eco Town and make a degree of contribution towards transport mitigation measures.

## 2.7 NORTH WEST BICESTER SUPPLEMENTARY PLANNING DOCUMENT (2016)

2.7.1 The North West Bicester Supplementary Planning Document (SPD) expands upon Policy Bicester 1 of the adopted Cherwell Local Plan 2011-2031. The SPD provides further detail to the policy and means of implementing the strategic allocation at North West Bicester.

2.7.2 The SPD sets out the minimum standards to be achieved by proposed development across the Eco Town. It is encouraged that developers exceed these standards where possible and will be expected to apply new higher standards that arise during the life of the document and reflect up to date best practice and design principles.

2.7.3 The key elements of the SPD are:

- The North West Bicester Masterplan;
- Development and design principles aimed at delivering a high quality scheme;
- Requirements for addressing sustainable design;
- Requirements relating to the scheme's delivery and implementation, and





- Requirements which should be met at the detailed planning application stage and beyond to ensure adequate and consistent approached to quality and delivery.

2.7.4 It is recognised that the SPD supports the implementation of Policy Bicester 1 of the Cherwell Local Plan 2011-2031 Part 1 and will be a material consideration in determining planning applications on the North west Bicester site.

2.7.5 The SPD will ensure that the vision for the Eco Town will be successful delivery; it has taken key elements for the North West Bicester Masterplan and vision documents. The Masterplan illustrates the key components of the development strategy for the site and includes the landscape framework that underpins the master planning providing connectivity and structure to the site.

2.7.6 The SPD sets a number of development principles and requirements for the Eco Town.

2.7.7 Development Principle 6 – Transport, Movement & Access states that the following key consideration for movement should be addressed in planning applications:

- Reducing car dependency;
- Prioritising walking and cycling;
- Generating activity and connectivity;
- Highways and transport improvements; and
- Bus priority and links and infrastructure including RTI

2.7.8 The SPD states that planning applications are required to illustrate the permeability of the site

2.7.9 A key consideration of the SPD is that all planning applications for development in the Eco Town should include a Travel Plan which demonstrates how the design of the development will enable at least 50% of all trips from the development to be made by non-car modes of travel with a potential increase to 60% by 2020. The SPD also states that all planning applications need to be supported by a Transport Assessment which addresses the guidance in the SPD.

## 2.8 ADDITIONAL LOCAL DESIGN GUIDANCE USED TO INFORM THE PROPOSALS

2.8.1 The following local design guidance has been considered in the preparation of this TA and the design of the masterplan.

- Cherwell District Council Residential Design Guide SPD (2018)
- Oxfordshire County Council “Residential Road Design Guide” (2<sup>nd</sup> Edition 2015)
- Oxfordshire County Council “Parking Standards for New Residential Developments” (2011)
- Oxfordshire County Council “Oxfordshire Walking Design Standards” (2017)
- Oxfordshire County Council “Oxfordshire Cycling Design Standards” (2017)
- Oxfordshire County Council “Bicester Local Cycling and Walking Infrastructure Plan” (Sept 2020)



## 2.9 POLICY COMPLIANCE

2.9.1 The objectives for the Site have taken account of prevailing national and local policies. The development proposal will seek to fulfil the objectives of the policy documents noted in this chapter by providing an accessible and sustainable environment for pedestrians, cyclists, public transport users and vehicles on the highway network.



# 3 SITE CONTEXT AND ACCESS

## 3.1 INTRODUCTION

3.1.1 This section provides a description of the Application Site within the North West Bicester Masterplan with regards to its access opportunities. It provides an overview of the highway infrastructure proposed for the wider Eco Town scheme through the North West Bicester Masterplan and describes how the infrastructure provided as part of the Exemplar Scheme will provide the opportunities to access the development by sustainable modes of transport.

## 3.2 NORTH WEST BICESTER MASTERPLAN ACCESS OBJECTIVES

3.2.1 The existing context of the site is being shaped by the delivery of the wider Eco Town development proposals and accordingly the delivery of this wider scheme is directly informative to the future access and movement provision at the Application Site. The broader North West Bicester Masterplan Movement and Access Framework is illustrated in **APPENDIX C** of this report.

3.2.2 The North West Bicester Masterplan sets out the following with respect to transport development principles across the Eco Town:

*“The overall design is centred around four urban and four rural areas interconnected through green ‘lanes’ which include both direct and leisure routes, so everyone can get from home to work, and play, in no time at all.*

*There will be plenty of opportunities to reduce travel by car and minimise CO2 emissions, because every home will be within 400 metres of a bus stop and within an easy ten-minute walk of local shops and primary schools. With so many beautiful and spacious green lanes, it will be easy for everyone to cycle to work in and around NW Bicester. And for those who travel a little further, there will also be improved cycle and bus routes into Bicester that can connect into improved rail connections to Oxford and beyond. Real time travel information in every home will make use of public transport more accessible.*

*The network of rural footpaths and cycleways and a series of bus only road links will mean public transport is more rapid and frequent; enabling people to make sustainable travel choices. With a car club and network of charging points for electric vehicles, for those that do still require cars for longer journeys, we will inspire the use of hybrid or electric vehicles”.*

3.2.3 The following strategic access objectives for the wider site are also set out within The North West Bicester Masterplan and these are:

- *Ensure future access and connectivity works with the surrounding area and the new proposed development;*
- *Ensure there are good connections within the development between all facilities;*
- *Ensure the development is well connected to the rest of Bicester;*
- *Enable a frequent and high-quality bus service to be provided;*



- Give priority to strong walking, cycling and bus connections; and
- Minimise traffic going through existing communities.

3.2.4 The North West Bicester Masterplan outlines that walking and cycling routes through the Eco Town will be high-quality, with all-weather surfacing, well-lit, and easily maintained. Where possible, these will be segregated from the carriageways and cyclists and pedestrians will also be segregated to avoid conflicts. Safety will be ensured by providing routes of appropriate widths and with numerous crossing points.

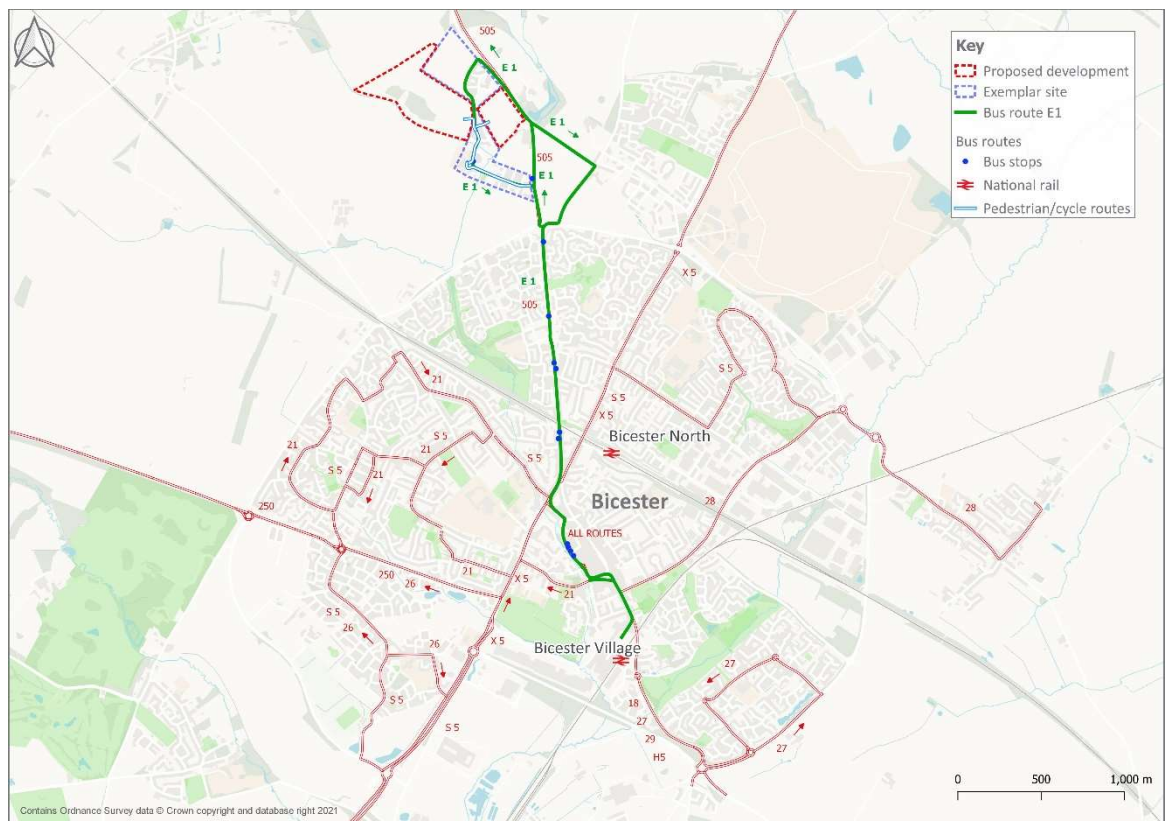
3.2.5 It is proposed that walking and cycling routes across the Eco Town will be split into two distinct categories: `Direct Routes` will act as commuting routes to enable direct and fast access to key local employment areas, schools, local centres and hubs; while `Leisure Routes` will be introduced to provide links to local centres, employment sites and public transport interchanges.

3.2.6 The E1 bus service currently operates within the Exemplar Scheme and provides a direct link from the Application Site to the town centre and local facilities to encourage bus travel.

### 3.3 SUSTAINABLE ACCESS OPPORTUNITIES

3.3.1 The opportunities to access the Application Site by sustainable modes of transport are linked to the Exemplar Scheme and the wider infrastructure proposed through the North West Bicester Masterplan. Sustainable access opportunities to the site are shown within **Figure 3-1**.

Figure 3-1: Site Accessibility



# 4 BASELINE TRANSPORT CONDITIONS

## 4.1 INTRODUCTION

- 4.1.1 This section sets out the baseline review of existing transport conditions and accessibility surrounding the site, including assessing the local provision for walking, cycling, bus and rail services within the local area and the wider town of Bicester.
- 4.1.2 OCC have prepared the Draft Bicester Local Cycling and Walking Infrastructure Plan (LCWIP), which is a 10-year plan (2020 to 2031) to *improve* and *increase* cycling and walking in the town. The 10-year period coincides with the end of the CDC Local Plan period, 2031 which forms the basis of the LCWIP targets and scheme delivery proposals. The Bicester LCWIP will form part of the future Local Transport Plan update and will set out a programme of measures to improve cycling and walking within the area. It is considered appropriate to ensure that the Bicester LCWIP will be embedded within the transport and planning policies to ensure that these sustainable means of transport are encouraged, particularly as the area is expected to see considerable population and development growth over the plan period.
- 4.1.3 The LCWIP was presented to the Bicester Town Council Cabinet on the 15<sup>th</sup> of September 2020 with a recommendation for approval. The report to Cabinet and the associated LCWIP Plan of Bicester and the immediate surroundings is included at **APPENIDX D** of this TA.

## 4.2 PEDESTRIAN NETWORK

- 4.2.1 The National Travel Survey identifies that walking is the most frequent travel mode used for short-distance trips (within 1 mile/1.6 km). Therefore, the infrastructure that supports travel on foot is vital to promote sustainable and active travel as a viable alternative to short car trips.
- 4.2.2 The Chartered Institute of Highways and Transportation (CIHT) published the document '*Guidelines for providing for journeys on foot*' (2000), which suggests acceptable walking distances to local facilities. A summary of the guidelines is presented in **Table 4-1**.

**Table 4-1: Summary of the CIHT '*Guidelines for providing for journeys on foot*' (2000)**

CIHT GUIDELINES	DISTANCE		WALKING TIME	
	Commuting, Walking to School and Recreational	Other Non-Commuter Journeys	Commuting, Walking to School and Recreational	Other Non-Commuter Journeys
Desirable	500m	400m	7 mins	5 mins
Acceptable	1,000m	800m	13 mins	10 mins
Considered	2,000m	1,200m	25 mins	15 mins

- 4.2.3 The CIHT '*Guidelines for planning for public transport in developments*' (1999) suggests that the maximum walking distance to bus stops from a development should be no more than 400m. Nonetheless this document also states that having access to direct and simple bus routes which link to key facilities is more important than the 400m distance.





4.2.4 As mentioned in Section 1, the Application Site is currently private land in the form of uncultivated agricultural land and therefore there is no formal means of access to the site for the public and there are no pedestrian footways present within the site. Access by foot and by bicycle to the Application Site is provided through the Exemplar Scheme via appropriate and adequate pedestrian footways located along both sides of Charlotte Avenue. There is a footway with a minimum width of 2.0m provided on either side of the carriageway from its junction with the B4100 Banbury Road with uncontrolled pedestrian crossing points provided with dropped kerbs and tactile paving located at regular intervals. This established network of footways through the Exemplar Scheme will provide access from the Application Site to the Gagle Brook Primary School, nearby facilities and amenities, and local bus stops all within the existing Exemplar Scheme.

4.2.5 An example of the existing pedestrian footways and associated environment within the adjacent Exemplar Scheme in close proximity to the Gagle Brook Primary School, is shown within **Figure 4-1**.

**Figure 4-1: Pedestrian Environment within the Exemplar Scheme**



4.2.6 There are numerous pedestrian routes that connect the existing Exemplar Scheme with Bicester Town centre and other destinations. **Figure 4-3** shows that the majority of facilities and amenities in Bicester are located within a radius of 3km from the centre of the Application Site.

4.2.7 Outside of the Exemplar Scheme, a shared footway/cycleway is provided alongside the northbound carriageway of B4100 Banbury Road which provides direct access on foot and by cycle into the Exemplar Scheme in the south-eastern corner of the smaller parcel of land and linking to the existing footway alongside the southern section of Charlotte Avenue.



- 4.2.8 A signalised toucan crossing is provided on the B4100 Banbury Road to the south of the existing access to the Exemplar Scheme at Charlotte Avenue (as shown in **Figure 4-2**) to enable pedestrians and cyclists to safely cross the carriageway and head eastwards onto another shared footway/cycleway route alongside the A4095 which is separated from the carriageway by a grass verge. The shared footway/cycleway continues south into Bicester town centre where further pedestrian and cyclist connections are provided towards the existing residential areas to the south and Bicester North Railway Station.

**Figure 4-2: Existing Toucan Crossing on the B4100 Banbury Road**



- 4.2.9 There is currently no footway provision along either side of the B4100 Banbury Road to the north of the existing junction with Charlotte Avenue, with the exception of a pedestrian link to the existing northbound bus stop on the B4100 Banbury Road located approximately 50m north of the existing priority junction. As such, footway provision within the existing Exemplar Scheme does not extend beyond the northern limit of the site at the junction of Braeburn Avenue with the B4100 Banbury Road.
- 4.2.10 Local amenities accessible by foot are shown within **Figure 4-3** and are set out within **Table 4-2**.

Figure 4-3: Local Amenities in proximity to the Application Site

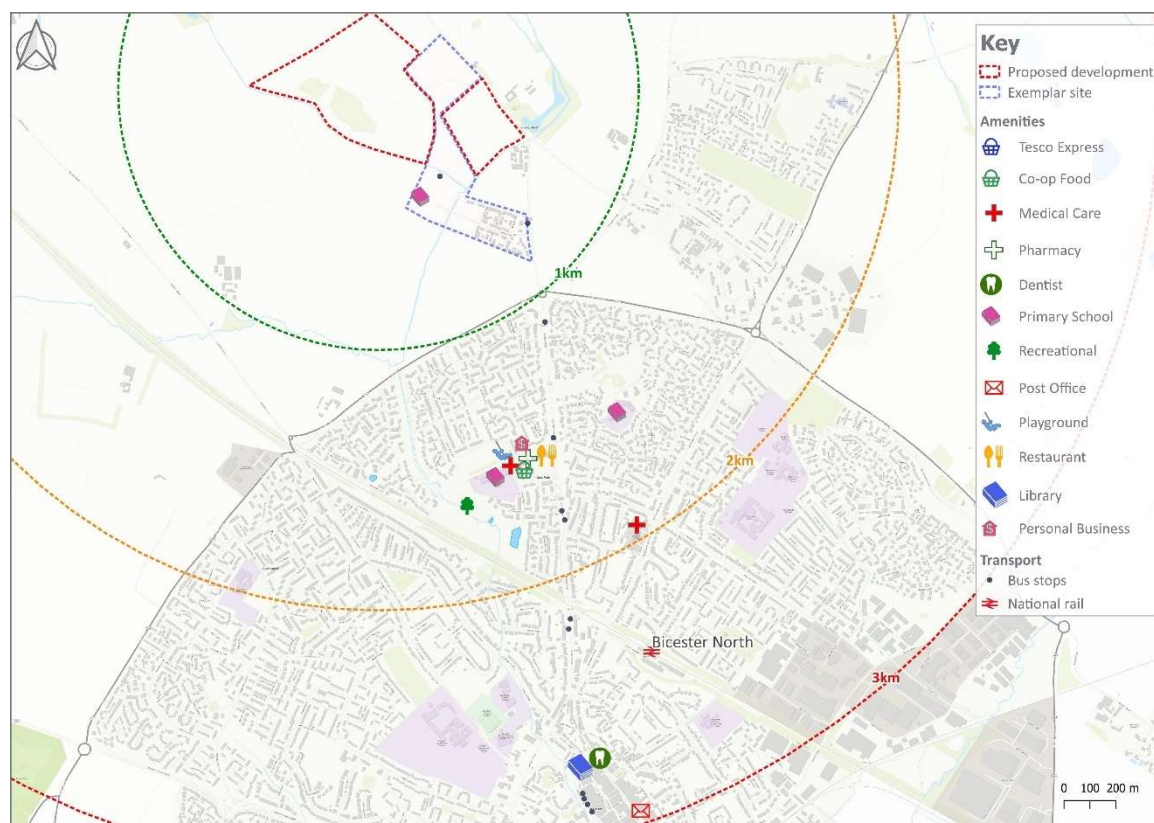


Table 4-2: Amenities in Proximity to the Application Site

AMENITIES	WALKING DISTANCE (M)	TIME (MINS)
Grange Brook Primary School	300	4
Bicester Play Area	650	8
Tesco Express	850	11
Jardines Pharmacy	1,000	12
North Bicester Surgery	1,000	12
Bure Park Nature Reserve	1,500	18
Bicester Post Office	2,000	30

### 4.3 CYCLE NETWORK

- 4.3.1 Cycling has the potential to substitute for short car trips, particularly those less than five kilometres in length. However, many people will choose to cycle longer distances.
- 4.3.2 As already identified, the Application Site is currently not open to the public and there is no existing cycle infrastructure within the Application Site to facilitate cycle movement. The layout of the neighbouring Exemplar Scheme offers strong sustainable connections to the Application Site with easy movement by bicycle including shared vehicle/bicycle lanes due to the nature of the existing highway network within the Exemplar Scheme, which is within a 20mph zone.
- 4.3.3 Charlotte Avenue and Braeburn Avenue form the primary Estate Road through the Exemplar Scheme providing a link from the B4100 Banbury Road at the south east to the north west of the existing development, which includes traffic calming features to ensure that the 20mph speed limit is adhered to through the Exemplar Scheme.

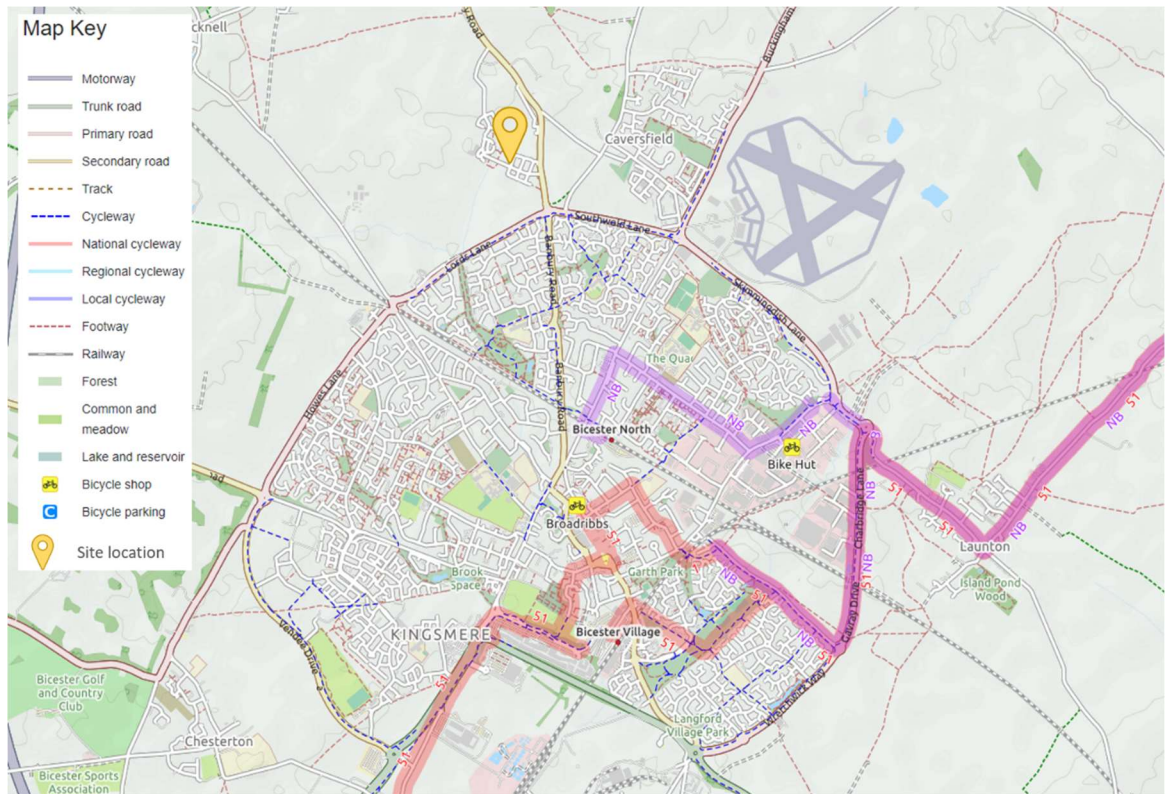


- 4.3.4 Following the consultation with key stakeholders and local parties, it was requested that pedestrian and cycle links from the nearby residential area of Caversfield to the Gagle Brook Primary School be considered to establish if improvements could be made as part of the development proposals. To this extent, two routes were reviewed from a common point within Caversfield at the junction of Fringford Road with Aunt Ems Lane.
- 4.3.5 Fringford Road has a kerbed pedestrian footway that runs along the eastern side of the road for its full length from Caversfield to the junction with the A4095. This footway is considered to be wide enough to accommodate young cyclists that might wish to travel to the Primary School without the need to use the carriageway. From the junction of Fringford Road with the A4095, a dedicated shared footway/cycleway is signed along the northern side of the A4095 which links with the provision on the B4100 Banbury Road towards the Exemplar Scheme, Gagle Brook Primary School, and the Application Site.
- 4.3.6 Aunt Ems Lane is a single carriageway road that is derestricted along the majority of its length with a couple of access points to agricultural land and a single private dwelling. There is no footway provision and there is limited width provided along the verges due to established hedgerows. As the road is derestricted, vehicle speeds could reach as much as 60mph and therefore it is not considered that Aunt Ems Lane currently provides a sensible route for cyclists to access the Gagle Brook Primary school from Caversfield. It is also worth noting that there is currently no footway provision along the B4100 Banbury Road from the junction of Aunt Ems Lane to either the Charlotte Avenue or Braeburn Avenue junctions with the B4100 Banbury Road that provide access to the Exemplar Scheme.
- 4.3.7 From the common point at the junction of Fringford Road with Aunt Ems Lane, the distance along Fringford Road by way of the existing shared footway/cycleway and via the existing Toucan crossing facility on the B4100 Banbury Road south of the Charlotte Avenue junction to the Gagle Brook Primary School, is identified as being 1.15km. The entire route is off carriageway and considered to be a safe and practical route for young children wishing to cycle to the primary school.
- 4.3.8 From the same point, the distance along Aunt Ems Lane and via the B4100 Banbury Road to the Charlotte Avenue junction and on to the Gagle Brook Primary School, is identified as being 1.25km, which is slightly longer. However, this alternative route is not considered to be safe or practical for use by young children due to the potentially high vehicle speeds along Aunt Ems Lane, the lack of segregated provision on Aunt Ems Lane and the B4100 Banbury Road, and the lack of a suitable crossing facility over the B4100 Banbury Road in close proximity to the Charlotte Avenue junction.
- 4.3.9 Cycleways in Bicester are shown within **Figure 4-4**. National Cycle Route 51 provides long distance connections between towns and connects east Bicester with Oxford. Local cycle Route NB provides a connection between east Bicester and Bicester Village Rail Station. Local cycleways close to the development site provide connections to nearby destinations.
- 4.3.10 There is a shared pedestrian and cycle route from the Exemplar Scheme southwards along the northbound carriageway of the B4100 Banbury Road. An existing Toucan crossing located approximately 120m south of the junction of Charlotte Avenue with the B4100 Banbury Road provides a safe means of crossing the B4100 Banbury Road. This off-carriageway shared footway/cycleway links the Exemplar Scheme to Bicester town centre and provides a continuous segregated route to Bicester North Railway Station.





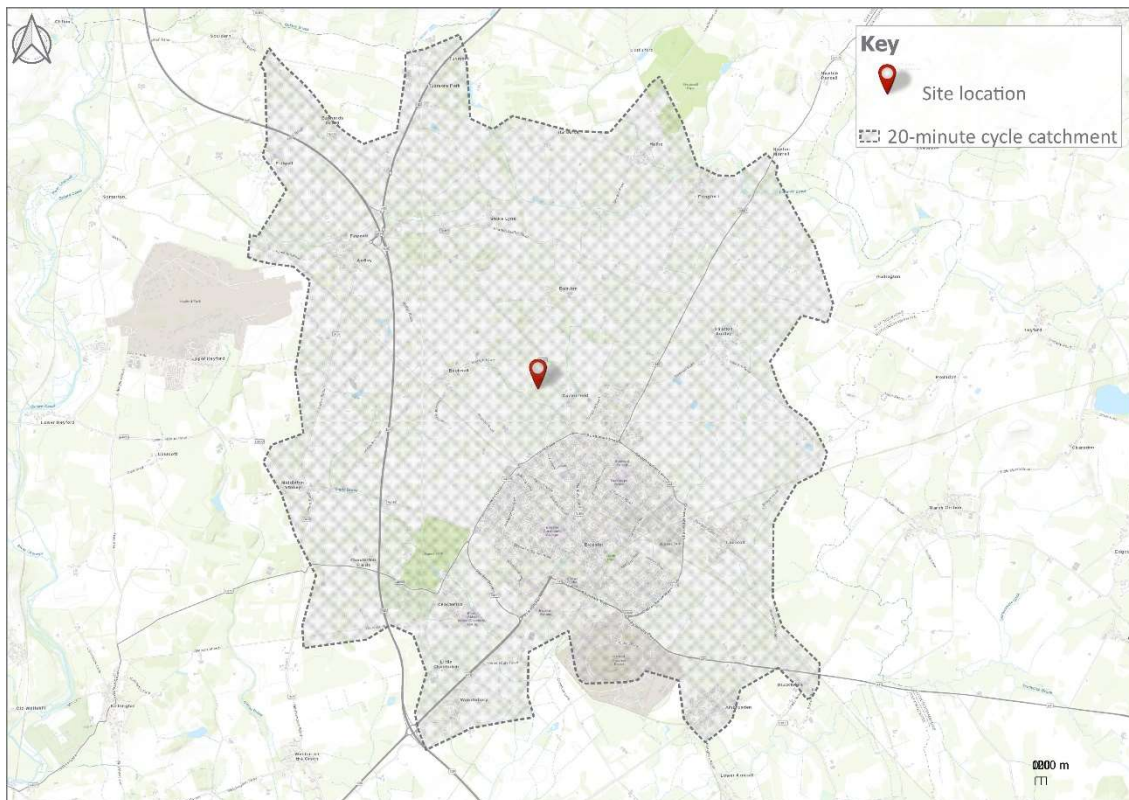
Figure 4-4: Local Cycle Routes



4.3.11 **Figure 4-5** highlights the extent of the site’s accessibility to the surrounding area by bicycle. It demonstrates that Bicester as a whole is accessible by bike within a 20-minute cycle journey. Other destinations within a 20-minute cycle journey are Caversfield, Bucknell and Stoke Lyne.



Figure 4-5: 20-Minute Cycle Catchment around the Application Site



Source: <https://traveltime.com/>

- 4.3.12 The adjacent Exemplar Scheme has provided a lot of the infrastructure required to promote walking and cycling from the Application Site, such as wide footways, traffic calming measures on Charlotte Avenue and Braeburn Avenue, and cycle parking at all community facilities, including the primary school. A Brompton bike storage facility and Sheffield stands are provided to the rear of the Sales & Marketing Suite located near the junction of Charlotte Avenue with the B4100 Banbury Road and an example is shown within **Figure 4-6**.

Figure 4-6: Existing Brompton Storage &amp; Sheffield Stands



- 4.3.13 A copy of the cycle network in and around the town of Bicester and as set out within the Draft Bicester LCWIP, is included at **APPENDIX D** of this TA. Whilst this does not clearly identify the segregated (off-carriageway) pedestrian and cycle link from the Exemplar Scheme to Bicester North Rail Station, it has been established that there is a continuous segregated link from the existing Exemplar Scheme that is expected to be included within the final version of the LCWIP.

#### 4.4 BUS NETWORK

- 4.4.1 The E1 bus service currently provides a connection from the Exemplar Scheme to Bicester town centre. **Figure 3-1** presents the E1 bus service and other local routes and **Table 4-3** provides details of these routes, including peak hour frequencies.

Table 4-3: Bus Service Frequencies

SERVICE NO.	ROUTE	PEAK HOUR FREQUENCY (SERVICES PER HOUR)	
		AM	PM
E1	Elmsbrook Braeburn Avenue – <b>Elmsbrook Gagle Brook School</b> – Bicester Manorsfield Road – Bicester Village Station – Bicester Manorsfield Road – Elmsbrook Charlotte Avenue	1	2
505	Banbury – Fartinghoe – Brackley – Elmsbrook – Bicester – Bicester Village station	1	1
18	<b>Bicester</b> (Manorsfield Road and Bicester North Station) – Steeple Claydon - Buckingham	2	1
22	Bicester town centre – Fields Farm – Langford – Southwold – <b>Caversfield</b> – Bure Park	2	1
23	<b>Bicester Town Centre</b> – Fields Farm – Langford – Southwold	1	1
25A	<b>Bicester Town Centre</b> – Middleton – Upper Heyford – Kirtlington – Hampton Poyle – Gosford - Oxford City Centre	1	1
S 5	Ambrosden – <b>Bicester town centre</b> – Bicester Village – Gosford – Summertown – Oxford City Centre	3	3
X 5	Buckingham – Caversfield – <b>Bicester Town Centre</b> – Oxford City Centre	2	1





- 4.4.2 As the E1 bus service passes through the Exemplar Scheme, entering via the Braeburn Avenue junction with the B4100 Banbury Road, passing along the primary Estate Road through the development by way of the existing bus gate, and exiting via the Charlotte Avenue junction with the B4100 Banbury Road.
- 4.4.3 There are a number of existing bus stops located within the Exemplar Scheme. To the north, a bus stop is located on Braeburn Avenue approximately 130m south of the junction with the B4100 Banbury Road. This existing bus stop includes an area of hard standing for waiting passengers and a solar-powered electronic timetable. The location of this bus stop ensures that the majority of both parcels of the Application Site are within a 400m distance of a bus stop, with the exception of the westernmost edge of the Western Parcel and the southernmost edge of the Eastern Parcel.
- 4.4.4 A further bus stop is located on Charlotte Avenue directly outside the Gagle Brook Primary School. This existing bus stop includes a shelter and a Sheffield stand for cycle parking. The location of this bus stop ensures that the southernmost edge of the Eastern Parcel of the Application Site is within a 400m distance of a bus stop. **Figure 4-7** presents the existing bus stop facilities that are within close proximity of the Application Site.

**Figure 4-7: Bus Stops within the Exemplar Scheme**



- 4.4.5 As the E1 bus service connects with other bus services at key points of interchange within Bicester town centre, including the Bicester North and Bicester Village Railway Stations, connections can be made to other bus services that serve the wider area, including services to Oxford and Buckingham.
- 4.4.6 An existing bus gate has been constructed along the Estate Road within the Exemplar Scheme. This bus gate is in the form of a road narrowing to only 4.0m width and is intended to prevent private cars from passing between Phases 1 & 2 and Phases 3 & 4 of the Exemplar Scheme but does accommodate on-carriageway cyclists. To the south of the bus gate, the Estate Road is identified as being Charlotte Avenue and to the north, Braeburn Avenue.
- 4.4.7 As the Estate Road has yet to be adopted, this bus gate is not currently enforceable and whilst visiting the site on a number of occasions, private cars were observed passing through this bus gate. It is expected that prior to the occupation of all the dwellings on the Application Site, the internal road network of the Exemplar Scheme will have been adopted by OCC and at that point any vehicles that do pass through this bus gate will be subject to enforcement.
- 4.4.8 **Figure 4-8** presents the northern end of the existing bus gate and it is evident that a camera is expected to be installed which will automatically capture the number plate of any vehicle that does not adhere to the restricted access arrangement, resulting in a Fixed Penalty Notice being issued.

Figure 4-8: Existing Bus Gate within the Exemplar Scheme



## 4.5 RAIL NETWORK

4.5.1 Bicester town has two rail stations, Bicester North and Bicester Village. Bicester North station is located approximately 2km to the southeast of the site and Bicester Village station is situated approximately 3.1km southeast of the site. The rail service provision for both rail stations is summarised within **Table 4-4**.

Table 4-4: Rail Services Frequencies

STATION	ROUTE	JOURNEY TIME (APPROXIMATE)	FREQUENCY	BUS CONNECTIONS
Bicester North	London Marylebone	60 minutes	4 per hour	8, 22, 23, S5, X5
	Birmingham	20 minutes	2 per hour	
Bicester Village	Oxford	30 minutes	1 every 2 hours	E1

4.5.2 As **Table 4-4** shows, there are regular rail services throughout the day to a range of destinations. Central London can be reached within a 60-minute train ride from Bicester North with a frequency of four trains per hour. Employment, recreational and shopping opportunities within Oxford are available within a 30-minute rail journey from Bicester Village station.



- 4.5.3 Whilst the CIHT document '*Guidelines for providing for journeys on foot*' (2000) identifies that a distance of 2km might be considered by pedestrians, as set out in **Table 4-1**, it is more likely that both Bicester North station and Bicester Village station are to be accessed by cyclists from the Application Site. It is considered that a distance of 2km and 3.1km would take a cyclist approximately 6 minutes and 10 minutes respectively to reach at a speed of 320 metres per minute (m/m). Both stations have cycle parking facilities. Bicester North station offers 136 cycle parking spaces and Bicester Village station offers 182 cycle parking spaces.

## 4.6 SUMMARY

- 4.6.1 The adjacent Exemplar Scheme provides footways of at least 2.0m width and connects to a wider pedestrian network that provides connections to amenities within the Eco Town and Bicester town. These footways are considered to be adequate for young children to use for the purpose of cycling to the Gagle Brook Primary School.
- 4.6.2 The layout of the Exemplar Scheme offers strong sustainable cycling connections within the site to link to the wider area. As the Exemplar Scheme is subject to a 20mph zone, the low vehicle speeds help to encourage on-carriageway cycling within the Exemplar Scheme.
- 4.6.3 A continuous off-carriageway shared footway/cycleway is available from the Exemplar Scheme along the B4100 Banbury Road southbound towards Bicester town centre and linking the Application Site with Bicester North rail station. An existing Toucan crossing located approximately 120m south of the Charlotte Avenue junction with the B4100 Banbury Road provides a safe means of crossing this busy distributor road to connect with shared footway/cycleway links towards the east of Bicester and Caversfield.
- 4.6.4 The Exemplar Scheme is currently served by the E1 bus service which has an existing frequency of 2 services per hour and connects the Application Site with Bicester town centre and the Bicester rail stations. Other bus services are accessible from the Exemplar Scheme bus stop located on the B4100 Banbury Road to the immediate north of the Charlotte Avenue junction and adjacent to the Elmsbrook Sales & Marketing Suite.



# 5 LOCAL HIGHWAY NETWORK

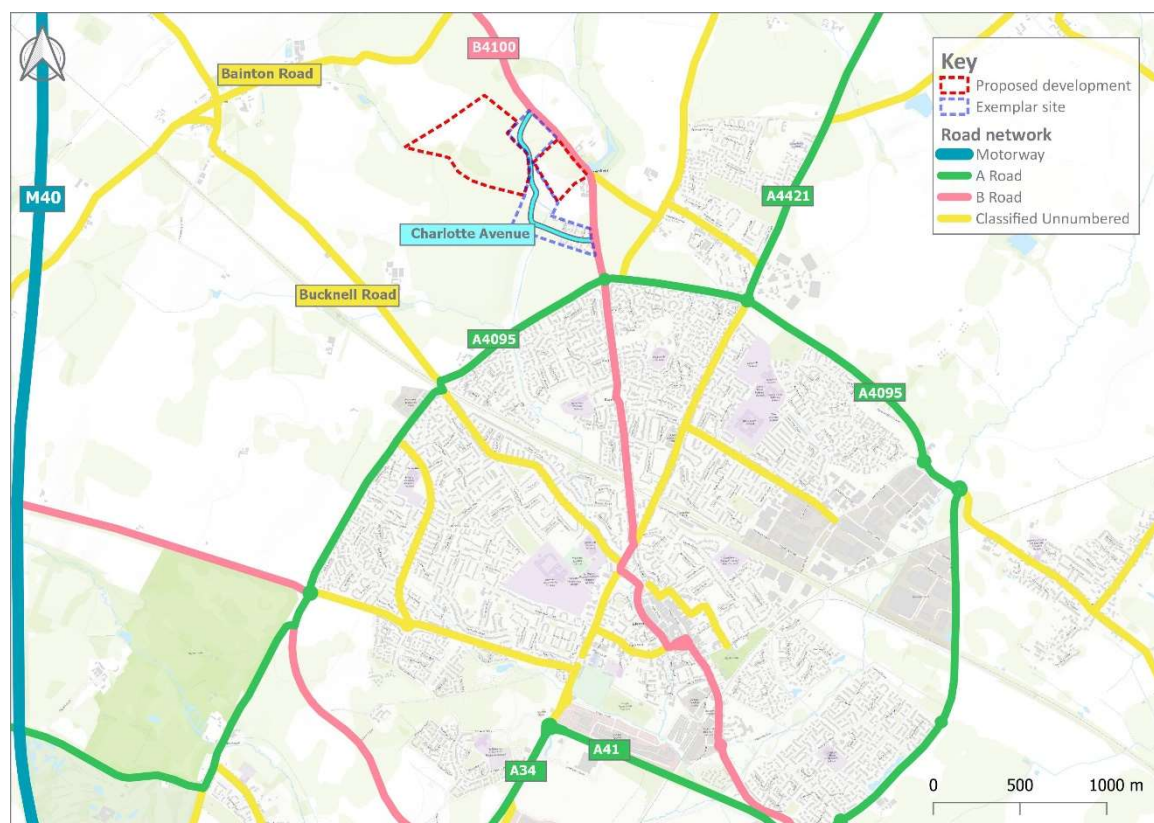
## 5.1 INTRODUCTION

5.1.1 This chapter describes the operation of the local highway network in the vicinity of the Application Site.

## 5.2 ROAD NETWORK

5.2.1 The highway network in the vicinity of the Application Site is presented in **Figure 5-1**. The key highway links are considered to include the existing Estate Road within the Exemplar Scheme, which consist primarily of Charlotte Avenue to the south and Braeburn Avenue to the north, the B4100 Banbury Road, which connects the Exemplar Scheme to the wider highway network, the A4095, which forms a perimeter road around the majority of Bicester and which is to be upgraded as part of the Strategic Highway Link, and improvements to the Eastern Peripheral Route being promoted by OCC. Links to the strategic highway network, identified as being the M40 to the west of Bicester and the A43 to the north of Bicester, are also within close proximity of the Application Site.

Figure 5-1: Highway Network



## 5.3 LOCAL HIGHWAY NETWORK

5.3.1 OCC are the local highway authority and are responsible for the maintenance of the local highway network. OCC are a statutory consultee on this outline application in relation to all highway matters that do not necessarily relate specifically to the strategic highway network.





### **CHARLOTTE AVENUE/BRAEBURN AVENUE – THE ESTATE ROAD**

- 5.3.2 Charlotte Avenue and Braeburn Avenue are the internal access roads through the Exemplar Scheme. These roads connect at the existing bus gate within the Exemplar Scheme to form the Estate Road from which the Application Site will take vehicular access. Both of these avenues form a priority junction with the B4100 Banbury Road. The Estate Road is generally a 6.0m wide residential road in character, with traffic calming measures in place to ensure that the 20mph speed limit is maintained as the whole of the Exemplar Scheme is within a 20mph zone.

### **B4100 BANBURY ROAD**

- 5.3.3 The B4100 Banbury Road runs to the east of the Application Site between the A43 to the north and the Banbury Road roundabout junction with the A4095 to the south. It is predominantly rural in nature and is subject to a speed limit of 40mph along the full frontage of the Exemplar Scheme and the existing Home Farm site until just to the south of its junction with Bainton Road where the 40mph speed limit ends and the B4100 Banbury Road becomes derestricted, and the national speed limit is introduced.
- 5.3.4 There is an existing access to the small business units and the listed homestead at Home Farm by way of a priority junction located approximately 300m to the south east of the Braeburn Avenue priority junction, an existing agricultural access to the fields to the south of Home Farm located approximately 185m to the north of the Charlotte Avenue priority junction, an access to a private dwelling located approximately 45m north of the agricultural access, and a priority junction with Aunt Ems Lane located on the bend of the B4100 Banbury Road providing a link to Caversfield.
- 5.3.5 The B4100 Banbury Road only has a footway provision to the south of the Exemplar Scheme to the Banbury Road roundabout junction along its western side, and along its eastern side to the south of the existing Toucan crossing facility. There is no footway provision on either side of the B4100 Banbury Road towards the north of its junction with Charlotte Avenue, with the exception of a short link to the existing bus stop facility adjacent to the Elmsbrook Sales & Marketing Suite.
- 5.3.6 To the south of the Banbury Road roundabout junction, the B4100 Banbury Road becomes more urban in nature with the presence of footways and traffic calming features. This section of Banbury Road is subject to a speed limit of 40mph, which changes to a 30mph on approach to the town centre.

### **A4095**

- 5.3.7 The A4095 is a single lane carriageway (in each direction) that acts as an existing by-pass route between the A4095/Buckingham Road/Skimmingdish Lane/A4421 roundabout junction to the east of the Banbury Road roundabout junction, to the A4095/Middleton Stoney Road/Vendee Drive/B4030 roundabout junction to the south west. The A4095 is subject to a 50mph speed limit, street lighting is provided, and a segregated pedestrian/cycle route is provided along the majority of this route.
- 5.3.8 The A4095 is subject to change as a new Strategic Highway Link has been approved by CDC (Planning Ref 14/01968/F) on the 21<sup>st</sup> of August 2019 and construction has commenced on the first phase of this new highway improvement scheme.



### **BUCKINGHAM ROAD**

- 5.3.9 The A4421 forms a roundabout junction to the east of the Banbury Road roundabout junction with Buckingham Road/A4095/Skimmingdish Lane. To the south of this junction, Buckingham Road provides a link to Bicester town centre along a wide single carriageway road that is primarily subject to a 30mph speed limit. To ensure that this speed limit is adhered to, a traffic calming feature in the form of a physical build out is provided at a point approximately 300m south of the roundabout junction, as well as a speed camera. Generous highway verges with adequate footway provision are provided along both sides of Buckingham Road as it approaches the Bicester town centre.

### **A4421**

- 5.3.10 From the 4-arm roundabout with the A4095 and Skimmingdish Lane, the A4421 extends in a north-easterly direction for approximately 10km and passes through the settlements of Newton Morrel and Newton Purcell until it meets with the A421 Tingewick Bypass at a 4-arm roundabout. The A4421 Skimmingdish Lane also forms the eastern (Bicester) perimeter road and extends for approximately 6.5km between the roundabout junction with the A4095 and the A41 Aylesbury Road/B4100 London Road roundabout to the south of Bicester, which also forms the primary means of access to the Graven Hill development.

### **BUCKNELL ROAD**

- 5.3.11 Bucknell Road extends in a south-east to north-west alignment between a priority-controlled junction with the B4100 Field Street within Bicester town centre and a roundabout junction with the A4095 Lord's Lane. This existing roundabout junction is very close to the railway line and a further priority junction with the A4095 Howes Lane is located to the south of the railway bridge. The alignment of the A4095 and the junction arrangement with the A4095 is to be amended as part of the recently permitted A4095 Strategic Highway Link.
- 5.3.12 Bucknell Road continues in a north-western alignment towards the village of Bucknell and becomes Bicester Road shortly north of the roundabout mentioned above. North of the roundabout with the A4095 Lord's Lane, the Bucknell Road carriageway narrows with an absence of footways and street lighting. The route is subject to a 30mph speed limit within Bicester, which is then derestricted towards the north from the roundabout exit.

### **BAINTON ROAD**

- 5.3.13 Bainton Road is a very narrow rural lane, which might even be described as a track. Whilst it does provide vehicular access to the village of Bucknell, it is not considered to be suitable for through traffic and therefore is considered to only accommodate local traffic.
- 5.3.14 It follows a general west to east alignment between the B4100 Banbury Road and the village of Bucknell. It is subject to a 60mph speed limit until the fringes of Bucknell Village, where the speed limit reduces to 30mph.

### **A41 OXFORD ROAD**

- 5.3.15 The A41 Oxford Road to the south of Bicester town centre provides a link from Junction 9 of the M40 towards Bicester via a dual carriageway arrangement. At the substantial throughabout junction at Bicester Village Shopping Centre, the A41 provides a general east to west alignment from Bicester towards Aylesbury.





## 5.4 STRATEGIC HIGHWAY NETWORK

5.4.1 Highways England (HE) are the strategic highway authority. HE are responsible for the maintenance of the strategic highway network and are a statutory consultee on this outline application in relation to all highway matters that relate specifically to the strategic highway network.

### A34

5.4.2 The A34 is accessible via Junction 9 of the M40 and extends in a south-easterly direction towards Oxford. The A34 route between Bicester and the fringes of Oxford is dualled in each direction and is subject to speed limits that range between 50mph and 70mph.

### A43

5.4.3 The A43 is accessible via Junction 10 of the M40 and extends in a north-easterly direction towards Brackley and Northampton. The A43 route from the M40 Junction arrangement, which includes access to Cherwell Valley Services, is dualled in each direction and has a number of roundabout junctions located along its length up to the Brackley Bypass roundabout junction with the A422 and Oxford Road into Brackley town centre.

5.4.4 The Baynards Green roundabout junction links the A43 with the B4100 Banbury Road and was recently the subject of detailed analysis as part of the Heyford Park hybrid application (Planning Ref 18/00825/HYBRID), which received officer recommendation for approval at the planning committee meeting held on the 05<sup>th</sup> of November 2020 but at the time of preparing this TA, had yet to be granted planning permission. As the Baynards Green roundabout junction includes links with the A43 and the B4100 Banbury Road, both OCC and HE have been party to detailed assessments of the junction improvements.

### M40 MOTORWAY

5.4.5 The M40 motorway extends in a north/south alignment and can be accessed at Junction 9 (via the A41) and Junction 10 (via the A43). The M40 provides a strategic link towards Banbury and Warwick to the northwest, and High Wycombe and the fringes of London to the southeast.

### M40 JUNCTION 9

5.4.6 Following the technical meeting with HE/OCC on the 12<sup>th</sup> of March 2021 (a copy of the meeting note is included at **APPENDIX B**), it was confirmed that an improvement scheme which will include a 'pinch point' has been agreed for this junction.

### M40 JUNCTION 10

5.4.7 Following the technical meeting with HE/OCC on the 12<sup>th</sup> of March 2021, it was confirmed that an improvement scheme for Junction 10, which extends to the Baynards Green roundabout junction, has been agreed with HE and OCC as part of the Heyford Park application. This is confirmed within the report to committee that identifies that there were no objections in relation to transport matters and that contributions to the proposed improvement works at Junction 10 have been agreed.

## 5.5 BASELINE TRAFFIC

5.5.1 Due to the COVID-19 pandemic and associated changes in travel patterns, no traffic surveys have been undertaken as part of this assessment.



5.5.2 As part of the transport scoping discussions with the local and strategic highway authorities, it was agreed that traffic flows were to be obtained from the Bicester Transport Model (BTM) and these would be used to provide the baseline traffic analysis. The BTM traffic flows were provided as turning counts at key junctions that were agreed to be assessed as part of the scoping discussions. These junctions are identified as follows:

- B4100 / A43 Baynards Green Roundabout Junction
- B4100 / A4095 / Banbury Road / A4095 Roundabout Junction
- A4095 / Buckingham Road / Skimmingdish Lane / A4421 Roundabout Junction
- A4095 / Middleton Stoney Road / Vendee Drive / B4030 Roundabout Junction
- B4100 Banbury Road / Braeburn Avenue Priority Junction
- B4100 Banbury Road / Charlotte Avenue Priority Junction

5.5.3 The BTM data was supported by Uncertainty Logs, which identify the extent of development that has been included within the BTM datasets, as well as a summary of the inclusions in the Heyford Park BTM scenarios. These are included at **APPENDIX E** for ease of reference.

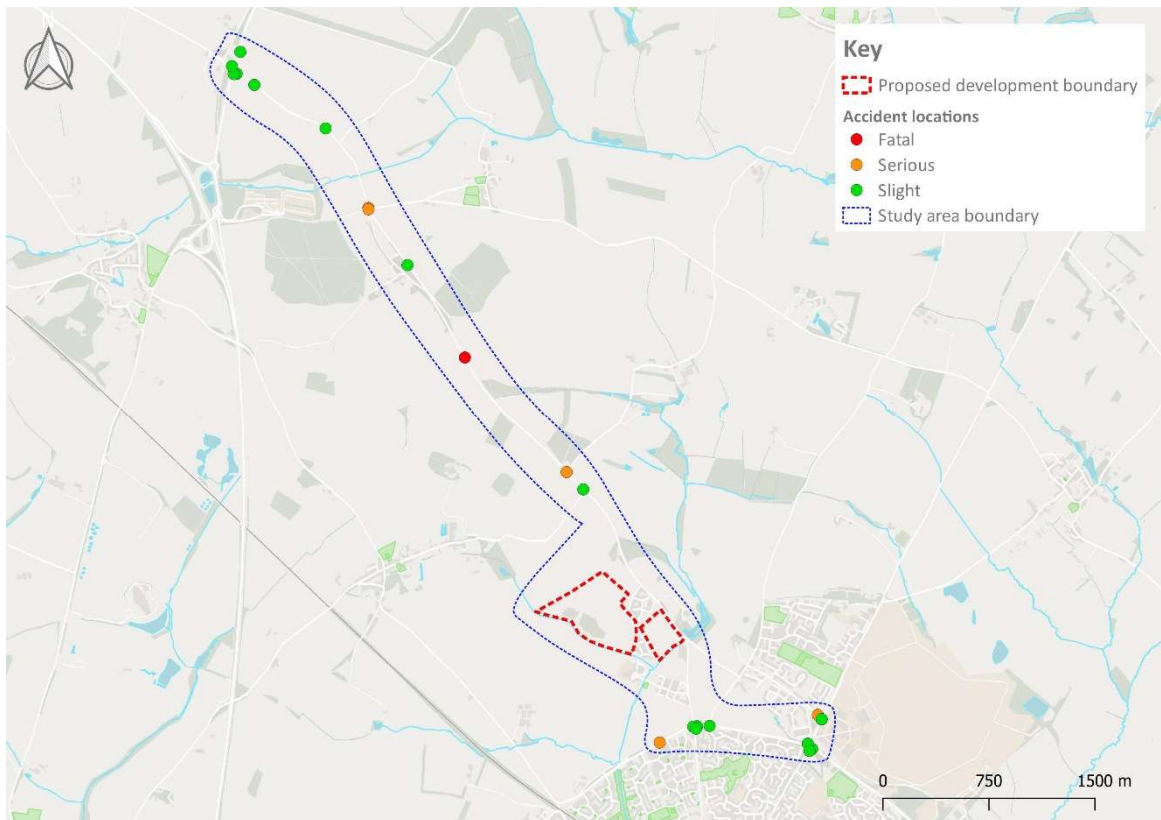
5.5.4 Baseline AM and PM peak hour flows for links and junctions across the study area have been obtained from the BTM for the 2016 Base Year. For ease of reference, a series of traffic flow diagrams have been prepared which present the traffic flows for the AM and PM peak hours that were provided from the BTM. **Diagrams 1 and 2** (contained within **APPENDIX F**) present the 2016 Base Traffic Flows extracted from the BTM for the AM and PM peak hours respectively at the identified junctions.

## 5.6 PERSONAL INJURY ACCIDENT DATA

5.6.1 Personal Injury Accident (PIA) data has been obtained from OCC for the most-recent three-year period. The accident study area and accident locations are shown within **Figure 5-2**. A total of 31 accidents were recorded within the study area boundary, comprising one `fatal`, five `serious`, and 25 `slight` accidents.



Figure 5-2: Accident Locations



5.6.2 A summary of accidents by severity is shown within **Table 5-1**.

Table 5-1: Accidents by Severity

ROAD USER	FATAL	SERIOUS	SLIGHT	TOTAL
Motor vehicles (excluding two-wheels)	0	4	14	18
Two-wheeled motor vehicles	0	0	5	4
Pedal cycles	1	1	6	8
Pedestrian	0	0	1	1
Horses & others	0	0	0	0
<b>Total</b>	<b>1</b>	<b>5</b>	<b>25</b>	<b>31</b>

5.6.3 A summary of accidents by casualty is shown within **Table 5-2**, indicating that 31 accidents resulted in 42 casualties, including one cyclist that suffered fatal injuries. Among the seriously injured were four vehicle drivers and one cyclist. Approximately half of the casualties were vehicle drivers which amounted to 18 of all casualties.



Table 5-2: Summary of Casualties

CASUALTIES	FATAL	SERIOUS	SLIGHT	TOTAL
Vehicle driver	0	4	14	18
Passenger	0	0	7	7
Motorcycle rider	0	0	4	4
Cyclist	1	1	6	8
Pedestrian	0	0	1	1
Other	0	0	0	0
<b>Total</b>	<b>1</b>	<b>5</b>	<b>32</b>	<b>38</b>

## FATAL ACCIDENT

5.6.4 There was one fatal accident that occurred in an incident between a car and a cyclist. The accident was recorded in 2020 on the B4100 Banbury Road to the north of the Exemplar Scheme site access with Braeburn Avenue. The car involved in the accident was travelling southeast along the B4100 Banbury Road and hit the cyclist who was also travelling southeast. The cyclist displayed no lights and was wearing dark clothing at night. Light conditions were described as `Darkness: no street lighting` and the road surface as `Wet/Damp`.

## 5.6.5 SERIOUS ACCIDENTS

5.6.6 There were five serious accidents recorded between 2017-2020 within the study area:

- One serious accident was recorded in January 2017 and involved a car travelling northbound along the B4100 Banbury Road, lost control, left the carriageway and hit a tree. Among the causation factors were mentioned intoxication and defective tyres. Light conditions were described as `Darkness: no streetlight` and the road surface was `Wet/Damp`;
- Another serious accident was recorded in February 2018 at the junction of the B4100 Banbury Road with Bainton Road. The accident occurred when a vehicle travelling in the north west direction on the B4100 Banbury Road hit the rear of another vehicle as it started to turn right to Bainton Road. The vehicle left the carriageway to the northside and ran into a ditch, causing serious injuries to the driver. The main causation factor recorded was `Careless/ Reckless/ In a hurry`. The accident occurred in `Daylight` and the road surface was `dry`;
- One serious accident was recorded in August 2018 on the B4100 Banbury Road. The accident involved a vehicle travelling south east on the B4100 Banbury Road where the driver lost control, skidded, left the carriageway and overturned. Among the causation factors `Exceeding speed limit`, `swerved` and `impaired by alcohol` were mentioned;
- Another serious accident was recorded in November 2019 and involved three cars. The driver of the car travelling north east on the A4095 Lord's Lane has failed to notice traffic ahead slowing and hit the rear of a car then pushed that car into another car. Among the causation factors were mentioned `Failed to look properly` and `Careless/ Reckless/ In a hurry`. The driver of the first car suffered serious injuries;



- The most recent accident resulting in serious injuries was recorded in February 2020 at the junction of Skimmingdish Lane and Turnpike Road. The vehicle travelling north west on Skimmingdish Lane clipped the rear wheel of a cyclist also travelling north west and turning right to Turnpike Lane, resulting in serious injuries to the cyclist. Among the causation factors were mentioned `Failed to judge other persons path or speed` and `Loss of control`.

## 5.7 SUMMARY

5.7.1 The PIA data has determined that 31 accidents have occurred in the past three years within the study area around the Application Site, resulting in 38 casualties. Furthermore, there appear to be no inherent issues with respect to the design of the local highway. It is therefore concluded that the existing highway and pedestrian/cycle infrastructure in the vicinity of the site is operating satisfactorily and that there are no underlying existing issues with respect to highway safety.



# 6 PROPOSED DEVELOPMENT

## 6.1 INTRODUCTION

- 6.1.1 This chapter outlines the Proposed Development including the access strategy and parking provision for the Eastern and Western Parcels of land for both vehicles and sustainable modes of transport.

## 6.2 DEVELOPMENT DESCRIPTION

- 6.2.1 The Proposed Development is to provide up to 530 residential units over the two identified parcels. The Western Parcel, which is proposed to deliver approximately 75% of the proposed development (up to 400 dwellings) and the Eastern Parcel, which is proposed to deliver the remaining 25% of the proposed development (up to 130 dwellings).
- 6.2.2 In terms of the housing mix of the development, the application is submitted in outline and therefore not fixed at this stage. The development will seek to provide a policy compliant level of affordable housing provision of 30%, which equates to approximately 160 affordable dwellings. The detailed mix, type and location of the affordable units will be determined through future reserved matters applications.
- 6.2.3 An Illustrative Masterplan for the scheme has been prepared by Mosaic Urban Design & Masterplanning, a copy of which is contained at **APPENDIX A**. This plan shows the general principles of the proposed development and the site access locations are fixed.

## 6.3 ACCESS STRATEGY

- 6.3.1 The access strategy for the proposed development builds upon the aspirations of the North West Bicester Masterplan, as set out within the adopted SPD. Vehicular access to the Western Parcel is proposed from 3 locations. A simple priority junction is proposed from Charlotte Avenue at a location to the south of the existing bus gate. A further simple priority junction is proposed from Braeburn Avenue at a location to the north of the existing bus gate. A new 2.0m wide pedestrian footway will be provided between these simple priority junctions along the frontage of the Western Parcel where there currently is only a grass verge. This footway will be extended to the link with the existing provision within the Exemplar Scheme to ensure a continuous provision for pedestrians from the Western Parcel to connect with the amenities provided within the Exemplar Scheme and the wider area. A third vehicular access will be provided from an extension to an existing cul-de-sac that forms part of the permitted road layout within Phase 4 of the Exemplar Scheme, which is currently under construction.
- 6.3.2 Vehicular access to the Eastern Parcel will be via an extension to an existing cul-de-sac located to the south of the existing bus gate. This existing cul-de-sac forms a simple priority junction with Charlotte Avenue and provides direct access to a number of existing properties within the Exemplar Scheme and 2 chargemaster parking bays for electric vehicles which is located adjacent to an existing sub-station.
- 6.3.3 The scheme will be designed to provide permeability and prioritise pedestrian and cyclist movements to encourage travel by sustainable modes within the Eco Town and toward the town centre. Detailed Plans have been prepared of the site access arrangements as discussed above and these drawings are included within **APPENDIX G** of this report. For ease of reference, **Figure 6-1** presents the four site access junctions.





Figure 6-1: Site Access Strategy



## PEDESTRIAN AND CYCLIST ACCESS

- 6.3.4 It is proposed pedestrian and cycle access into the site will be taken from the adjacent Exemplar Scheme. A 2.0m wide footway will be provided on both sides of the primary access roads to enable access on foot from the adjacent scheme while potential future pedestrian/cycle connections are proposed to enhance the permeability of the scheme and sustainable travel aspirations of the wider North West Bicester Masterplan.
- 6.3.5 In addition to these future pedestrian and cycle connections from the main access routes, it is proposed to provide additional footway links through the adjacent development linking to the Application Site. The detailed design of these potential future links through the site will be established at the reserved matters stage. However, their proposed locations are shown on the extract from the Illustrative Masterplan presented at **Figure 6-2**.

**Figure 6-2: Extract from Illustrative Masterplan**



### WESTERN PARCEL

- 6.3.6 As shown in **Figure 6-2**, pedestrian and cycle links from the Western Parcel are proposed at a number of locations along the perimeter of the Application Site to ensure connectivity between the existing Exemplar Scheme and the wider transport network. These pedestrian connections are identified in more detail on the Illustrative Masterplan contained at **APPENDIX A** but are identified at points 10 and 11 and adjacent to the vehicular access points, identified at points 1.

### EASTERN PARCEL

- 6.3.7 As shown in **Figure 6-2**, pedestrian and cycle links from the Eastern Parcel are proposed at a number of locations along the perimeter of the Application Site to ensure connectivity between the permitted Exemplar Scheme and the Application Site. These pedestrian connections are identified in more detail on the Illustrative Masterplan contained at **APPENDIX A** but are identified at points 10 and 11 and adjacent to the vehicular access point, identified at point 1.

### SUMMARY

- 6.3.8 To ensure pedestrian and cycle routes within the street network are well used and fit for purpose, it is proposed they are well lit, of high-quality surface materials consistent with that which has been used within the Exemplar Scheme and ensure natural surveillance. Safety of pedestrians and cyclists will be ensured by providing routes of adequate widths and with numerous crossing points. Additionally, traffic calming measures will be implemented along the primary and secondary streets within the Application Site to reduce vehicle speeds and maximise pedestrian and cycle safety across the development.
- 6.3.9 A comprehensive network of pedestrian and cycle routes within the Application Site will maximise ease of movement by foot and by bike. In particular, it will help encourage cycling as an alternative to the car for internal trips.
- 6.3.10 This strategy will provide strong pedestrian and cycle links from the development to the wider Eco Town and surrounding areas and supports the wider walking and cycling access strategy of the North West Bicester Masterplan.
- 6.3.11 As the planning application is in outline, the detail of these internal routes for pedestrians and cyclists is not being considered at this stage but will be considered as part of future reserved matters applications.

### VEHICLE ACCESS

- 6.3.12 The access strategy for the proposed development builds upon the aspiration of the NW Bicester Masterplan and those set out within the SPD. Existing vehicular junctions with the B4100 Banbury Road are provided via the Exemplar Scheme at Charlotte Avenue and Braeburn Avenue while the development also encourages travel by sustainable modes of transport both within the Eco Town and external towards Bicester town centre.
- 6.3.13 The bus gate currently includes a narrowed carriageway width to 4.0m with a footway provision on the eastern side only. This will be updated to include footway provision on both sides of the bus gate, as per the VTP Drawing **4600-1100-T-009 Rev C** – Site Accesses A, B, C, a copy of which is included at **APPENDIX G**.

### EASTERN PARCEL

- 6.3.14 As per **Figure 6-1**, vehicular access to the Eastern Parcel is via an already constructed cul-de-sac within the Exemplar Scheme. Due to the bus gate preventing access for vehicles from Braeburn Avenue to Charlotte Avenue, all development traffic associated with the Eastern Parcel will access via the existing junction of Charlotte Avenue with the B4100 Banbury Road.





- 6.3.15 This access arrangement to the Eastern Parcel is presented on VTP Drawing **4600-1100-T-009 Rev C** – Site Accesses A, B, C, a copy of which is included at **APPENDIX G** and referenced as Site Access A. The existing width of the cul-de-sac is identified as being 6.0m with kerbed footways of 2.0m width provided on both sides. This arrangement will be retained for the extended access road into the Eastern Parcel, which is considered to be suitable for a road that is proposed to provide access for up to 130 dwellings in accordance with the OCC Residential Road Design Guide (2<sup>nd</sup> Edition – 2015). An extract of the Road Types from this Design Guide is included at **APPENDIX H**.

#### WESTERN PARCEL

- 6.3.16 As per **Figure 6-1**, vehicular access to the Western Parcel is via three proposed access junctions that will connect with the internal highway arrangement within the Exemplar Scheme.
- 6.3.17 Two primary vehicular access junctions are proposed to the south (Site Access B) and to the north (Site Access C) of the bus gate, as presented on VTP Drawing **4600-1100-T-009 Rev C** – Site Accesses A, B, C, a copy of which is included at **APPENDIX G**. All development traffic utilising the southern access to the Western Parcel will access the Application Site via Charlotte Avenue and all development traffic utilising the northern access to the Western Parcel will access the Application Site via Braeburn Avenue.
- 6.3.18 It is key to note that Site Access B, which is located to the south of the bus gate, will provide vehicular access to a limited amount of development only. There is not proposed to be a vehicular link from Site Access B to the rest of the Western Parcel. It is expected that a means of access for emergency vehicles may be provided within the Western Parcel, which might include the use of removable bollards or an emergency fire gate, but there will be a means of control to ensure that cars do not have the opportunity to ‘bypass’ the bus gate and undermine this key traffic calming feature, which in turn provides priority for the local bus service, making this an attractive sustainable transport option for existing and future residents to access Bicester town.
- 6.3.19 The simple priority junction at Site Access C, to the north of the bus gate, has an extended footway provision to the north of the junction arrangement to ensure that adequate visibility can be provided at 2.4m x 35.0m. It is noted that in accordance with Table 7.1 of Manual for Streets (MfS), the identified stopping sight distance (SSD) for a road with a design speed of 20mph is 25m. However, a review of the requirements set out within the OCC Residential Road Design Guide (2<sup>nd</sup> Edition - 2015) identifies that the SSD requirement for a road of 19mph is 33.5m, hence the provision of a visibility splay of 2.4m x 35.0m for all junctions within the Application Site as it is expected that the 20mph zone will be extended to include both the Western and Eastern Parcels of the Application Site. The relevant extract from the OCC Design Guide pertaining to visibility is included at **APPENDIX H**.
- 6.3.20 The design of the access roads at Site Access B and C is identified as being consistent with the provision on the Exemplar Scheme, which is 6.0m carriageway widths with 2.0m wide footways on both sides of the access road.
- 6.3.21 A further vehicular access, Site Access D is proposed from a location to the north of the Western Parcel that will provide a vehicular connection to the Estate Road through the as-built Exemplar Scheme. This access arrangement is presented on VTP Drawing **4600-1100-T-010 Rev A** - Site Access D, a copy of which is included at **APPENDIX G**.



- 6.3.22 The design of the access arrangement is identified as being an extension from an existing cul-de-sac within Phase 4 of the Exemplar Scheme, which is currently under construction. The width of this existing road is identified as being 6.0m with a single footway of 1.8m on the north western side. A 2.0m verge is proposed to be included on the south eastern side of the proposed extension that will form the access road arrangement. It is proposed to retain these widths as they still comply with the design requirements for a Major Access Road in accordance with the extract from the OCC Design Guide contained at **APPENDIX H**.

#### INTERNAL ROAD ARRANGEMENT

- 6.3.23 Due to the fact that the application is in outline, it is not intended for the internal roads, footways, or cycleways to be considered in detail at this stage. These details will be addressed as part of future reserved matters submissions. However, it is expected that all routes within the Application Site that are proposed to be adopted, will be designed and constructed in accordance with the Road Types identified within the OCC Residential Road Design Guide (2<sup>nd</sup> Edition – 2015). For completeness, a copy of the Road Types are set out within **APPENDIX H**.

#### ACCESS FOR DELIVERY AND REFUSE VEHICLES

- 6.3.24 Whilst the application is in outline with only the site access junctions being considered in detail, it is necessary to ensure that the site access junctions are designed to accommodate refuse and delivery vehicles.
- 6.3.25 In order to assess the site access junctions, swept path assessments have been undertaken at Site Accesses B and C. VTP Drawing **4600-1100-T-017 Rev A**, a copy of which is included at **APPENDIX I**, presents the swept path of a large refuse vehicle identified to be 11.2m in overall length. It is acknowledged that the OCC response to the pre-application discussions and TA Scoping Report (copy included at **APPENDIX B**) suggested that a large refuse vehicle of 11.6m in overall length should be assessed. However, upon further inspection of the CDC Planning and Waste Management Design Advice, vehicle specifications for the local refuse vehicles identify that the overall length of a refuse vehicle is 9.39m (excluding binlift). These vehicle specifications are also included at **APPENDIX I** for ease of reference. As an 11.2m refuse vehicle is well in excess of the identified refuse vehicle used by CDC, it is considered that an appropriate vehicle has been considered as part of the swept path assessments.
- 6.3.26 As the planning application is in outline, it is not proposed to assess the internal road layout of the Application Site, but in order to present an indication of the suitability of the proposed layout of the Application Site, swept path assessments of a large refuse vehicle have been undertaken at two locations.
- 6.3.27 VTP Drawing **4600-1100-T-018 Rev A** presents the swept path assessment of the large refuse vehicle at the westernmost point of the Western Parcel. This drawing identifies that the large refuse vehicle can manoeuvre to a suitable location where it does not have to access the proposed private road and will still be within a 20m distance of a bin store (collection point), which in turn will be located within a 30m 'drag' distance of the nearby residential properties.
- 6.3.28 VTP Drawing **4600-1100-T-019 Rev A** presents the swept path assessment of the large refuse vehicle at a location adjacent to the existing Exemplar Scheme of the Western Parcel. This drawing identifies that the large refuse vehicle can manoeuvre to a suitable location where it does not have to access the proposed private road and will still be within a 20m distance of a bin store (collection point), which in turn will be located within a 30m 'drag' distance of the nearby residential properties.





6.3.29 The CDC Residential Design Guide SPD (July 2018) states at Section 5 (page 82) that “*collection points must be no further than 20 metres from the refuse vehicle access point.*” With regards the ‘drag’ distance, Manual for Streets states at paragraph 6.8.9 (page 76) that “*residents should not be required to carry waste more than 30 m (excluding any vertical distance) to the storage point*”. Based on these criteria, the indicative layout of the Application Site, as presented on the Illustrative Masterplan, a copy of which is included at **APPENDIX A**, is considered to adhere to these principles for refuse collection.

6.3.30 The full details of the refuse collection strategy will be formalised as part of the reserved matters submission.

### CONSTRUCTION ACCESS

6.3.31 Whilst the details of how the construction of the Application Site will be set out within more detail as part of a Construction Environment Management Plan (CEMP), which is expected to include a Construction Traffic Management Plan (CTMP), both of which are expected to be the subject of suitably worded planning conditions to this outline application, it is acknowledged that the Eastern Parcel is likely to be accessed, for the purposes of construction only, directly from the B4100 Banbury Road.

6.3.32 This construction access arrangement is presented on VTP Drawing **4600-1100-T-011 Rev B** – Site Access E, a copy of which is included at **APPENDIX G**. This construction access will only be in place for the construction period and is therefore temporary in nature. However, in order to ensure the safety of road users, the design of this construction access adheres to the appropriate requirements of the Design Manual for Roads and Bridges (DMRB), in particular the requirements of CD 109 – Highway link design, and CD 123 – Geometric design of at-grade priority and signal-controlled junctions.

6.3.33 In accordance with CD 109 and CD 123, the visibility requirements from the construction access on to the B4100 Banbury Road are identified as being 4.5m x 120.0m as the B4100 Banbury Road has a 40mph speed limit along this stretch of highway. Key to note is that the proposed means of control to the site, which is identified as being by a gated entrance, ensures that there would be sufficient area for a large heavy goods vehicle (HGV) to wait on the private access road for the gate to open without blocking the flow of traffic on the B4100 Banbury Road. This gate is identified as being 22.0m within the Application Site, but the full details will be agreed as part of the detailed design that would be required to support the Section 278 Agreement that will be required to deliver this temporary access arrangement.

6.3.34 Construction access to the Western Parcel of land will be taken from the internal road network within the Exemplar Scheme.

### STAGE 1 ROAD SAFETY AUDIT

6.3.35 As set out within the TA Scoping Note, a copy of which is included at **APPENDIX B**, a Stage 1 Road Safety Audit (RSA) was commissioned for the various site access junctions, including the temporary construction access, and the proposed signalisation of the Charlotte Avenue junction with the B4100 Banbury Road.

6.3.36 The Stage 1 RSA was undertaken by an independent Auditor – Road Safety Consulting Ltd, and a full copy of the Stage 1 RSA Brief, the signed Stage 1 RSA, and a completed Stage 1 RSA Designer’s Response, are included at **APPENDIX J** of this TA.

6.3.37 Following a review of the identified problems and consideration of the Auditor’s recommendations, the various site access junctions, the temporary construction access, and the proposed signalisation of the Charlotte Avenue junction with the B4100 Banbury Road drawings, have all been updated, as necessary.

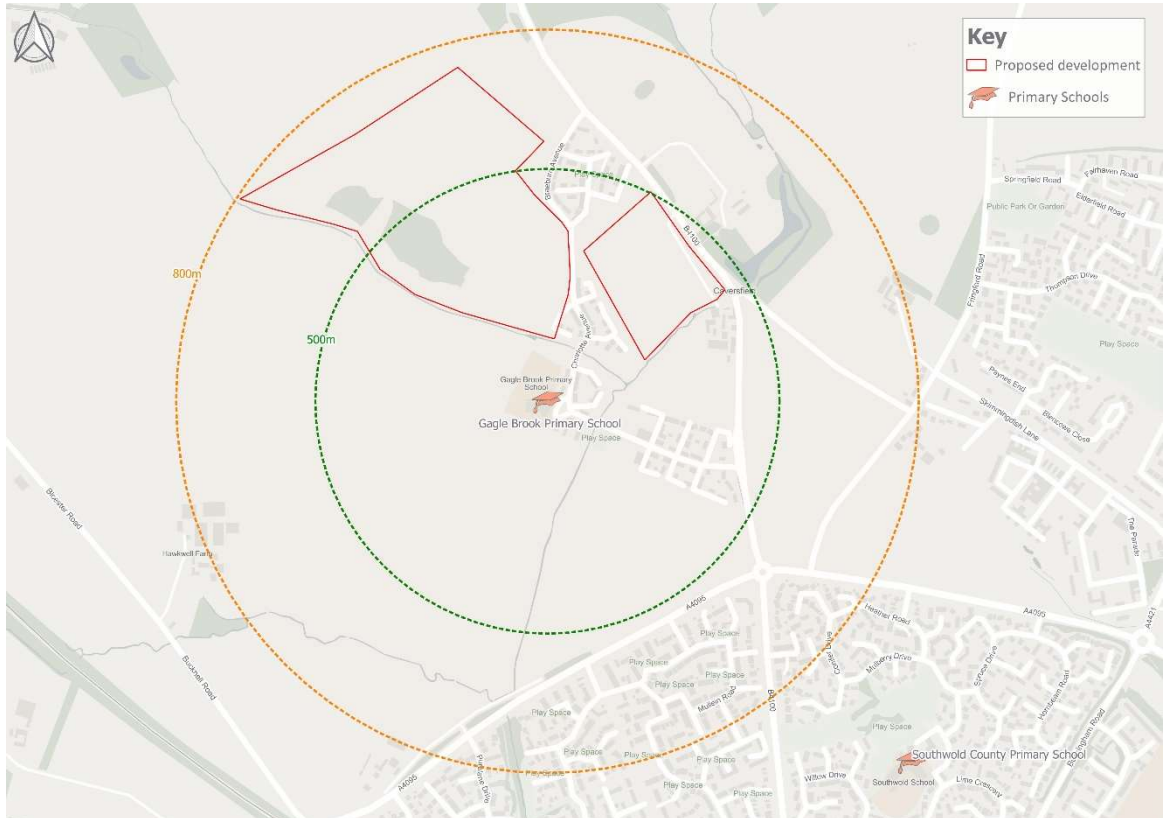


## SAFER ROUTES TO SCHOOL

- 6.3.38 The proposed development will provide multiple walking and cycling routes, connecting footpaths and streets internally and beyond the site.
- 6.3.39 The nearest primary school to the site is the Gagle Brook Primary School, which is located within the Exemplar Scheme. The existing connections within the adjacent site are considered to be safe for young children wishing to access the local primary school with footways of 2.0m width and sufficient lighting. Whilst there are a number of informal crossing points provided in the vicinity of the school on Cranberry Avenue with dropped kerbs and tactile paving, there are currently no road markings identifying these crossing facilities.
- 6.3.40 Discussions with the Gagle Brook Primary School Headmaster and Governor at a meeting on the 16<sup>th</sup> of March 2021 identified concerns raised by parents and teachers with respect to the potential improvements that could be delivered to enhance the routes to the local Primary School. These included the provision of road markings at the existing informal crossing facilities in the form of a zebra crossing arrangement. It is felt that this would help young children and drivers clearly define the location of crossing points.
- 6.3.41 It is considered that whilst not necessarily something that could be delivered by the Applicant in relation to the Application Site as these works would not be within the adopted highway (until the road network of the Exemplar Scheme were to be adopted), nor are the roads located within the existing Exemplar Scheme within the control of the Applicant, a suitable and proportionate financial contribution to the delivery of these minor road works to enhance the safety for young children accessing the primary school could be made from the Section 106 financial contributions.
- 6.3.42 The location of Gagle Brook Primary School is shown within **Figure 6-3**.



Figure 6-3: Location of Gagle Brook Primary School



6.3.43 As identified on **Figure 6-3**, all of the proposed dwellings within the Eastern Parcel and the majority of the area of the Western Parcel are located within a 500m radius of the Gagle Brook Primary School. the remaining area of the Western Parcel is within an 800m radius around the school. Therefore, it is considered that the local primary school will be easily accessible on foot from within the proposed development.

**6.4 CYCLE PARKING PROVISION**

6.4.1 Cycle parking will be provided in line with the CDC’s Residential Design Guide SPD (adopted on the 16<sup>th</sup> of July 2018) which sets out the Cycle Parking Standards at Table 5.1 (page 70), which in turn is an extract from OCC’s Residential Road Design Guide (2<sup>nd</sup> Edition – 2015). The cycle parking standards for residential developments are summarised in **Table 6-1**.

Table 6-1: CDC Cycle Parking Standards

CYCLE PARKING STANDARDS		RESIDENTIAL
Resident		1 bed – 1 space; 2+ beds – 2 spaces
Visitor		1 stand per 2 units where more than 4 units
NOTES		
1	Garages should be designed to allow space for car plus storage of cycle in line with the District Council’s design guides where appropriate (most specify 6m x 3m)	
2	1 stand = 2 spaces: The number of stands to be provided from the calculations to be rounded upwards. The preferred stand is of the ‘Sheffield’ type	
3	All cycle facilities to be secure and located in convenient positions	
4	Residential visitor parking should be provided as communal parking at convenient and appropriate locations throughout the development	

Table 5.1 Cycle Parking Standards for residential development, (extract from Residential Road Design Guide, Second Edition 2015, OCC)



6.4.2 The final provision and layout of cycle parking across the development site will be made in accordance with the standards and policy set out by CDC and OCC and presented in detail on the proposals to be submitted at the reserved matters stage.

## 6.5 CAR PARKING PROVISION

6.5.1 The latest parking standards for residential developments are set out within Table A6.B1 of Appendix F of the CDC Residential Design Guide SPD (adopted on the 16<sup>th</sup> of July 2018). A copy of this Table is included at **APPENDIX K** of this TA for ease of reference.

6.5.2 The provision and layout of car parking across the development site will be made in accordance with the standards and policy set out by CDC and OCC and presented in detail on the proposals to be submitted at the reserved matters stage. The development proposal would look to achieve a provision of between one and two allocated spaces per dwelling in line with the number of bedrooms proposed for each dwelling, plus additional unallocated parking provision.

6.5.3 The following principles will govern parking provision:

- Allocated parking spaces are to be provided on-plot or within parking courts in close proximity to the relevant plot;
- Unallocated parking to be provided as close to each property as possible, and is safe and easy to use;
- Parking is generally expected to be provided in a combination of on plot, off plot and on street spaces;
- Adopting a flexible approach to parking design and provision, focusing on optimum design and layout to meet the needs of residents, pedestrians and cyclists; and
- Reducing the visibility of the car in the street scene through careful design, robust boundary treatments, and unobtrusive garaging and use of car ports.

6.5.4 The pre-application advice from OCC dated the 08<sup>th</sup> of December 2020, a copy of which is included at **APPENDIX B**, notes that parking is to be provided in accordance with the CDC Residential Design Guide, but it also highlights the need for careful consideration of visitor parking provision, particularly as it is acknowledged that there is a lack of visitor parking on the Exemplar Scheme. Whilst OCC suggested that a parking beat survey be undertaken of the Exemplar Scheme to establish an accurate demand for visitor parking provisions, due to the COVID-19 pandemic it was agreed that there would be no value in undertaking these parking beat surveys at present.

6.5.5 Whilst it is accepted that there is a lack of visitor parking on the Exemplar Scheme, it is not considered appropriate for the Application Site to provide more visitor parking than would be required by the CDC standards to make up for the shortfall of visitor parking on the adjacent Exemplar Scheme. As such, visitor parking is proposed to be provided in clear accordance with the standards and relative to the number of allocated spaces that are to be provided for each dwelling. This will only be agreed as part of future reserved matters submissions.



## 6.6 CAR CLUB PROVISION

- 6.6.1 It is acknowledged that there are a number of car club spaces on the Exemplar Scheme. Two of these are currently located near the Sales & Marketing Suite in close proximity to the Charlotte Avenue access. Whilst VTP have tried to make contact with the providers of this car club service, we have not had any feedback to date.
- 6.6.2 With a view to ensuring that the use of car clubs is a viable opportunity for the Application Site, VTP contacted Enterprise Car Club who have expressed an interest in providing the appropriate services for the Application Site, at the appropriate stage.
- 6.6.3 A letter of intent has been provided by Enterprise Car Club, a copy of which is contained at **APPENDIX L**. This letter identifies that Enterprise would provide the following at this stage, subject to further agreement and negotiation:
- An agreed number of Year's Free Membership for Enterprise Car Club to residents of the development, giving them access to over 2,500 vehicles across the UK;
  - Up to 3 vehicles on-site or on agreed council highways;
  - £50 Free Driving credit per resident;
  - Briefing of sales staff and promotional material for the development;
  - 24/7 Clubhouse customer service team;
  - 24/7 Booking Tool on web desktop, android and apple devices;
  - Vehicle insurance;
  - Vehicle maintenance and valeting;
  - Creation of reports and statistics for the developer and local council; and
  - Discount for active car club members with Enterprise Rent-A-Car.

## 6.7 PUBLIC TRANSPORT ACCESS

- 6.7.1 The proposed layout of the residential units, as currently presented on the Illustrative Masterplan, identifies that the majority of the site will be within a 400m walking distance of the E1 bus route which runs along the Estate Road through the adjacent Exemplar Scheme and into Bicester town centre.
- 6.7.2 As part of the scoping process with OCC, VTP engaged with the appropriate officers to discuss the public transport provision and potential opportunities for improvements as a result of this proposed development. OCC have confirmed the preferred strategy with regards public transport in their email dated the 12<sup>th</sup> of January 2021, a copy of which is included at **APPENDIX B**.
- 6.7.3 As part of any planning permission granted for the development proposal, it is expected that the Applicant will be required to make a financial contribution towards the ongoing provision of this local bus service to be agreed as part of the Section 106 financial contributions to fund public transport improvements and services, which is consistent with other schemes that have recently been permitted within the wider North West Bicester Eco Town to serve development sites.





6.7.4 As part of the planning permission, it is expected that a planning condition is likely to be identified that would require the future developer of the Application Site to participate in a North West Bicester Bus Forum to plan future bus services as part of the wider public transport strategy of the North West Bicester Masterplan.

6.7.5 This approach is consistent with local transport policy and strategic objectives as well as the delivery of other local development sites. It will provide strong public transport links from the Application Site to the wider Eco Town and surrounding areas. It therefore supports the wider public transport access strategy of the North West Bicester Masterplan.

## 6.8 SUMMARY

6.8.1 The proposed development comprises up to 530 residential dwellings and will provide the infrastructure to enable a high proportion of the trips to be made by sustainable modes including walking, cycling, and public transport.

6.8.2 Cycle and car parking will be provided in line with policy and will be presented in detail on the proposals to be submitted at the reserved matters stage.



# 7 DEVELOPMENT TRIP GENERATION

## 7.1 INTRODUCTION

7.1.1 This chapter sets out the proposed methodology to establish the multi-modal trip generation for all person trips associated with the proposed development. This methodology is proposed to be consistent with that set out in the *NW Bicester Masterplan – Interim Access and Travel Strategy* document produced by Hyder Consulting UK Ltd in March 2014. This methodology has been implemented for other applications, including Application 1 (Planning Ref 14/01384/OUT), Application 2 (Planning Ref 14/01641/OUT), the Home Farm application (Planning Ref 18/00484/OUT), and the recently consented development at Himley Village (Planning Ref 14/02121/OUT).

## 7.2 RESIDENTIAL TRAVEL DEMAND

### PERSON TRIP RATES

7.2.1 The *Interim Access & Travel Strategy* document sets out trip rates agreed with OCC to inform transport assessment work for developments across the North West Bicester Eco Town.

7.2.2 The total person trip rates agreed in the *Interim Access and Travel Strategy* were derived from the TRICS database and equate to the total number of trips generated by each land use for all modes of travel.

7.2.3 To ensure that a robust assessment is used for traffic modelling purposes, the 85<sup>th</sup> percentile trip rates are to be used for the residential development. These details are set out within the TA Scoping Note, but for ease of reference are presented again. The trip rates derived are for the AM peak hour (08:00-09:00), PM peak hour (17:00-18:00) and the 12-hour (07:00-19:00) assessment periods. The residential person trip rates are shown in **Table 7-1**.

**Table 7-1: Residential Person Trip Rate per Unit (85<sup>th</sup>ile)**

RESIDENTIAL PERSON TRIPS	TRIP RATES (PER 1 DWELLING)		
	IN	OUT	TWO-WAY
AM Peak – Houses Privately Owned	0.384	1.058	1.442
AM Peak – Affordable Houses*	0.307	0.846	1.154
PM Peak – Houses Privately Owned	0.777	0.517	1.295
PM Peak – Affordable Houses*	0.622	0.414	1.036
12 Hour – Houses Privately Owned	4.843	5.939	10.782
12 Hour – Affordable Houses*	3.874	4.751	8.626

\*Note that the results from the National Travel Survey suggest that 20% fewer trips are made by residents of affordable housing. It is thus Proposed that a factor of 0.80 is applied to the privately owned housing trip rates to establish the affordable housing trip rates.



## PERSON TRIP GENERATION

- 7.2.4 To further ensure that a robust assessment is undertaken for the purposes of the Transport Assessment, whilst it is acknowledged that the application is for up to 530 dwellings, this TA will consider the provision of up to 550 dwellings. As the proposed development is to provide a policy compliant level of affordable houses, i.e., 30% of the total provision, which equates to 165 dwellings, this would leave 385 dwellings as privately owned houses. Based on the above agreed total person trip rates, the total number of person trips expected to be generated by the proposed development of up to 550 dwellings is summarised in **Table 7-2**.

**Table 7-2: Residential Person Trip Generation (550 dwellings)**

UP TO 550 DWELLINGS	AM PEAK HOUR			PM PEAK HOUR			12-HOUR PERIOD		
	In	Out	Total	In	Out	Total	In	Out	Total
Privately Owned Houses (385)	148	407	555	300	199	499	1,865	2,287	4,151
Affordable Houses (165)	50	140	190	103	68	171	639	784	1,423
<b>Total (550)</b>	<b>198</b>	<b>547</b>	<b>745</b>	<b>403</b>	<b>267</b>	<b>670</b>	<b>2,504</b>	<b>3,070</b>	<b>5,574</b>

## 7.3 JOURNEY PURPOSE

- 7.3.1 The *Interim Access and Travel Strategy* document provides details of the journey purpose for the residents of the proposed development. This information was obtained from the 2008/12 National Travel Survey and quantifies the proportion between journey purpose categories by hour period over the course of a day. The identified categories are as follows:

- Commuting;
- Business;
- Education;
- Shopping;
- Other Services; and
- Visiting friends and relatives.

- 7.3.2 These journey purposes are then further grouped into three core categories which are:

- Work / Employment (commuting and business);
- Education (education); and
- Other (shopping, other services and visiting friends and relatives)

- 7.3.3 This is confirmed and quantified for the AM peak hour (08:00-09:00) and PM peak hour (17:00-18:00) assessment periods in **Table 7-3**.

**Table 7-3: Journey Purpose by Resident (2008/12 National Travel Survey Table NTS0502)**

JOURNEY PURPOSE	CATEGORIES	AM (08:00-09:00)	PM (17:00-18:00)
Work/ Employment	Commuting & Business	28%	37%
Education	Education	48%	4%
Other	Shopping, Other Services & Visiting Friends	24%	59%
<b>Total</b>		<b>100%</b>	<b>100%</b>

- 7.3.4 Person trips by journey purpose for the proposed development are set out in **Table 7-4**.



Table 7-4: Person Trips by Journey Purpose

JOURNEY PURPOSE	AM (08:00-09:00)			PM (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Work/ Employment	55	153	209	149	99	248
Education	95	263	358	16	11	27
Other	48	131	179	237	158	395
<b>Total</b>	<b>198</b>	<b>547</b>	<b>745</b>	<b>403</b>	<b>267</b>	<b>670</b>

## 7.4 MODAL SPLIT

### WORK/EMPLOYMENT TRIPS

- 7.4.1 As has been agreed for the other applications, modal split estimations have been identified from the 2011 Census data for 'journeys to work' in the ward of Cherwell 012 (excluding those working from home). **Table 7-5** summarises these modal split assumptions.

Table 7-5: Anticipated Modal Split

METHOD OF TRAVEL	BASELINE MODAL SHARE
Underground/Metro/Light Rail/Tram	0.1%
Train	4.4%
Bus/Minibus/Coach	4.3%
Taxi	0.1%
Motorcycle/Scooter/Moped	0.6%
Driving a Car/Van	71.6%
Passenger in a Car/Van	6.2%
Bicycle	3.4%
On Foot	9.2%
Other	0.2%
<b>Total</b>	<b>100%</b>

- 7.4.2 The mode share set out above has been applied to the person trips for work/employment purpose as set out in **Table 7-4**. As such, **Table 7-6** presents the total person trips for employment purposes by mode.



Table 7-6: Person Trips for Employment Purpose by Mode

MODE	AM (08:00-09:00)			PM (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Underground/Metro/Light Rail/Tram	0	0	0	0	0	0
Train	2	7	9	7	4	11
Bus/Minibus/Coach	2	7	9	6	4	11
Taxi	0	0	0	0	0	0
Motorcycle/Scooter/Moped	0	1	1	1	1	1
Driving a Car/Van	39	110	150	107	71	178
Passenger in a Car/Van	3	9	13	9	6	15
Bicycle	2	5	7	5	3	8
On Foot	5	14	19	14	9	23
Other	0	0	0	0	0	0
<b>Total</b>	<b>55</b>	<b>153</b>	<b>209</b>	<b>149</b>	<b>99</b>	<b>248</b>

## EDUCATION TRIPS

- 7.4.3 As has been agreed for other applications, in order to estimate the appropriate modal split for trips made for education purposes, a combination of 2011 Census data and the National Travel Survey was considered. The 2011 Census data estimates that for the Cherwell 012 ward, 54% of school aged children attend primary school while 46% of school aged children attend secondary school.
- 7.4.4 It is accepted that due to the location of the Gagle Brook Primary School within the Exemplar Scheme and the close proximity of the Application Site, all primary school aged children from the proposed development will be afforded a place at this school. It is also noted that S106 Contributions are being sought to expand the Gagle Brook Primary School, which would suggest that even if there were insufficient places at the school at present, there will be more than adequate provision for the primary school children associated with the proposed development in the future.
- 7.4.5 Secondary schools are proposed as part of the delivery of the wider North West Bicester Eco Town, but there are a number of existing secondary schools in Bicester that are within 2.0 miles of the Application Site, namely the Cooper School (1.7 miles), Bicester School (1.8 miles), and the Bardwell School (2.0 miles).
- 7.4.6 It is therefore assumed that based on the school catchment areas and as set out in the National Travel Survey (NTS0614) that primary school children will travel less than a mile, while secondary school children will travel between one and two miles. The mode shares are set out in **Table 7-7**.

Table 7-7: NTS Education Mode Share for Education Trip Purpose

METHOD OF TRAVEL	PRIMARY SCHOOL MODE SHARE – LESS THAN 1 MILE	SECONDARY SCHOOL MODE SHARE – 1 TO 2 MILES
Car	20%	26%
Walk or Cycle	80%	62%
Bus	0%	11%
Other	0%	1%
<b>Total</b>	<b>100%</b>	<b>100%</b>

- 7.4.7 The mode share set out above has been applied to the person trips for education purposes as set out in **Table 7-7**. As such, **Table 7-8** presents the total person trips for education purposes by mode.





Table 7-8: Person Trips for Education Purpose by Mode

MODE	AM (08:00-09:00)			PM (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Car	22	60	81	4	3	6
Walk or Cycle	68	189	257	11	8	19
Bus	5	13	18	1	1	1
Other	0	1	2	0	0	0
<b>Total</b>	<b>95</b>	<b>263</b>	<b>358</b>	<b>16</b>	<b>11</b>	<b>27</b>

## OTHER PURPOSE TRIPS

7.4.8

It has been assumed that journeys made for other purposes will have the same mode share as that of employment. Therefore, the anticipated modal split from 2011 Census journey to work data for the Cherwell 012 ward, as summarised in **Table 7-5**, has been applied to the person trips for Other purposes and are as set out in **Table 7-9**.

Table 7-9: Person Trips for Other Purposes by Mode

MODE	AM (08:00-09:00)			PM (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Underground/Metro/Light Rail/Tram	0	0	0	0	0	0
Train	2	6	8	10	7	17
Bus/Minibus/Coach	2	6	8	10	7	17
Taxi	0	0	0	0	0	0
Motorcycle/Scooter/Moped	0	1	1	1	1	2
Driving a Car/Van	34	94	128	170	113	283
Passenger in a Car/Van	3	8	11	15	10	24
Bicycle	2	4	6	8	5	13
On Foot	4	12	16	22	15	36
Other	0	0	0	0	0	1
<b>Total</b>	<b>48</b>	<b>131</b>	<b>179</b>	<b>237</b>	<b>158</b>	<b>395</b>

## TOTAL DEVELOPMENT TRIPS

7.4.9

**Table 7-10** shows the total multi-modal trips generated by the proposed development.



Table 7-10: Total Person Trips by Mode

MODE	AM (08:00-09:00)			PM (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Underground/Metro/Light Rail/Tram	0	0	0	0	0	1
Train	5	12	17	17	11	28
Bus/Minibus/Coach	9	26	35	17	12	29
Taxi	0	0	0	0	0	1
Motorcycle/Scooter/Moped	1	2	2	2	2	4
Driving a Car/Van	95	263	359	280	187	467
Passenger in a Car/Van	6	18	24	24	16	40
Bicycle	4	10	13	13	9	22
On Foot	78	215	292	47	32	79
Other	1	2	2	1	1	1
<b>Total</b>	<b>198</b>	<b>547</b>	<b>746</b>	<b>402</b>	<b>268</b>	<b>671</b>

## CONTAINMENT OF TRIPS

7.4.10 Development Principle 6(a) of the North West Bicester SPD – *Sustainable Transport – Modal Share and Containment*, notes at paragraph 4.115 that the target level of containment for the schemes within the Eco Town is for at least 35% of trips to be within North West Bicester and 60% to be within Bicester as a whole, that is 40% or less travelling outside of Bicester.

7.4.11 It is noted that the *Interim Access and Travel Strategy* provides details of the containment of trips by journey purpose that are associated with the residential element of the development at Table 3. For ease of reference, Table 3 from this document is replicated below at **Table 7-11**.

Table 7-11: Containment Assumptions of Resident Trips by Journey Purpose

JOURNEY PURPOSE	% INTERNAL TRIPS IN NW BICESTER	% TRIPS IN BICESTER	% TRIPS OUTSIDE BICESTER
Commuting	10%	30%	60%
Business	10%	30%	60%
Education	65%	15%	20%
Shopping	30%	30%	40%
Other Services	50%	20%	30%
Visiting Friends/Relatives	15%	30%	55%

7.4.12 The journey purpose categories within **Table 7-11** above have been grouped into three core categories and the averages are set out within **Table 7-12**.

Table 7-12: Containment Assumptions of Resident Trips by Core Journey Purpose

JOURNEY PURPOSE	% INTERNAL TRIPS IN NW BICESTER	% TRIPS IN BICESTER	% TRIPS OUTSIDE BICESTER
Work/ Employment	10%	30%	60%
Education	65%	15%	20%
Other	32%	27%	41%



- 7.4.13 The containment of trips within North West Bicester and Bicester town is a key principle of the SPD and paragraph 4.119 states that “*Planning applications should include Travel Plans which demonstrate how the design will enable 50% of trips originating on the development to be made by non-car means with the potential to increase to 60% by 2020.*” As this outline application is being submitted in 2021, and it is acknowledged that there is a strong level of connectivity from the Application Site to the surrounding area within the North West Bicester Masterplan, car drivers are assumed to make up 40% of the total person trips originating within the Application Site. The remaining 60% are expected to be person trips made by sustainable means of transport, including by foot, cycle, and public transport to be consistent with the aspirations of the SPD. **Table 7-13** presents the total number of vehicle trips predicted to be associated with the Application Site.

**Table 7-13: Total Vehicular Trips – 40% of Total Person Trips**

MODE	AM (08:00-09:00)			PM (17:00-18:00)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Vehicles	79	219	298	161	107	268

## 7.5 TRIP DISTRIBUTION

- 7.5.1 Whilst there may have been the opportunity to obtain details of the development traffic distributions from the BTM, as part of the scoping process, OCC confirmed that the distribution of development traffic should be in line with that which was agreed for the Home Farm application (Planning Ref 18/00484/OUT). This is set out within the pre-application response dated the 08<sup>th</sup> of December 2021, a copy of which is included at **APPENDIX B**.

- 7.5.2 This distribution profile was set out in the October 2018 TA prepared by PBA as part of the Home Farm application and was agreed by OCC in their consultation response dated the 2<sup>nd</sup> of November 2018. As the Home Farm Scheme is included within the Proposed Development area and will utilise the same junction of Charlotte Avenue/B4100 Banbury Road and the alternative junction from the Exemplar Scheme at Braeburn Avenue/B4100 Banbury Road, the same distribution profile is proposed to be adopted for traffic associated with the Application Site. The trip distribution is set out within **Table 7-14**.

**Table 7-14: Distribution of Vehicle Trips**

METHOD OF TRAVEL	BASELINE MODAL SHARE
North	15.6%
East	17.8%
South	16.7%
West	49.9%

- 7.5.3 To clearly present this distribution profile as agreed with OCC, **Diagram 3** has been prepared, a copy of which is included at **APPENDIX F**. By applying the agreed distribution profile set out within **Table 7-14** to the identified vehicular trips set out within **Table 7-13**, **Diagrams 4** and **5** present the identified development traffic flows for each of the identified Site Access junctions for the Application Site. These Diagrams are also contained at **APPENDIX F**.



# 8 PROPORTIONAL IMPACT ANALYSIS

## 8.1 INTRODUCTION

- 8.1.1 This section of the TA assesses the traffic impact on the road network following completion of the proposed development. For the purposes of this assessment, a Future Year of 2031 has been assessed, as this is the available year of the BTM and the end year of CDC's Local Plan period.
- 8.1.2 It has been agreed with OCC that the BTM is the most appropriate tool to forecast future year traffic flows and data has been provided by Tetra Tech, the consultants responsible for the BTM and appointed by OCC, to undertake the assessment.
- 8.1.3 For completeness, the output data for the future year of 2031 from the BTM, which excludes traffic associated with the Application Site, has been presented on **Diagrams 6 and 7**, which are included at **APPENDIX F**.
- 8.1.4 The proportional impact of the development traffic on the junctions listed below is assessed within this section:
- B4100 / A43 Baynards Green Roundabout Junction
  - B4100 / A4095 / Banbury Road / A4095 Roundabout Junction
  - A4095 / Buckingham Road / Skimmingdish Lane / A4421 Roundabout Junction
  - A4095 / Middleton Stoney Road / Vendee Drive / B4030 Roundabout Junction
  - B4100 Banbury Road / Braeburn Avenue Priority Junction
  - B4100 Banbury Road / Charlotte Avenue Priority Junction
- 8.1.5 The following scenarios have been agreed with OCC and the traffic flow diagrams for each of these scenarios are included within **APPENDIX F**. As part of the impact analysis, the following scenarios have been assessed:
- Base Year taken from the 2016 BTM (Diagrams 1 & 2)
  - 2031 Do Minimum – This includes the consented developments and planned infrastructure within the town that is expected to be delivered by 2031 but does not include the Application Site of up to 550 dwellings. This gives visibility on the predicted traffic on the identified junctions without any traffic associated with the proposed development for the purposes of comparison. (Diagrams 6 & 7)
  - 2031 Do Something – This includes the vehicles generated by our development to understand the proportional impacts on the junctions set out above. (Diagrams 8 & 9)
- 8.1.6 A copy of the Tetra Tech technical information setting out the cumulative developments that are included within the 2031 BTM, is set out within the Uncertainty Logs included at **APPENDIX E**.



## 8.2 JUNCTION IMPACTS

### B4100/A43 BAYNARDS GREEN ROUNDABOUT JUNCTION

8.2.1 **Table 8-1** details the percentage impacts of the development on the B4100/A43 Baynards Green roundabout junction when compared to the 2031 Do Minimum scenario.

**Table 8-1: Proportional Impact on the B4100/A43 Baynards Green Roundabout Junction**

	2016 BTM FLOWS		2031 DO MINIMUM		2031 DO SOMETHING			
	AM	PM	AM	PM	AM		PM	
					Flow	% Impact	Flow	% Impact
B4100 (E)	467	570	745	1066	779	4.6%	1083	1.6%
A43 (S)	1371	1818	1834	2779	1838	0.2%	2788	0.3%
B4100 (W)	429	288	308	138	312	1.0%	145	4.6%
A43 (N)	1734	1494	2637	1788	2642	0.2%	1798	0.5%
<b>Total</b>	<b>4001</b>	<b>4171</b>	<b>5524</b>	<b>5772</b>	<b>5571</b>	<b>0.8%</b>	<b>5813</b>	<b>0.8%</b>

### B4100/A4095/BANBURY ROAD/A4095 ROUNDABOUT JUNCTION

8.2.2 **Table 8-2** details the percentage impacts of the development on the B4100/A4095/Banbury Road/A4095 roundabout junction when compared to the 2031 Do Minimum scenario.

**Table 8-2: Proportional Impact on B4100/A4095/Banbury Road/A4095 Roundabout Junction**

	2016 BTM FLOWS		2031 DO MINIMUM		2031 DO SOMETHING			
	AM	PM	AM	PM	AM		PM	
					Flow	% Impact	Flow	% Impact
B4100 (N)	737	579	1266	1082	1451	14.6%	1172	8.3%
A4095 (E)	1009	967	1173	1289	1190	1.4%	1323	2.6%
Banbury Road	196	326	485	615	493	1.6%	631	2.6%
A4095 (W)	461	727	501	638	517	3.2%	670	5.0%
<b>Total</b>	<b>2402</b>	<b>2599</b>	<b>3426</b>	<b>3624</b>	<b>3652</b>	<b>6.6%</b>	<b>3796</b>	<b>6.2%</b>

### A4095/BUCKINGHAM ROAD/SKIMMINGDISH LANE/A4421 ROUNDABOUT JUNCTION

8.2.3 **Table 8-3** details the percentage impacts of the development on the A4095/Buckingham Road/Skimmingdish Lane/A4421 roundabout junction when compared to the 2031 Do Minimum scenario.

**Table 8-3: Proportional Impact on A4095/Buckingham Road/Skimmingdish Lane/A4421 Roundabout Junction**

	2016 BTM FLOWS		2031 DO MINIMUM		2031 DO SOMETHING			
	AM	PM	AM	PM	AM		PM	
					Flow	% Impact	Flow	% Impact
A4421	1097	572	1301	1056	1308	0.5%	1070	1.4%
A4095 (E)	581	1081	936	1528	945	1.0%	1548	1.3%
Buckingham Rd	387	438	425	423	425	0.0%	423	0.0%
A4095 (W)	800	819	1145	1088	1191	4.0%	1110	2.1%
<b>Total</b>	<b>2865</b>	<b>2911</b>	<b>3806</b>	<b>4095</b>	<b>3869</b>	<b>1.7%</b>	<b>4151</b>	<b>1.5%</b>





#### A4095/MIDDLETON STONEY ROAD/VENDEE DRIVE/B4030 ROUNDABOUT JUNCTION

8.2.4

**Table 8-4** details the percentage impacts of the development on the A4095/Middleton Stoney Road/Vendee Drive/B4030 roundabout junction when compared to the 2031 Do Minimum scenario.

**Table 8-4: Proportional Impact on A4095/Middleton Stoney Rd/Vendee Dr/B4030 Roundabout Junction**

	2016 BTM FLOWS		2031 DO MINIMUM		2031 DO SOMETHING			
	AM	PM	AM	PM	AM		PM	
					Flow	% Impact	Flow	% Impact
A4095 Howes Lane	749	335	740	570	857	15.7%	627	10.0%
B4030	262	241	971	1060	979	0.8%	1076	1.5%
Vendee Drive	307	755	541	926	571	5.5%	987	6.6%
Middleton Stoney Road	274	249	659	590	664	0.7%	600	1.6%
<b>Total</b>	<b>1592</b>	<b>1581</b>	<b>2912</b>	<b>3147</b>	<b>3070</b>	<b>5.5%</b>	<b>3290</b>	<b>5.0%</b>

#### B4100 BANBURY ROAD/BRAEBURN AVENUE PRIORITY JUNCTION

8.2.5

**Table 8-5** details the percentage impacts of the development on the B4100 Banbury Road/Braeburn Avenue priority junction when compared to the 2031 Do Minimum scenario.

**Table 8-5: Proportional Impact on B4100 Banbury Road/Braeburn Avenue Priority Junction**

	2016 BTM FLOWS		2031 DO MINIMUM		2031 DO SOMETHING			
	AM	PM	AM	PM	AM		PM	
					Flow	% Impact	Flow	% Impact
B4100 (E)	447	548	662	915	717	8.3%	1006	10.0%
Braeburn Avenue	0	0	69	123	206	197.4%	190	54.2%
B4100 (W)	707	707	1138	939	1150	1.1%	964	2.7%
<b>Total</b>	<b>1154</b>	<b>1255</b>	<b>1869</b>	<b>1977</b>	<b>2073</b>	<b>10.9%</b>	<b>2160</b>	<b>10.3%</b>

#### B4100 BANBURY ROAD/CHARLOTTE AVENUE PRIORITY JUNCTION

8.2.6

**Table 8-6** details the percentage impacts of the development on the B4100 Banbury Road/Charlotte Avenue priority junction when compared to the 2031 Do Minimum scenario.

**Table 8-6: Proportional Impact on B4100 Banbury Road/Charlotte Avenue Priority Junction**

	2016 BTM FLOWS		2031 DO MINIMUM		2031 DO SOMETHING			
	AM	PM	AM	PM	AM		PM	
					Flow	% Impact	Flow	% Impact
B4100 (E)	693	549	1149	931	1269	10.4%	996	7.1%
Charlotte Avenue	59	49	159	160	242	51.4%	200	25.1%
B4100 (W)	441	572	972	1093	1039	6.9%	1228	12.4%
<b>Total</b>	<b>1192</b>	<b>1169</b>	<b>2281</b>	<b>2183</b>	<b>2550</b>	<b>11.8%</b>	<b>2425</b>	<b>12.3%</b>



# 9 JUNCTION MODELLING

## 9.1 INTRODUCTION

9.1.1 This section of the TA models the junctions most impacted by the proposed development traffic.

9.1.2 As agreed with OCC and HE at the meeting on the 12<sup>th</sup> of March 2021, a copy of the meeting note is contained at **APPENDIX B**, due to the approved/proposed mitigation measures at the identified junctions beyond the existing priority junctions with the B4100 Banbury Road from the Exemplar Scheme, as part of this TA we would only undertake modelling of the site access junctions:

- B4100 Banbury Road/Charlotte Avenue; and
- B4100 Banbury Road/Braeburn Avenue.

9.1.3 Confirmation of the improvements to the M40 Junction 9 and Junction 10 arrangements was provided by HE at the recent meeting. For the M40 Junction 9 arrangement, a 'pinch point' scheme has been agreed, but at the time of preparing this TA, no details had been forthcoming from HE in relation to this improvement, with the exception of a LinSig file from 2013/14. It is expected that HE will request financial contributions towards the proposed improvement scheme at Junction 9 in line with the identified impact associated with the Application Site.

9.1.4 The improvements to the M40 Junction 10 arrangement have been agreed as part of the Heyford Park application. This is as confirmed in the report to planning committee dated the 05<sup>th</sup> of November 2020 for that scheme, which received an officer recommendation for approval, but has yet to be determined. Both HE and OCC confirmed that they had no further objections to the Heyford Park application within the committee report and that the mitigation to the M40 Junction 10 arrangement had been agreed. This mitigation is assumed to be in line with the proposed roundabout scheme that has been prepared in Draft, the details of which are included at **APPENDIX M**. It is expected that HE will request financial contributions towards the proposed improvement scheme(s) at Junction 10 in line with the identified impact associated with the Application Site.

9.1.5 Whilst it is acknowledged that the greatest degree of traffic impact from the Application Site will be at the B4100/A4095/Banbury Road/A4095 roundabout junction, OCC have prepared a number of improvement options for this junction, which were published for consultation from the 19<sup>th</sup> of March 2021 to the 09<sup>th</sup> of April 2021. These options and the associated consultation information, is included at **APPENDIX N**. It is expected that as part of the design of these improvements, the traffic associated with the Application Site will have been included within the assessment as the Application Site forms part of the North West Bicester Masterplan, an allocated development identified within the Local Plan at Policy Bicester 1. It is expected that OCC will request financial contributions towards the proposed improvement scheme at the junction in line with the identified impact associated with the Application Site.



- 9.1.6 OCC have confirmed that the existing roundabout junction of the A4095/Buckingham Road/Skimmingdish Lane/A4421 is proposed to be improved as part of the Eastern Peripheral Route scheme. As such, no assessments are to be undertaken at this junction due to the fact that the traffic associated with the Application Site will be included within the future assessment of these improvements as the Application Site forms part of the North West Bicester Masterplan, an allocated development identified within the Local Plan at Policy Bicester 1. It is expected that OCC will request financial contributions towards the proposed improvement scheme at the junction in line with the identified impact associated with the Application Site.
- 9.1.7 The remaining off-site junction that OCC have requested we consider is the roundabout junction of the A4095/Middleton Stoney Road/Vendee Drive/B4030. This junction forms the southern part of the permitted Strategic Highway Link (Planning Ref 14/01968/F), which was consented on the 21<sup>st</sup> of August 2019 and is understood to have commenced construction. For ease of reference, the permitted Highway Layout Masterplan and the Detailed General Arrangement Plan (Sheet 4 of 5), which specifically includes the roundabout junction in question, are included at **APPENDIX O** of this TA. Similar to the above mentioned junction improvements, the traffic associated with the Application Site will have been included within the assessment of the Strategic Highway Link and more specifically, the junction of the A4095/Middleton Stoney Road/Vendee Drive/B4030, as the Application Site forms part of the North West Bicester Masterplan, an allocated development identified within the Local Plan at Policy Bicester 1. It is expected that OCC will request financial contributions towards the proposed improvement scheme at the junction in line with the identified impact associated with the Application Site.

## 9.2 JUNCTION ASSESSMENT

- 9.2.1 Junction assessments of the two site access junctions has been undertaken using standard industry software (PICADY and LinSig).
- 9.2.2 The PICADY results for both of the existing priority junctions of Charlotte Avenue and Braeburn Avenue with the B4100 Banbury Road are set out in **Table 9-1** and **Table 9-2** below.

**Table 9-1: B4100 Banbury Road/Charlotte Avenue – 2031 - Do Something PICADY**

ARM	AM PEAK HOUR			PM PEAK HOUR		
	RFC	QUEUE (PCU)	DELAY (S)	RFC	QUEUE (PCU)	DELAY (S)
<b>B4100 (N)</b>	-	-	-	-	-	-
<b>Charlotte Avenue</b>	0.87	5.2	79.67	0.77	3.1	56.10
<b>B4100 (S)</b>	0.09	0.1	7.61	0.01	0.0	7.89

**Table 9-2: B4100 Banbury Road/Braeburn Avenue – 2031 - Do Something PICADY**

ARM	AM PEAK HOUR			PM PEAK HOUR		
	RFC	QUEUE (PCU)	DELAY (S)	RFC	QUEUE (PCU)	DELAY (S)
<b>B4100 (N)</b>	-	-	-	-	-	-
<b>Braeburn Avenue</b>	0.48	0.9	22.78	0.35	0.5	21.98
<b>B4100 (S)</b>	0.18	0.2	6.99	0.15	0.2	7.71



- 9.2.3 The Charlotte Avenue junction is shown to be slightly over the recommended capacity (0.85 RFC) as a priority junction with the 2031 Do Something flows, largely due to the volume of traffic on the B4100 Banbury Road leading to delays for traffic turning out of the development, with a queue of approximately 5 vehicles developing on Charlotte Avenue on the approach to the junction from within the Exemplar Scheme. This demonstrates that the existing priority junction would provide sufficient capacity to accommodate the 2031 Do Something flows, which consist of the Do Minimum flows extracted from the BTM with the proposed development traffic flows manually added to the network. However, it is acknowledged that the existing priority junction is expected to operate close to the recommended maximum capacity of 0.85 RFC in the future.
- 9.2.4 As the 2031 Do Something flows from the BTM do not include the full build out of the 6,000 NW Bicester Eco Town development and as part of the OCC proposals for the improvements to the B4100 Banbury Road/A4095 roundabout, it is proposed to design and model a signalised junction as this would provide improved performance, while also providing better pedestrian facilities across the junction. A copy of the indicative signalised junction is presented at **APPENDIX P**.
- 9.2.5 **Table 9-3** presents the results from the LinSig modelling of the proposed signalised junction at this location. This demonstrates that a signalised junction would provide sufficient capacity to accommodate the 2031 Do Something flows extracted from the BTM but should also provide capacity to accommodate the full North West Bicester allocation.

**Table 9-3: B4100 Banbury Road/Charlotte Avenue – 2031 - Do Something LinSig**

ARM	AM PEAK HOUR		PM PEAK HOUR	
	DOS	MEAN MAX QUEUE (PCU)	DOS	MEAN MAX QUEUE (PCU)
<b>B4100 (N)</b>	86.9	25.9	66.2	13.1
<b>Charlotte Avenue</b>	82.5	7.9	78.6	6.5
<b>B4100 (S)</b>	68.9	15.0	78.0	19.8

- 9.2.6 As demonstrated in **Table 9-1** and **Table 9-2** the modelling for the existing junction layout has indicated it could accommodate the 2031 BTM Do Something flows, which consist of the Do Minimum flows extracted from the BTM with the proposed development traffic flows manually added to the network, before requiring an upgrade to a signalised junction layout. As such it will not be required to reconfigure this junction to a signalised arrangement until a point in time towards the end of the 2031 build out of the development. It is expected that OCC will request financial contributions towards the proposed improvement scheme at the junction in line with the identified impact associated with the Application Site and consistent with what was requested from the Home Farm Scheme (Planning Ref 18/00484/OUT).



# 10 MITIGATION STRATEGY

## 10.1 INTRODUCTION

10.1.1 While the proposed development is not expected to require any specific mitigation that has not been identified by the wider strategy to deliver the allocated development of the North West Bicester Masterplan, and sustainable travel is embedded in the scheme design and transport strategy, a number of management plans will be implemented to ensure the development operates efficiently. It is expected that these plans will be secured by planning condition or obligation.

10.1.2 These plans may include, but are not limited to, the following:

- Construction Environment Plan (CEMP)
- Construction Traffic Management Plan (CTMP)
- Residential Travel Plan (RTP)

## 10.2 OFFSITE HIGHWAY IMPROVEMENTS

10.2.1 In order to ascertain the likely off-site mitigation measures associated with the wider North West Bicester Masterplan, a review of the recently consented scheme at Himley Village (Planning Ref 14/02121/OUT), which was permitted on the 30<sup>th</sup> of January 2020, has been undertaken, with particular regard to the Section 106 Agreement. The following measures have been identified and are considered measures to directly mitigate the full impacts of the North West Bicester Masterplan, of which the Application Site is included:

- Signalisation of the B4100 Banbury Road/Charlotte Avenue junction;
- Replacement of the B4100 Banbury Road/A4095 roundabout with traffic signals; and
- Traffic management measures on the B4100 Banbury Road/Aunt Ems Lane to reduce traffic levels and accident issues;

10.2.2 The following strategic improvements were also identified to which all developments included within the North West Bicester Masterplan would anticipate contributing towards in a manner proportionate to the impact from the respective Application Sites:

- The A4095 Strategic Highway Link;
- Town Centre access improvements;
- Modifications to the A4421 Skimmingdish Lane/A4095 junction;
- Improvements to the Eastern Peripheral Route;
- Traffic calming measures in Bucknell and Caversfield to reduce through traffic; and
- Measures to further reduce through traffic and assist walkers and cyclists in the Shakespeare Drive area.





### 10.3 SUMMARY OF PREVIOUSLY AGREED S106 CONTRIBUTIONS

10.3.1 Whilst the Exemplar Scheme would be the most appropriate scheme to consider when reviewing the Section 106 Obligations, it is acknowledged that this scheme received planning permission on the 10<sup>th</sup> of July 2012, which was before a lot of the technical assessments of strategic infrastructure had been undertaken and certainly before the North West Bicester SPD had been adopted. As such, in order to ensure a robust consideration of the Section 106 Obligations that have been agreed to date, the Himley Village Section 106 (dated the 30<sup>th</sup> of January 2020) and the Home Farm Section 106 Heads of Terms (dated June 2018) have been considered.

10.3.2 **Table 10-1** summarises the relative highway contributions associated with these key developments.

**Table 10-1: Summary of Section 106 Highway Contributions**

DESCRIPTION OF CONTRIBUTION	HIMLEY VILLAGE (1,700 UNITS)		HOME FARM (75 UNITS)	
	Total Contribution	Contribution per unit	Total Contribution	Contribution per unit
Bus Infrastructure	£59,180.00	£34.81		
Bus Services	£1,443,245.00	£848.97	£86,252.00	£1,150.03
Bus Services (interim)	£1,050,000.00	£617.65		
Cycle Improvements	£312,058.00	£183.56	£2,796.00	£37.28
Highways (A4095/B4100)	£356,591.00	£209.76	£36,174.00	£482.32
Public Rights of Way	£31,675.00	£18.63	£2,418.00	£32.24
School Transport	£266,00.00	£156.47		
Shakespeare Drive	£675,192.00	£397.17		
Traffic Calming (Middleton Stoney Road)	£73,097.00	£43.00	£4,298.00	£57.31
Caversfield Junction			£1,828.00	£24.37
Signalisation of Charlotte Avenue			£6,146.00	£81.95
Footpath Improvements			£38,187.00	£509.16
Travel Plan Monitoring	£9,840.00	£5.79	£1,240.00	£16.53
<b>Total</b>	<b>£4,279,878.00</b>	<b>£2,515.81</b>	<b>£179,339.00</b>	<b>£2,391.19</b>

### 10.4 MANAGEMENT PLANS

#### FRAMEWORK RESIDENTIAL TRAVEL PLAN

10.4.1 In accordance with OCC's online guidance on "Travel Plans, Statement and Advice" a Framework Residential Travel Plan has been prepared for the site. The Residential Travel Plan should be read in conjunction with this TA and is provided as a standalone document.

10.4.2 The Residential Travel Plan sets out a suite of measures, targets, and strategies to encourage the reduction of single occupancy private car trips associated with the proposed development, as well as providing measures to reduce single occupancy car trips in the surrounding areas adjacent to the site. The Residential Travel Plan constitutes a working document, given that the proposals will have a build out period of a number of years. The Residential Travel Plan will be regularly monitored, reviewed, and updated as the site develops, as part of a commitment to ensuring traffic impacts from the development are minimised, and in order to ensure that emerging and new technologies and travel practices are fully considered.



- 10.4.3 The Residential Travel Plan sets out holistic packages of measures tailored to the needs and travel behaviours of residents, based on current knowledge and technology, designed to reduce single occupancy car use associated with the proposed development by supporting and providing alternative forms of transport and reducing the need to travel where possible and practical. These measures will be integrated into the design, marketing, and occupation phases of the Application Site. The Residential Travel Plan will also assist in minimising localised levels of traffic congestion and improving the environmental quality of the area in line with local and national policy aims and objectives.
- 10.4.4 The Residential Travel Plan provides an anticipated baseline modal split calculated using the person trips rates included in this document along with supporting calculations derived from Census and School NTS data.
- 10.4.5 The Residential Travel Plan includes initial targets with an on-going commitment to re-survey, and to work towards the targets set, or revised targets as necessary, as the site continues to be developed. These targets are consistent with those set out within the adopted SPD.
- 10.4.6 The overall aim/objective of the Residential Travel Plan is to minimise the impact of travel on the local and wider environment and to promote sustainable travel choices, such as walking, cycling, and public transport.
- 10.4.7 The Residential Travel Plan is expected to be secured by planning condition or obligation.



# 11 CONCLUSIONS

- 11.1.1 Velocity Transport Planning (VTP) has been appointed by Firethorn Trust (The Applicant) to prepare this Transport Assessment (TA) providing highways and transport planning advice for an outline planning application relating to the development of up to 530 dwellings on land which forms part of the North West Bicester Eco Town development located in Oxfordshire in England.
- 11.1.2 The outline planning application is described as follows:
- “Outline planning application for residential development (within Use Class C3), open space provision, access, internal estate roads, vehicle and cycle parking, drainage and all associated works and operations including but not limited to demolition, earthworks and engineering operations, with the details of appearance, landscaping, layout and scale reserved for later determination.”*
- 11.1.3 Whilst it is acknowledged that the application is for up to 530 dwellings, in order to ensure a robust assessment as part of this TA, up to 550 dwellings have been considered. The scope and assessment methodology has been discussed and agreed with the local highway authority – Oxfordshire County Council (OCC) and the strategic highway authority – Highways England (HE). The following conclusions have been drawn from the assessment work undertaken.
- 11.1.4 A comprehensive transport strategy has been developed for the site which provides for essential access and local highway infrastructure together with measures which seek to encourage movement by walking, cycling, and public transport.
- 11.1.5 A network of routes for pedestrians and cyclists will be provided within the site which would link the Application Sites internal spaces and local services via safe and convenient routes.
- 11.1.6 In terms of demonstrating that the development proposal conforms with national and local transport policy, the proposed access strategy for the development gives priority to pedestrian and cycle movements, as well as the E1 bus service. In terms of sustainable travel choices, the proposed access strategy will provide strong pedestrian and cycle links between the Application Site, the wider Eco Town, and surrounding areas and supports the wider walking and cycling access strategy of the North West Bicester Masterplan.
- 11.1.7 It is proposed that vehicular access to the two parcels of land will be provided from the Estate Road, which is identified as being Charlotte Avenue to the south of the existing bus gate, and Braeburn Avenue to the north of the existing bus gate, and from an extension of the existing highway arrangement provided within the Exemplar Scheme. Details of the site access junctions are set out within this TA, including drawings and the general design specifications following a Stage 1 Road Safety Audit being undertaken.
- 11.1.8 The design of the new internal access roads will be in accordance with local design standards, as set out within the OCC Residential Road Design Guide (2<sup>nd</sup> Edition – 2015) and Manual for Streets (MfS).
- 11.1.9 The provision and layout of car parking across the Application Site will be made in accordance with the standards and policy set out by Cherwell District Council and Oxfordshire County Council at the reserved matters stage. The Application Site would look to achieve a provision of between one and two allocated parking spaces per dwelling, plus additional unallocated parking spaces to be provided off-plot and on-street. The provision and layout of car parking is to be resolved as part of future reserved matters submissions.



- 11.1.10 Cycle parking provision will be provided in accordance with the relevant cycle parking standards and the design and layout is to be agreed with the planning and highway authorities as part of future reserved matters submissions.
- 11.1.11 As part of the development proposal, a temporary construction access to enable construction traffic to access/egress the Eastern Parcel during the construction phase will be provided along the B4100 Banbury Road in the approximate location of an existing field gate at the north western corner of the Application Site.
- 11.1.12 The methodology used for the trip generation assessment is consistent with that set out in the *Interim Access & Travel Strategy* (Hyder Consulting, March 2014) document prepared to support the assessment of the wider North West Bicester Masterplan and has been used to forecast the predicted travel demand for the development by all modes of travel.
- 11.1.13 As agreed during scoping discussions with OCC and HE, the Bicester Transport Model (BTM) has been confirmed as the appropriate tool to identify the forecast future year traffic flows. This traffic generation has been used at the request of OCC as the basis for assessing the traffic impact.
- 11.1.14 Traffic modelling has been undertaken using the data from the BTM for the future year of 2031, which includes all committed and planned developments, as set out within the adopted Cherwell District Council Local Plan and as such it is the maximum growth scenario. The 2031 Future year traffic flows derived from the BTM have been used to undertake local network analysis and junction capacity testing.
- 11.1.15 As part of any planning permission granted for the development proposal and in response to requests made by Oxfordshire County Council, the applicant will agree to Section 106 financial contributions to fund off-site highway improvement works identified by Oxfordshire County Council and Highways England to deliver the North West Bicester Masterplan.
- 11.1.16 Having agreed the trip rates associated with the proposed development with OCC, which are in line with the previous assessments undertaken in support of the wider North West Bicester Masterplan, agreed the distribution of the development traffic flows with OCC through the scoping discussions, which are in line with the agreed distributions for the Home Farm application, and utilised traffic flows provided from the BTM, it is expected that the level of traffic impact at the identified off-site junctions has been clearly defined. It is expected that both the local and strategic highway authorities will request proportionate financial contributions towards the agreed highway mitigation proposals for these schemes, which will in turn be set out within the Section 106 Agreement.

## 11.2 SUMMARY

- 11.2.1 This Transport Assessment demonstrates that the Application Site follows the same principles and methodology that has been established for the North West Bicester Masterplan and supports the movement and access strategy of the CDC North West Bicester Supplementary Planning Document.
- 11.2.2 The Transport Assessments demonstrates that the development conforms with national and local transport polices and that the access strategy for the site encourages sustainable travel choices. The traffic generation forecast for the development in the wider context of the Eco Town development will not have a significant impact on the local highway network.



