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NW Bicester Exemplar Local Centre

Transport Assessment

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1 Introduction

1.1 Overview

Hyder Consulting has been commissioned by A2Dominion Developments Ltd to prepare a Transport Assessment in support of their proposals for the NW Bicester Exemplar Local Centre. The Local Centre has outline consent as part of the Hybrid planning application for the NW Bicester Exemplar Development (comprising the local centre, 393 homes, primary school and 1,800m^2 of eco business centre).

This application is a detailed application in recognition of proposed changes in the overall total and use of floor space. The Application is for a new local centre comprising a 503 sq.m convenience store (Use Class A1), 444 sq.m of retail units (flexible Use Class A1/A3/A5), 664 sq.m public house (Use Class A4), 523 sq.m community hall (Use Class D1), 869 sq.m nursery (Use Class D1), 614 sq.m of commercial units (flexible Use Class A2/ B1/ D1) with associated access, servicing, landscaping and parking. The boundary of the site is shown in plan BIMP6 700A.

The commercial area adjoins the application area relating to Application 14/01384/OUT, 'Land North of the Railway', which has a resolution to approve outline consent subject to S106 and conditions for mixed use development including 2,600 dwellings. The proposed development needs to be seen in this wider context, as well as the NW Bicester Master plan, for which the Council are looking to adopt SPD.

1.2 The Site

The site, shown on Figure 1.1 (provided at the end of the document) in relation to the road network, is located to the west of the B4100 Banbury Road. The site lies adjacent to the residential area of the Exemplar development south fields, which is currently under construction.

The town of Bicester lies approximately 24km to the north east of Oxford and 28km to the south east of Banbury. The M40 is located 2km to the south west, with access to the town from Junction 9 via the A41. The site can also be accessed via Junction 10 of the M40 Motorway, which is located approximately 7km to the north-west. The site comprises agricultural land and woodland. The villages of Bucknell and Caversfield are located to the north and east of the site respectively.

1.3 Development Proposal

The proposed development quantum, which forms this application, is set out in Table 1.1.

Table 1.1: Development Quantum

	Quantum	Units
Children's Nursery	869	m^2
Commercial Units (A2/B1/D1)	614	m^2
Local Shops	947	m^2
Community Hall	523	m^2
Public House/ restaurant	664	m^2

Source: Farrell's schedule 20/03/2015

The proposals for access are set out in Chapter 5, proposed development. Sustainable travel measures to achieve modal share targets are also identified.

1.4 Study Scope

A Transport Assessment and Framework Travel Plan were submitted as part of the approved hybrid application for the Exemplar development and the Transport Assessment established the impact of the Exemplar development on the transport network. More recently, a TA and FTP were submitted for the adjacent development of 2,600 homes which in turn are consistent with the transport analysis for the overall Master plan. As such this Transport Assessment has been produced using the same principles and methodology as contained in the more recent TA, but draws on the original submission documents as appropriate.

The transport impacts of the proposed development in this application are assessed in terms of change to that from the originally consented scheme within this Transport Assessment in order to identify net change in impact.

A separate Travel Plan document has been prepared alongside this Transport Assessment. The document identifies that there is already an agreed Travel Plan for the Exemplar development which includes the Local Centre, the principles and agreements of which have not changed. As such the Exemplar Travel Plan continues to provide the Travel Plan for the Local Centre as well as the residential development.

1.5 Report Structure

This Transport Assessment report follows the structure identified below:

- **Chapter 2** – provides an overview of national and local policy in relation to the site and the proposal for development;
- **Chapter 3** – describes the existing conditions of the surrounding area, including existing transport facilities and road traffic conditions;
- **Chapter 4** – sets out the baseline mode share and containment for NW Bicester;
- **Chapter 5** - provides details of the development proposals for the site including parking and access by all modes;
- **Chapter 6** – describes the trip and traffic generation methodology and sets out the forecast generation from the proposed development;
- **Chapter 7** – outlines the traffic impacts and link capacity analysis used to assess the impact of the development; and
- **Chapter 8** – provides an overall summary and conclusion.

2 Policy Context

2.1 Introduction

This chapter sets out the key strategies and policies relating to transport at national and local (County and District) level.

2.2 National Policy

2.2.1 Government White Paper

A Government White Paper ***Creating Growth, Cutting Carbon***[1] was released in 2011 which outlines a vision for a transport system that is an engine for economic growth, and one which is greener and safer. The White Paper states that by improving transport links and targeting projects that promote green growth, a dynamic, low carbon economy can be created.

2.2.2 National Planning Policy Framework (March 2012)

The National Planning Policy Framework sets out the Governments planning policies for England and how these are expected to be applied. The NPPF sets out 12 core planning principles that should underpin decision taking. The principle which relates to transport planning, and in the turn the Development is:

"Actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling and focus significant development in locations which are or can be made sustainable."

Chapter 4 'Promoting sustainable transport' and specifically **Paragraph 29** states that "the transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel".

Paragraph 32 states that "decisions should take account of whether:

- The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;
- Safe and suitable access to the site can be achieved for all people; and
- Improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe."

Paragraph 34 states that "decisions should ensure developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised."

[1] Department for Transport. *Creating Growth, Cutting Carbon White Paper* (2011) Available at: http://www.dft.gov.uk/pgr/regional/sustainabletransport/pdf/whitepaper.pdf

Paragraph 35 states that "developments should be located and designed where practical to:

- Accommodate the efficient delivery of goods and supplies;
- Give priority to pedestrian and cycle movements, and have access to high quality public transport facilities;
- Create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones;
- Incorporate facilities for charging plug-in and other ultra-low emission vehicles; and
- Consider the needs of people with disabilities by all modes of transport."

Finally, **Paragraph 38** states that for larger scale residential developments in particular "key facilities such as primary schools and local shops should be located within walking distance of most properties."

2.2.3 Planning Policy Statement 1 – Eco-Towns Annex

Planning Policy Statement 1 on sustainable development has an Annex specifically setting out a range of minimum standards for Eco-towns, with NW Bicester identified as one of the four Eco-town locations. The document states that many of the principles and standards are more challenging and stretching than would normally be permitted for new development, with the aim of acting to ensure that eco-towns are exemplars of good practice and provide a showcase for sustainable living.

Section ET11 – Transport sets out the standards to be achieved for transport as follows:

"ET11.1 – 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) high frequency public transport and (b) neighbourhood 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 sustainable transport options available.

ET11.2 – Planning applications should include travel plans which demonstrate:

a) How the site's design will enable at least 50% of trips originating in eco-towns to be made by non-car means;

b) Good design principles, drawing from Manual for Streets, Building for Life, and community travel planning principles;

c) How transport choice messages, infrastructure and services will be provided from 'day one' of residential occupation; and

d) 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.

ET11.3 – Where an eco-town is close to an existing higher order settlement, planning applications should also demonstrate:

(a) 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

(b) 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.

ET11.4 – Where eco-town plans intend to incorporate ultra-low carbon vehicle options, including electric car schemes to help achieve a sustainable transport system, planning applications should demonstrate that:

(a) There will be sufficient energy headroom to meet the higher demand for electricity; and

(b) The scheme will not add so many additional private vehicles to the local road network that these will cause congestion.

2.2.4 Circular 02/13 The Strategic Road Network and the Delivery of Sustainable Development

The DfT Circular explains how the Highways Agency (HA) will participate in all stages of the planning process with Government Offices, regional and local planning authorities, local highway/transport authorities, public transport providers and developers to ensure national and regional aims and objectives can be aligned and met.

The Circular sets out that proposals should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

It is identified that a robust travel plan that promotes use of sustainable modes is an effective means of managing the impact of development on the road network and reducing the need for major transport infrastructure. The Highways Agency expects the promoters of development to put forward initiatives that manage down the traffic impact of proposals to support the promotion of sustainable transport and the development of accessible sites.

2.3 Local Policy

2.3.1 Oxfordshire Local Transport Plan 2011-2030 (Revised April 2012 and Chapter 16 Bicester – May 2014)

The Oxfordshire Local Transport Plan (LTP) sets out objectives and plans for developing transport in their area from 2011 to 2030. In May 2014 a revised chapter on Bicester was produced.

The LTP strategy supports the *Local Plan*. It is set out that the implementation of the *Local Plan* will be helped by proposals and initiatives in the *Bicester and Northwest Bicester Eco town Masterplans*. These documents promote an enlarged and vibrant town with a comprehensive range of employment opportunities and local amenities to complement its substantial role in the wider region's economy. The *Local Plan* stresses the importance of securing jobs-led growth in the town to address the critical employment shortfall, and the high levels of out-commuting.

It is highlighted that enhancing access to the strategic transport network and making it easier for people to travel between homes and jobs is critical in accelerating and accommodating future growth in Bicester. Investment in core transport infrastructure will boost the attractiveness and desirability of Bicester as a Place where businesses want to locate and grow, and where people want to live and work.

Transport Strategy Aims

The priority for Bicester is set out as being to provide the transport infrastructure which supports the aspirations set out in the *Local Plan* and the initiatives for their implementation in the forthcoming *Bicester and North West Bicester Eco-Town Masterplans*. This includes tacking the challenges identified in the *Bicester Movement Study* and those specific to Central Government standards for transport in Eco Towns. This will enable the town to thrive and realise its full growth potential, and its essential role in Oxfordshire's economy.

The strategy identifies a series of improvements to increase the overall capacity of transport networks and systems within the locality, enabling them to accommodate the additional trips generated by development; to adapt to their cumulative impact and to mitigate the local environmental impact of increased travel.

It is stated that Oxfordshire County Council will:

- Provide highway infrastructure which effectively reduces current and predicted transport congestion in Bicester;
- Increase highway capacity on perimeter routes to make these attractive to employment and longer distance traffic and hereby reducing the strain on the town centre and central corridor;
- Accommodate proposed strategic rail initiatives, including East West Rail and plans for electrification, and a possible future Rail Freight Interchange, in order to strengthen Bicester's position on the national rail network and maximise access to regional economic centres, such as Milton Keynes;
- Strengthen the town's walking, cycle and bus networks to reduce congestion, improve air quality and ensure good links to local employment opportunities and amenities within the town, as well as transport hubs.

The policies are summarised below as they are of particular relevance to the NW Bicester development.

> **BIC1 – We will seek opportunities to improve access and connections between key employment and residential sites and the strategic transport system by:**
>
> - Increasing capacity at Junction 9 of the M40 and supporting plans to improve Junction 10
> - Delivering a strategic perimeter route around the town is the key component of this strategy.
> - Working closely with partners to facilitate the delivery of proposed strategic rail initiatives, especially East West Rail.

- Working with the rail industry and developers to deliver solutions at the Charbridge Lane and London Road railway level crossing points
- Supporting the proposals to secure a potential freight interchange at Graven Hill and working with the district and developers to achieve this.
- Working with developers to improve the A41 Oxford Road, including enhancements to the Pingle Drive junction, new site accesses, new bus stops and footpath and cycleway improvements.
- Creating a Park & Ride facility adjacent to the A41, close to the Vendee Drive junction.
- Providing measures to reduce congestion through the central corridor (from Kings End (B4030) to the 3-arm Field Street, Buckingham Road and Banbury Road roundabout).
- Implementing focused enhancements to the A4421 (between the junctions with Bicester Road and Launton Road)
- Improvements to the Buckingham Road / A4221 junction
- Increasing capacity at the Howes Lane / Bucknell Road junction and approaches
- South East Link Road

It is noted that bus priority measures may be required at anticipated pinch points on the main approaches to the town centre as future developments come forward.

BIC2 – We will work with strategic partners to develop the town's walking, cycling and bus networks and links between key development sites and the town centre and railway stations by:

- Enhancing pedestrian, cycle and public transport links to the two railway stations, in particular Bicester Town Station.
- Improving Bicester's bus services along key routes
- Significantly improving public transport connectivity with other key areas of economic growth within Oxfordshire
- Providing improved public transport infrastructure
- Public realm improvements in Bicester Market Square and The Causeway
- Securing green links between proposed development sites on the outskirts of the town and existing Public Rights of Way, providing a series of leisure / health walks.

With respect to sustainable travel, the LTP3 chapter states that:

BIC3 - We will work to get the most out of Bicester's transport network by investigating ways to increase people's awareness of the travel choices available in Bicester by:

- Undertaking travel promotions and marketing measures
- Developing a coordinated parking strategy in partnership with Cherwell District Council
- Discourage undesirable routeing of traffic by developing a signage strategy,

2.3.2 Cherwell Proposed Submission Local Plan

The Proposed Submission Local Plan was submitted to the Secretary of State for Communities and Local Government for formal Examination on 31 January 2014. It sets out the broad planning framework for meeting the future needs of Cherwell and would replace the Cherwell Local Plan 1996.

During the Examination in Public on the emerging Local Plan, the Inspector requested that Cherwell District Council (CDC) objectively assesses its housing needs against the Oxfordshire Strategic Housing Market Assessment (2014). Accordingly, proposed changes were published in August, October and December 2014 and the Examination in Public took place in December 2014. Further proposed changes were published in February 2015. Subject to Examination, it is understood that the emerging Local Plan is likely to be adopted in 2015.

2.3.3 Bicester Masterplan

Cherwell DC has also produced a **draft masterplan for Bicester** (consultation draft in September 2012) to eventually form Supplementary Planning Guidance. The Masterplan challenges are addressed in the OCC LTP3 chapter. The Bicester Masterplan is the subject of ongoing review and consultation.

2.3.4 NW Bicester Masterplan

Documents were submitted to Cherwell District Council in March 2014 with additional information submitted in May 2014. A further iteration of the Access and Travel Strategy was submitted in July 2014. A draft SPG document was consulted on in 2014. The 'master plan' sets out the Vision for NW Bicester and provides a framework for development.

2.4 Guidance Documents

In addition to the policy framework, various guidance and supporting documents are available which provide good practice examples and advice on eco developments. The following have been reviewed and taken account of in the development of the proposals:

- National Planning Policy Guidance on Transport Assessments and Travel Plans;
- Building Sustainable Transport into New Developments: A menu of options for growth points and Eco-towns, DfT, April 2008;
- Design to Delivery: eco-towns transport worksheet, Town and Country Planning Association, March 2008; and
- Manual for Streets.

2.5 Summary

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 and mitigating the impacts of development on the highway network.

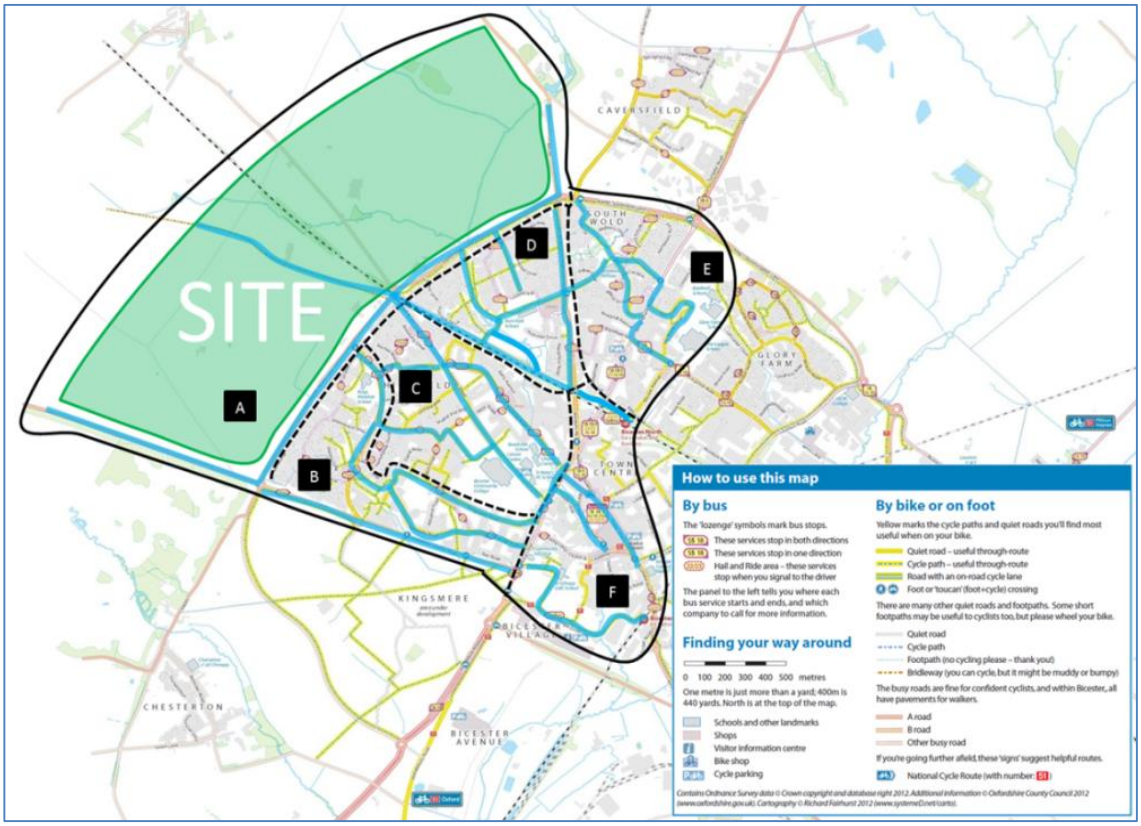
3 Existing Conditions

This chapter explores the existing transport conditions surrounding the site including a description of the local transport network available for travel on foot, by bicycle, bus, rail and car.

3.1 Walking

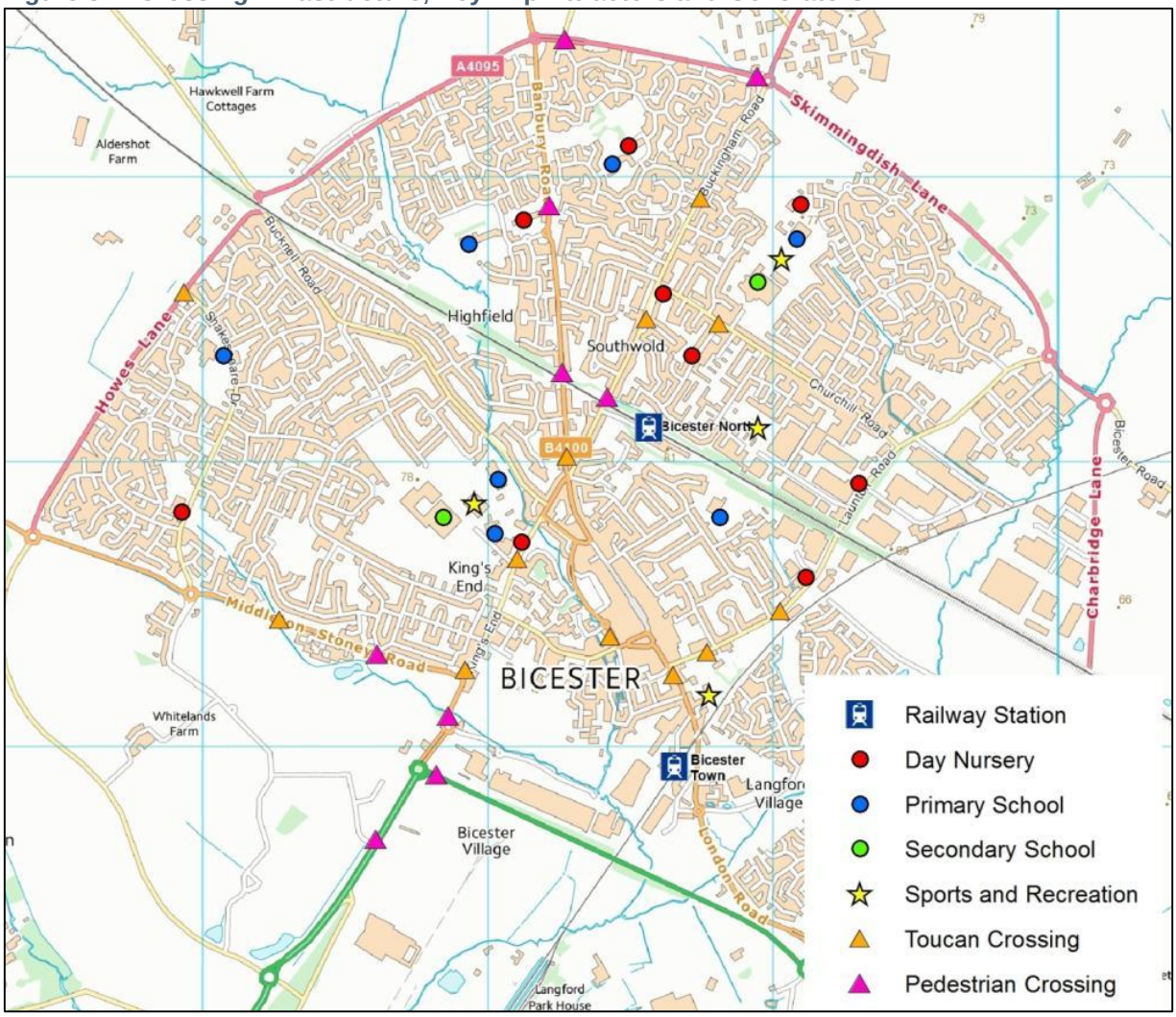
A comprehensive review of the walking infrastructure locally has been undertaken and is provided in Appendix 1 of the NW Bicester Masterplan Access and Travel Strategy. The study area with the existing routes that were assessed is shown in Figure 3.1. Each of these routes has been audited and this is included in the Masterplan Appendix referred to above.

Figure 3.1: Walking Audit Zones and Routes



These routes connect to Bicester town centre and other attractors and generators, as shown in Figure 3.2 which outlines the key education, transport and existing crossing infrastructure in Bicester. It can be seen that there are a number of **pedestrian** and **'toucan'** (foot and cycle) crossings in Bicester.

Figure 3.2: Crossing Infrastructure, Key Trip Attractors and Generators



Source: Produced by Hyder – Contains Ordnance Survey data © Crown copyright and database right (2012)

A new cycleway and footpath has been constructed on the west side of Banbury Road and connects to the application site through the Exemplar south field's development. A crossing facility has been provided on the B4100 Banbury Road to the south of the site access junction to facilitate movements from the Caversfield direction, with a cycleway/ footway running south from the toucan crossing and connecting to routes east of the A4095/B4100 junction. The cycleway on the west site links southwards to the A4095 Lords Lane and a toucan crossing has been provided to assist crossing of Lords Lane west of the roundabout.

There is a footpath adjacent to A4095 Lord's Lane providing for east-west movements. This footway aligns the entire southern extent of the A4095 carriageway between the roundabout with Bucknell Road (to the south west) and the A4421 to the south east. Included in photographs 3.1 and 3.2 are images of the pedestrian facilities that adjoin the A4095 Lord's Lane and Southwold Lane routes.

Photograph 3.1 & 3.2: Pedestrian facilities the A4095 carriageway


The pedestrian route that aligns the A4095 carriageway is considered to benefit from a good horizontal alignment, street lighting, tactile paving and pedestrian refuges at junctions (as shown in photograph 3.1). There are however some sections that are secluded by vegetation. In addition, the footways that form the route are considered to be of an appropriate width and are well maintained in terms of their surface condition. A toucan crossing (shown in photograph 3.2) has been installed on the A4095 Southwold Lane approximately 100m to the east of the A4095 / B4100 roundabout convergence. This facility allows both pedestrians and cyclists to cross at this location.

Pedestrians wishing to access the north of Bicester town centre can follow footpaths on both sides of the B4100 Banbury Road. The B4100 Banbury Road carriageway is generally aligned by footways along both sides for the entirety of the route, varying in width between 1.2 and 2.0 metres, which is substandard in places. The footways do however benefit from a generally good horizontal alignment, street lighting, tactile paving and appropriate crossing infrastructure and are considered to be well maintained in terms of their surface condition. Images of footways aligning the B4100 carriageway are shown in photographs 3.3 and 3.4.

Photographs 3.3 & 3.4: Pedestrian facilities adjoining the B4100 Banbury Road carriageway


Approximately 150m south of the priority controlled junction with Lodge Close, the footways that align both sides of the B4100 carriageway are guided away from the highway carriageway by hedge line boundaries, as shown in photographs 3.3 and 3.4. These pedestrian routes benefit from a generous width, a good surface condition and the presence of street lighting. The presence of formal crossing infrastructure at a number of locations along the B4100 corridor assists in the movement of pedestrians and cyclists. A pelican crossing (shown in photograph 3.5) is in place approximately 100m north of the B4100 Banbury Road/Lucerne Avenue roundabout, whilst a zebra crossing (shown in photograph 3.6) has been installed along the B4100 Banbury Road between its junctions with Almond Road (to the north) and the Buckingham Road roundabout (to the south).

Photographs 3.5 & 3.6: Pedestrian crossing infrastructure in place along the B4100 Banbury Road


There are also various pedestrian routes through the Bure Park residential area that lies between the NW Bicester site and Bicester town centre. These are shown in photograph 3.7 and photograph 3.8.

Photograph 3.7 & 3.8: Pedestrian routes throughout the Bure Park area of Bicester

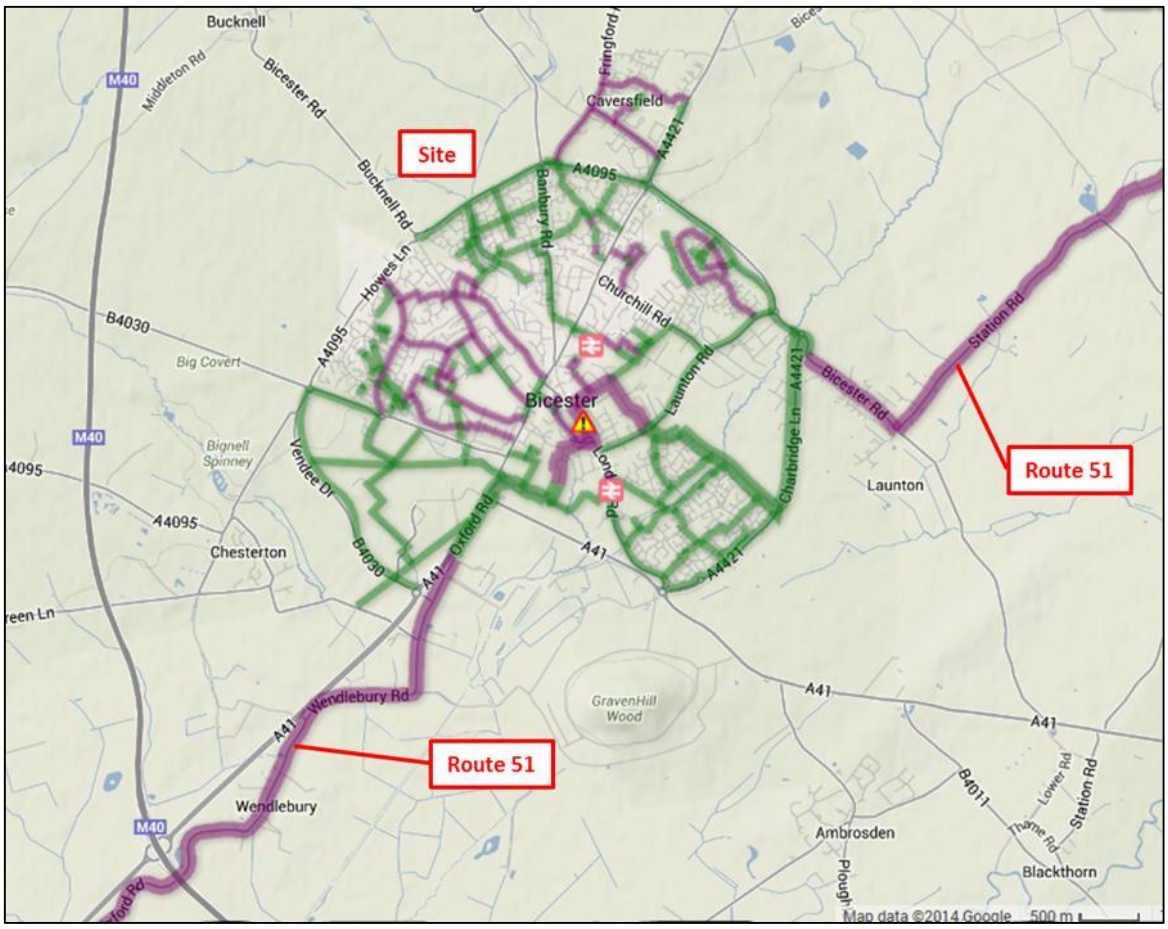

3.2 Public Rights of Way

There are no Public Rights of Way in the vicinity of the site.

3.3 Cycling

It can be seen from Figure 3.3 below that route 51 of the National Cycle Network (NCN) passes through Bicester in a south west to north east alignment. A combination of on-road (green) and off-road (purple) sections form the route as it passes in close proximity to Bicester town centre and via both railway stations. A number of routes currently exist to the south and east of the site, providing connectivity to Bicester and Caversfield respectively. The cycleway alongside Banbury Road will provide direct cycle access from the site to the existing network. In addition, there will be a cycle route provided southwards from the proposed local centre through the land to the south of the application site as part of the development (Land North of the Railway).

Figure 3.3: Local Cycle Routes



Source: Sustrans

3.4 Bus Services

There are limited bus services in the vicinity of the site. However, a new half hourly bus service is proposed to serve the Exemplar development. This will have stops on Banbury Road to the north of the access junction and have a stop in the local centre, with buses looping from north to south/east through the development. The service will connect to Bicester North Rail Station and the town centre.

3.5 Rail Stations and Services

The town has two rail stations, namely Bicester North and Bicester Town. Bicester North station is located approximately 2.9km south east of the centre of the site, whilst Bicester Town station is sited approximately 3.7km south east of the centre of the site. At the time of writing, Bicester Town rail station was closed due to improvements being undertaken in relation to the Chiltern Railways Evergreen3 project. This will provide a passenger train service between Oxford and London Marylebone via Bicester. The station is due to re-open in summer 2016. This will see improvements to the station itself including level access, two new platforms, a rebuilt car park, cycle parking, bus stops and improved access roads.

Bicester North Station offers passengers a range of facilities including coffee and snack shop, undercover cycle storage (20 racks, shown in photograph 3.11) and open air racks (10 racks, shown in photograph 3.12) and a fast ticket machine. There are also car parking facilities available on a pay and display basis with the opportunity for monthly,

quarterly, bi-annual and annual season tickets available. Observations indicate that the cycle racks are very well used.

Photograph 3.11 & 3.12: Cycle parking provision at Bicester North Railway Station


Bicester Town station is currently closed and under development. Table 3.1 summarises the direct services currently available from Bicester North Station.

Table 3.1: Summary of Rail Services

Station	Route	Journey Time (approximate)	Frequency
Bicester North	To London Marylebone	60 minutes	4 per hour
	To High Wycombe	30 minutes	2 per hour
	To Banbury/ Birmingham	20 minutes	4 per hour

As can be seen from Table 3.1 above, the regular services throughout the day ensure a good range of destinations are readily accessible from Bicester North rail station. There is a service approximately every 15 minutes to Banbury, Birmingham and London from Bicester North station. Once the Evergreen3 proposals are finished there will be half hourly services to London and Oxford from Bicester Town Station and a reduction in the journey time to London.

3.6 Highway Network

The existing highway network in the vicinity of the site is illustrated in Figure 1.1 which is included at the end of this document, and it is considered that the site is well located in terms of the local road network (B4100, B4030, Bucknell Road and A4095) as well as strategic routes (A4421, A41, A34 and M4 Motorway).

M40

The M40 is a motorway connecting London to Birmingham from the M25 to the M40. It passes Bicester to the west in a south to north alignment providing access to High Wycombe to the south east and Warwick to the north-west. Two junctions of the M40 can be used to access NW Bicester, namely Junction 10 located 7.4km to the north west of the site and Junction 9 located 6.1km south west of the site.

A41

The A41 connects the south west of Bicester to the M40. It is a dual carriageway subject to the national speed limit for most of its length and 40 mph on approach to Bicester. This segment of carriageway is predominantly bound by fields, with the exception of Wendlebury in the south west, Bicester Garden Centre and the Kingsmere development

and Bicester Village at the north east of the segment. The A41 changes alignment at Bicester Village, taking an easterly alignment towards Aylesbury.

A41 Oxford Road

The A41 Oxford Road is a dual carriageway that provides access to Middleton Stoney Road and central Bicester via a mini roundabout. A second roundabout along the route enables access to Tesco and the Bicester Village outlets. A third roundabout on the A41 Oxford Road facilitates access to the Esso Petrol Filling Station. The eastern arm of this roundabout continues as the A41 which forms Bicester's eastern perimeter road.

A34

The A34 is accessible via Junction 9 of the M40, and extends in a south easterly direction towards Oxford. The A34 intersects with the A40 Northern Bypass Road to the north of Oxford, and then forms the Western Bypass Road. 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 to 70mph.

B4030 Vendee Drive

Vendee Drive connects the A41 to the south to Middleton Stoney Road and Howes Lane at a roundabout in the south western boundary of the site. It is a single carriageway road subject to a 50mph speed limit and there is an adjacent segregated footpath/ cycleway.

A4095 Howes Lane

The A4095 Howes Lane is a single lane carriageway that extends from Bucknell Road to the junction with the B4030 Middleton Stoney Road. It is rural in character with a speed limit varying between 40 and 50mph, predominantly no street lighting and no footways or adjacent path.

A4095 Lord’s Lane

The A4095 Lords Lane is a single lane carriageway (in each direction) that extends between its roundabout junctions with the B4100 Banbury Road and Bucknell Road. The road is subject to a 50mph speed limit and street lighting is provided.

Bucknell Road

Bucknell Road connects the B4100 in the south to the roundabout between the A4095 Howes Lane and Lords Lane in a south east to north-west alignment. It is a street lit single carriageway benefitting from footways on both sides of the road, providing access to a number of residential roads. North of the A4095 it becomes a rural lane providing access to Bucknell village.

B4100 Banbury Road

The B4100 Banbury Road carriageway extends in a south to north alignment, from its convergence with Buckingham Road and Field Street via a roundabout (southern extent) to its roundabout convergence with the A4095 Lords Lane and Southwold Lane and then past the NW Bicester development. The northern section (north of the roundabout junction with the A4095) is predominately rural in character and subject to the national speed limit. The B4100 connects to the A43 at Baynards Green and is a route used to access the M40 Junction 10.

B4030 Middleton Stoney Road

Middleton Stoney Road is a single carriageway bounding the west of Bicester in a south east to north-west alignment. It is subject to the national speed limit until a point east of the Howes Lane/Vendee Drive roundabout where the route is proposed to be traffic calmed as part of the SW Bicester development: it will then become a 30mph route. Residential dwellings exist to the north of Middleton Stoney Road, with fields and new development to the south. North-west of Bicester the B4030 connects to the B430 at Middleton Stoney with a route north to the M40 J10 and south to the A34 west of J9.

Bainton Road

The Bainton Road carriageway follows a general west to east alignment between the village of Bucknell and the B4100 Banbury Road carriageway. The carriageway is approximately 5.5m in width although there are places where passing bays are provided and there are sharp bends. It is subject to a 60mph speed limit until the fringes of Bucknell village, where the speed limit reduces to 30mph. The carriageway is not illuminated and there is an absence of formal footpaths adjoining the carriageway, although pedestrians were observed to walk on the grass verge throughout the village on the day the site visit was conducted.

3.7 Baseline Traffic

3.7.1 Bicester Saturn Model Base Year 2012

The Transport Assessment for the original Exemplar Application was based on local traffic counts and distributions from the Bicester SATURN model as available at the time (2011). Since that point in time, there has been further development of the traffic model and it has been used as a basis for the NW Bicester masterplan and various planning applications. As such, this Transport Assessment utilises the modelling results for the baseline traffic situation for the Exemplar Local Centre.

The Bicester SATURN model was built using 2007 traffic data, and hence the model has a 2007 base year. In order to validate the use of the model with a 2012 Base Year, a series of vehicle counts were carried out by Oxfordshire County Council (OCC) in 2012/2013 and supplied to Halcrow who undertook a validation exercise. In total 35 automatic traffic counts were undertaken. The validation report is included as part of the evidence base for the Cherwell Local Plan.

The 2012/2013 observed count data was compared to modelled traffic flow data from the 2007 base year Bicester AM and PM peak scenarios. The validation checks showed that is the model nearly validates to the criteria set out in DMRB. The most significant issue is the overestimation of modelled flows on the B430. When considering the validation of the model within the town itself, the DMRB criteria were met.

The Bicester Saturn Model was recommended by and agreed with OCC and the HA as the appropriate tool for assessing the impacts of the NW Bicester Masterplan and subsequent planning applications.

The baseline traffic analysis uses the Saturn Model Flows to provide the evidence of current traffic levels. Baseline AM and PM peak hour flows for links and junctions close to the proposed development have been obtained from the Bicester Saturn Model 2012 Base Year.

3.7.2 Link Flows

The AM and PM peak hour flows on a range of links across the network have been factored to give 12 hour and 18 hour flows using a factor of 4.330 and 5.212 respectively on the total of AM plus PM peak hour flows. The factors have been derived from ATC data collected for the original Exemplar development Transport Assessment. The flows are set out in Table 3.2. Figure 3.4 at the rear of the document shows the location of links referenced in the table.

Table 3.2: Base Year 2012 Traffic Flows

Link Ref	Link Description	Base Year 2012			
		AM Peak Hour	PM Peak Hour	12 Hour	18 Hour
1	A41 northbound, N of M40 J9	1210	1493	11705	14088
2	A41 southbound, N of M40 J9	1205	1109	10021	12060
3	A41 Oxford Rd, S of A41 junction	2562	2490	21878	26331
4	Vendee Drive, W of A41 junction	353	249	2607	3138
5	A41, N of Pingle Drive	1496	1678	13745	16543
6	Middleton Stoney Rd, W of Kings End	970	846	7864	9465
7	Middleton Stoney Rd, W of Howes Lane	556	655	5244	6312
8	Howes Lane, N of Middleton Stoney Rd	618	697	5695	6854
9	Howes Lane, E of Shakespeare Drive	750	848	6920	8329
10	Lords Lane, E of Bucknell Road	1003	1118	9185	11055
11	Lords Lane, W of Banbury Road	1108	1215	10060	12107
12	Bucknell Road, N of Lords Lane	247	192	1901	2288
13	Bucknell Road, S of Howes Lane	540	833	5946	7156
14	Banbury Road, N of Lords Lane	1117	1186	9973	12003
15	A4095 E of Banbury Road	1885	1886	16330	19654
16	Banbury Road, S of A4095	457	634	4725	5686
17	Buckingham Road, S of Skimmingdish Lane	717	842	6751	8125
18	Queens Road, S of Bucknell Road	1035	1454	10779	12973
19	A41 E of A41 Oxford Road	2129	2265	19028	22901
20	A4421 Neunkirchen Way	1370	1661	13126	15797
21	A41, E of London Road roundabout	2293	2396	20306	24439
22	A4421, E of Skimmingdish Lane	1471	1688	13680	16465
23	Shakespeare Drive, S of Howes Lane	142	152	1273	1532
24	M40 J10 northbound off slip road	482	599	4681	5634
25	Ardley Road (E of B430)	207	195	1741	2095
26	M40 J10 southbound on slip road (from A43)	658	354	4382	5274
27	B430 M40 over bridge	2184	2170	18855	22693
28	A4095 N of Chesterton	602	553	5002	6020
29	Shakespeare Drive, E of Middleton Stoney Road	611	455	4616	5556
30	The Approach, W of Bucknell Road	320	243	2438	2934
31	A41 East of Pioneer Road	2141	2378	19570	23553
32	Bicester Road, E of A4421 junction	663	617	5543	6671
33	A4421 N of Skimmingdish Lane	1311	1132	10579	12733
34	Fringford Road, N of Caversfield	74	112	805	969
35	B4100 Banbury Road, N of Bainton Road	1117	1186	9973	12003
36	Ardley Road, N of Bucknell	207	195	1741	2095
37	Middleton Road, W of Bucknell	27	12	169	203
38	B4030 Middleton Stoney Road, NW of NWB	556	655	5244	6312
39	Green Lane, W of Chesterton	407	360	3321	3998
40	Wendlebury Road, E of M40	331	207	2330	2804

3.7.3 Junction Turning Movements

The traffic turning movements at existing junctions across the town network are available from the Bicester Saturn Model for the 2012 Base Year. The locations of the junctions and the reference numbers are shown in Figure 3.5 at the rear of the document. Given the anticipated local scale of impact of the Exemplar Local Centre on the road network, only junctions in the vicinity of NW Bicester are considered relevant. The turning movements from these junctions are shown in Table 3.3.

Table 3.3: Base Year 2012 Total Turning Movements at Junctions

Junction	Description	AM Peak Hour	PM Peak Hour
J14	B4100 Banbury Road/ A4095 Lord's Lane	2284	2461
J16	B4100/ Caversfield	1210	1284
J19	Lord's Lane/ Bucknell Road	1128	1247
J20	Howes Lane/ Bucknell Road	1215	1215
J23	Howes Lane/ Middleton Stoney Rd/ Vendee Drive	1481	1455
J29	Middleton Road/ Bainton Road	265	252

3.7.4 Junction Capacity

Base Year 2012 ARCADY and PICADY models have been produced as part of the Masterplan and the Transport Assessment for the adjacent development ('Land North of the Railway') for the key existing junctions in the vicinity of the site.

The base year modelling shows all junctions assessed as operating under capacity. However, the A4095 Howes Lane approach to Bucknell Road operates with an RFC of 0.805, close to capacity. Mitigation has been introduced to this junction as part of the Exemplar development.

3.8 Personal Injury Accident Analysis

3.8.1 Data Analysis

This section analyses personal injury accidents (PIA) that were recorded on the surrounding carriageway of the site and the main transport corridors in Bicester in the period between September 2009 and September 2014. The accident analysis area is shown below as Figure 3.6 and data is provided in Appendix 3.1.

There have been a total of 133 incidents within the study area over the five year period; 116 slight, 15 serious and 2 fatal in severity. Tables 3.4 and 3.5 provide an overview of casualties and their severity. Of the two fatal accidents; one occurred in 2012 along the B4030 Middleton Stoney road in which a HGV travelling southeast hit a pedestrian who had been jogging east on the footway, who for unknown reasons went into the carriageway. The second fatal accident occurred along Bucknell Road when a vehicle travelling southeast lost control and exited the carriageway, hitting a tree and killing both driver and child passenger.

Figure 3.6: Accident Analysis Area

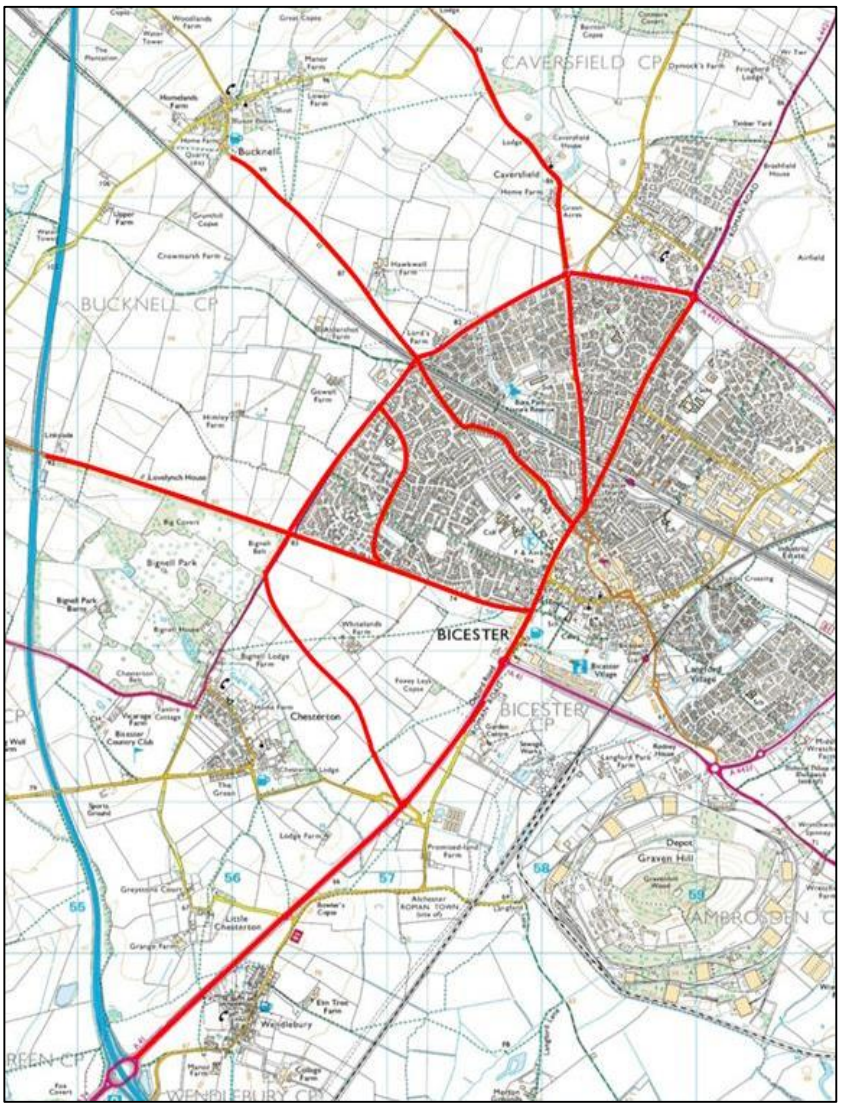


Table 3.4 - All Accidents by Severity

	2009	2010	2011	2012	2013	2014	Total
Fatal	0	1	0	1	0	0	2
Serious	0	1	3	3	5	3	15
Slight	7	12	36	22	23	16	116
Total	**7**	**14**	**39**	**26**	**28**	**19**	**133**

Table 3.5 – All Casualties by Severity

	2009	2010	2011	2012	2013	2014	Total
Fatal	0	2	0	1	0	0	3
Serious	0	1	6	3	5	3	18
Slight	8	18	48	34	31	21	160
Total	**8**	**21**	**54**	**38**	**36**	**24**	**181**

There have been a total of 12 traffic accidents involving pedestrians over the five year period. Table 3.6 provides an overview of pedestrian accidents and their severity. The fatal pedestrian accident within this study period is as stated above (Middleton Stoney Road). A total of two serious accidents occurred within the study period.

Table 3.6 – Pedestrian Casualties by Severity

	2009	2010	2011	2012	2013	2014	Total
Fatal	0	0	0	1	0	0	1
Serious	0	0	1	1	0	0	2
Slight	1	0	5	0	3	0	9
Total	**1**	**0**	**6**	**2**	**3**	**0**	**12**

There have been a total of 10 accidents involving cyclists recorded over the five year study period. Table 3.7 provides an overview of cycle accidents and their severity. The majority of cycle accidents (9 out of 10) were slight with only one severe accident during the study period.

Table 3.7: Accident Involving Cyclists by Severity

	2009	2010	2011	2012	2013	2014	Total
Fatal	0	0	0	0	0	0	0
Serious	0	0	0	0	1	0	1
Slight	0	1	3	2	2	1	9
Total	**0**	**1**	**3**	**2**	**3**	**1**	**10**

3.8.2 Cluster Analysis

Further analysis has been undertaken at key locations within the vicinity of the proposed development where clusters of accidents have been identified from the accident data presented in Appendix 3.1 (accident location plan and descriptions of accidents).

Bucknell Road near Hawkwell Farm

Four accidents were recorded within a 350m section of the B4100 in the latest five year period. Two of the accidents were slight in severity, with one serious and one fatal. Three of the accidents were a result of drivers losing control of the vehicle. Causes included speeding and being under the influence of alcohol. The incident involving a fatality was due to excessive speeding, travelling too fast for conditions, aggressive driving and being impaired by alcohol. Three of the four accidents involved vehicles travelling southeast-bound along Bucknell Road.

B4100 (near Home Farm)

Five accidents in total occurred in a 70m segment of the B4100 near Home Farm, all of which were slight in severity. Two of the five accidents occurred as a result of the vehicle losing control rounding a corner along the B4100, travelling north/northwest bound. Two of the accidents occurred at the same junction adjoining Caversfield Road and the B4100. In both cases the vehicles pulling out of the junction failed to see the oncoming vehicle travelling southeast bound along the B4100, rounding a right hand bend. Another incident occurred due to a driver unfamiliar with driving on the left pulled out from a layby onto the wrong side of the road, colliding with an oncoming vehicle.

B4100 Banbury Road/A4095 Roundabout

Two incidents have been recorded at the roundabout between the B4100 and A4095 in the last five years, one of which was serious in severity and the other slight. An incident involving a car and a motorcycle occurred due to the car travelling northbound attempting to make a U-turn north of the splitter island north of the roundabout. The car driver failed to give way to a motorcycle overtaking travelling northbound, resulting in a collision and serious injury to the motorcyclist.

B4030/Vendee Drive/Middleton Stoney Road/A4095

Two accidents have been recorded at the roundabout between the B4030 and A4095 within the last five years, both of which were slight in severity. Both accidents were caused by drivers not stopping at junctions. The cause of one accident was due to a driver speeding and acting recklessly, failing to stop at the junction and exiting the carriageway. The other incident was due to a driver being impaired by drugs failing to stop at the junction and exiting the carriageway.

Howes Lane/Shakespeare Drive

Three accidents have been recorded within a 50m segment at the junctions between Howes Lane and Shakespeare Drive and Dryden Avenue and Shakespeare Drive, all of which were slight in severity. One of the accidents was a result of a car jumping a red light, resulting in a collision. The remaining incidents occurred along the Dryden Avenue junction the first was due to a driver failing to give way at the junction. The second involved a pedestrian being clipped by a vehicle.

3.8.3 Summary

In summary, the number of incidents on Bucknell Road near Hawkwell Farm, and on the B4100 Banbury Road given their proximity to the site mean that safety issues need to be considered further in the impact assessment. The number of accidents at the roundabouts does not appear to be unusual given the volume of traffic movements.

4 Baseline Mode Share and Containment

4.1 Introduction

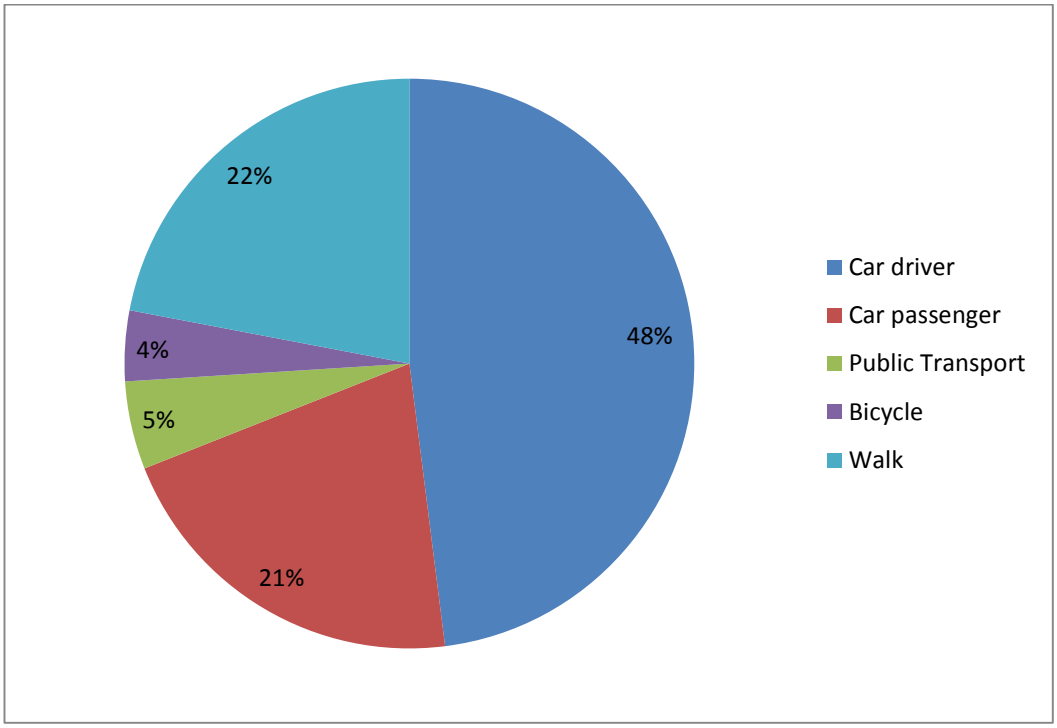
Appendix 5 of the NW Bicester Masterplan Access and Travel Strategy details the baseline mode share and containment of trips and this is summarised in this chapter to inform the Transport Assessment for the Local Centre.

Baseline information on mode share of trips is available from the Bicester Household Travel Diary Data (2007 and 2010) and the 2011 Census on Method of Travel to Work. The 2010 Household Survey provides some data but is not as comprehensive as the survey undertaken in 2007. The 2010 Household Diary is used as it is most recent, but this has been supplemented by data from 2007 where it has not been available.

4.2 Mode Share

The share of trips by various modes for Bicester residents as a whole (2010 survey) is shown in **Figure 4.1**. This is of all trips made by residents across a seven day period.

Figure 4.1: Percentage of Total Travel by Mode, Bicester Residents, 2010



Source: Travel Behaviour Survey, Summary of Results, Autumn/Winter 2010/11, OCC 2011

The figures indicate that at present **69% of total trips are made by car modes and 31% by non-car modes**. This is a slight increase in car trips compared to the 2007 survey which recorded 67.5% of all trips by households being made by car or goods vehicle.

The proportion of those currently using sustainable modes[2] is currently 48%, showing the influence of car sharing on overall car use and in achieving modal share targets.

Of non-car modes, walking has the largest share at 22%. The public transport percentage includes both bus and rail trips (it is not broken down in the results into the separate modes).

Table 4.1 sets out modal share for trips within NW Bicester (under 1km), within Bicester (1-3km) and outside of Bicester (more than 3km). In this context trips of under 1km are assumed to be within the NW Bicester Application 1 site, trips of 1-3km are within Bicester and those of more than 3km are assumed to be outside of Bicester.

Table 4.1: Bicester Household Diary Surveys Mode Share by Distance (2010)

	2010 Bicester Household Survey		2010 Modal Share Internal Trips (under 1km)		2010 Modal Share External Trips Within Bicester (1-3km)		2010 Modal Share External Trips Outside Bicester (>3km)	
	% by mode	Total Car/ Non Car	% by mode	Total Car/ Non Car	% by mode	Total Car/ Non Car	% by mode	Total Car/ Non Car
Car driver	48%	69%	12%	22%	39%	60%	65%	86%
Car passenger	21%		10%		21%		21%	
Bus passenger	5%	31%	1%	78%	2%	40%	6%	14%
Bicycle	4%		5%		8%		3%	
Walk	22%		72%		30%		5%	
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

It can be seen from reference to Table 4.1 that in the baseline, 69% of all trips by households were made by vehicle but this varies from only 22% of internal trips, to 60% within Bicester and 86% of trips outside of Bicester. Furthermore, of non-vehicle modes, walking has the largest share at 22% of all trips but represents 72% of local trips of under 1km.

Journey to Work Mode Shares: 2011 Census Data

The 2011 Census data provides a modal share of journeys to work in the Bicester North and Caversfield Wards compared to Cherwell District and England as a whole (daytime population). The table includes those who work from home (all the time) within the percentages. The data is shown in Table 4.2.

The Census records approximately 76.9% of work journeys combining Caversfield and Bicester North as being made by car (71.2% drivers, 5.7% passengers). This is higher than the 68% for the Cherwell District and 62% for England as a whole. The percentage working from home is 6% on average in Cherwell District but higher at 8% in Caversfield. The percentage does not include those who work from home on a regular but not full time basis.

[2] Walking, cycling, electric car, rail, bus, taxi, car passenger or motorcycle as defined in Appendix 5 for the Masterplan

Table 4.2: Summary of Method of Travel to Work – Daytime/Working Population

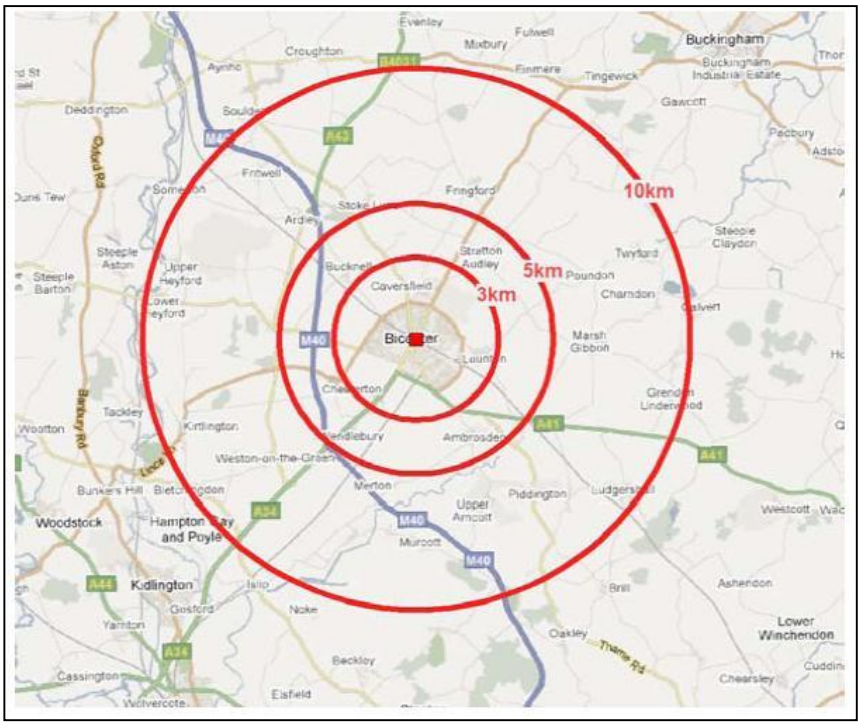
	Caversfield	Bicester North	Cherwell	England
All Usual Residents Aged 16 to 74	**1,573**	**4,223**	**74,829**	**25,162,721**
Work Mainly at or From Home	8%	5%	6%	5%
Underground, Metro, Light Rail, Tram	0%	0%	0%	4%
Train	2%	4%	3%	5%
Bus, Minibus or Coach	2%	4%	5%	7%
Taxi	0%	0%	0%	1%
Motorcycle, Scooter or Moped	1%	1%	1%	1%
Driving a Car or Van	77%	69%	63%	57%
Passenger in a Car or Van	5%	6%	5%	5%
Bicycle	1%	3%	3%	3%
On Foot	3%	8%	12%	11%
Other Method of Travel to Work	1%	0%	1%	1%

Source: 2011 Census

4.3 Containment of Trips

Figure 4.2 shows the extent of the various travel distances from the centre of Bicester. The whole of Bicester and the main development sites (including most of the NW Bicester site) is within the 3km distance. This distance therefore can be used to represent those trips 'contained' within Bicester.

Figure 4.2: Distance from Bicester Town Centre

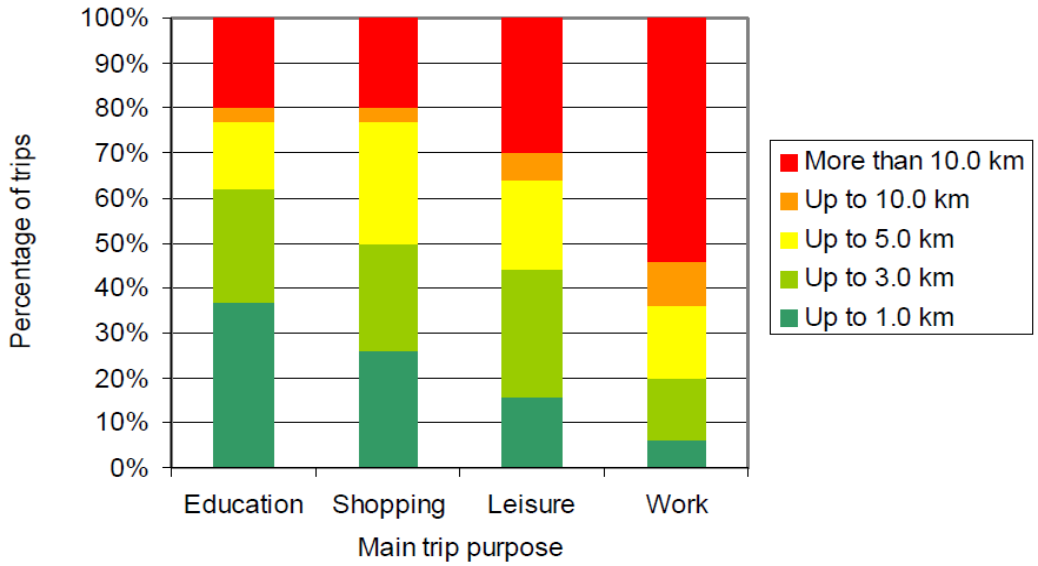


Source: Travel Behaviour Survey, Summary of Results, Autumn/Winter 2010/11, OCC 2011

4.3.1 Containment by Trip Purpose

The 2010 survey provides information on the distance versus the trip purpose, as shown in Figure 4.3. The results show that the level of containment of trips within the 3km varies substantially by trip purpose, with 62% of educational trips, 50% of shopping trips and 44% of leisure trips contained compared to only 20% of work trips. This is all trips by residents including comparison shopping for example, whereas it would be expected that the majority of trips to local convenience shops and services will be by people living within the vicinity i.e. contained on site.

Figure 4.3: Trip Purpose vs Distance Travelled



Source: Travel Behaviour Survey, Summary of Results, Autumn/Winter 2010/11, OCC 2011

4.3.2 Destinations

The 2007 Bicester Household Travel Diary survey data has been analysed to establish the destinations of Bicester residents by trip purpose. Those purposes relevant to the commercial centre comprising business, retail and community uses are set out below.

Table 4.3 shows the main destinations for work based trips, highlighting that Oxford is a key destination, followed by Kidlington. Trips to the east of Bicester (to the industrial estates) and the town centre are also significant. Work based trips are however the most dispersed out of Bicester of the journey purposes, illustrating that the majority of Bicester residents currently commute out of the town for employment.

Table 4.3: Employment and Business Trips Main Destinations

Zone	District/ Ward Name	% of Trips
35	Oxford District (B)	9.8
36	Kidlington Wards	9.5
41	Bicester East Ward	9.5
43	Bicester Town Ward	9.5
37	Wards South and West of Bicester	6.9
27	South Oxfordshire District	6.4

Zone	District/ Ward Name	% of Trips
38	Wards North and West of Bicester	4.9
24	South Northamptonshire District	4.6
25	West Oxfordshire District	4.1
33	Aylesbury Vale District (South)	3.6
	Total to Main Destinations	**68.9**

As shown in Table 4.4, shopping trips are concentrated (61%) in the Bicester Town Ward and Bicester South (the town centre, Tesco store and Bicester Village) or are likely to be local centre trips (13% to Bicester North, East and West). The town centre is likely to have increased as a proportion following the opening of the new Sainsbury's store.

Table 4.4: Shopping Trip Main Destinations

Zone	District/ Ward Name	% of Trips
43	Bicester Town Ward	40.9
42	Bicester South Ward	19.7
36	Kidlington Wards	10.2
41	Bicester East Ward	5.1
35	Oxford District (B)	4.4
45	Bicester North Ward	4.4
29	Banbury	3.6
44	Bicester West Ward	3.6
37	Wards South and West of Bicester	2.9
	Total to Main Destinations	**94.9**

Table 4.5 shows the destinations of the majority of leisure trips, with the town centre and other parts of Bicester accounting for 54% of trips. Areas to the south and west of Bicester, and Oxford, are also popular destinations.

Table 4.5: Leisure Trip Main Destinations

Zone	District/ Ward Name	% of Trips
43	Bicester Town Ward	33.3
44	Bicester West Ward	12.5
37	Wards South and West of Bicester	11.1
35	Oxford District (B)	8.3
36	Kidlington Wards	8.3
42	Bicester South Ward	5.6
26	Vale of White Horse District	4.2
39	Fringford Ward	4.2

Zone	District/ Ward Name	% of Trips
45	Bicester North Ward	2.8
	Total to Main Destinations	**90.3**

4.3.3 Total Trip Containment

Applying the containment levels for each land use to the proportion of trips made by each purpose (set out in the Appendix 4 to the NW Bicester Masterplan Access and Travel Strategy) gives an overall estimate of 56.4% of trips contained within Bicester.

The current containment of trips within a sector of the town (such as NW Bicester will be) is not known but is assumed to be in the order of 25% given that such areas include educational facilities as well as some jobs and a range of local shops and services and some leisure facilities. The assumption of 25% is half that of Bicester containment as a whole.

5 Development Proposals

5.1 Introduction

This chapter describes the development proposals, including the proposed arrangements for access and travel. A summary of the proposed land uses is provided in Table 5.1. The site layout is shown in Drawing 14058 (P1) 101 Ground Floor Rev K.

Table 5.1: Proposed Land Uses

	Gross External Area	Units
Children's Nursery	708*	m^2
Commercial Units (A2/B1/D1)	614	m^2
Local Shops	947	m^2
Community Hall	523	m^2
Public House/ restaurant	664	m^2

Note: the children's nursery includes an area of 161m^2 of garden space which has been removed from the overall floor space of 869m^2. The transport assessment uses Gross Floor Space as the means of calculation of traffic generation rather than Gross External Area.

The street proposed within the Local Centre will be 6.1 metres in width and will be a shared surface to give priority to pedestrians and create a focal point in the development. The street will be subject to a 20mph speed limit. There will be some on-street parking in bays, space for loading and unloading and a bus stop for Exemplar bus services on the northern side of the street.

There will be two areas for parking and servicing to the rear of the development, one to the north and one to the south, with access points from the street frontage.

For the purposes of this Transport Assessment it has been assumed that the development would be constructed commencing in 2016, with full occupation anticipated by 2018 (subject to the granting of full planning permission).

5.2 Walking and Cycling

The layout of the Local Centre will facilitate easy movement by foot and cycle with strong connections to the surrounding residential areas and from the site to Bicester town centre, services and facilities.

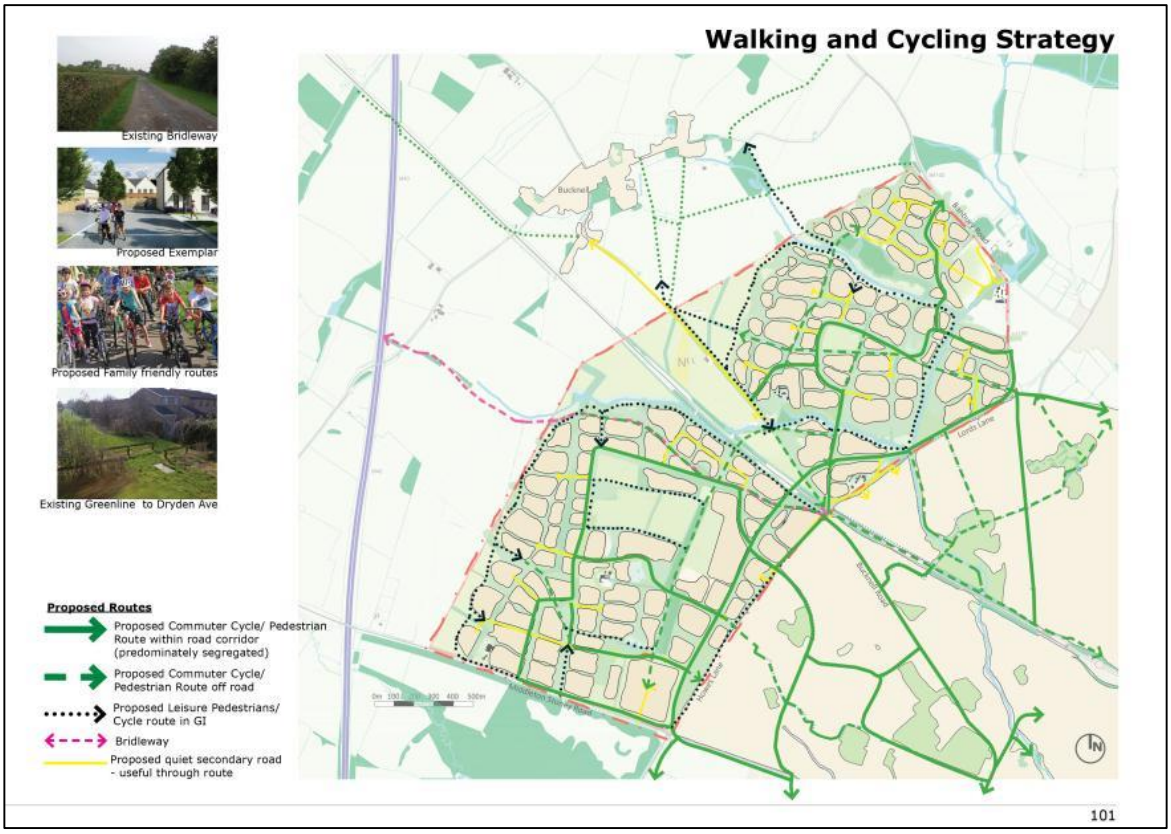
The street in the heart of the Local Centre is designed as a 20mph street, thus providing a safe environment for pedestrians and cyclists. The centre will be connected to the adjacent residential areas via well lit, good quality walking and cycling routes using the network of streets and segregated routes, making shorter connections between areas.

As part of the Exemplar development, the following connections have already been provided:

- A segregated walking and cycling shared route adjacent to both sides of Banbury Road between the southern site access junction and the ring road;
- A toucan crossing on Banbury Road linking the site to Caversfield via the footway on the eastern side of the carriageway; and
- A toucan crossing on Lords Lane connecting to the cycle network into Bicester.

In terms of connections to the rest of the NW Bicester development, Figure 5.1 illustrates the proposed walking and cycling strategy within the site layout. There will be an off-road cycle route following the stream running north-south on the western side of the centre as well as an off road route southwards towards Lords Lane from the eastern side of the Local Centre.

Figure 5.1: Walking and Cycling Connections



5.3 Bus Services

The bus services providing access to the Local Centre have been agreed as part of the Exemplar development. A bus service of half hour frequency will be provided from the outset of the occupation of the residential development (subject to considerations of construction phasing), linking the Local Centre via Banbury Road to:

- Bicester North Station;
- Town centre/ bus station; and
- Bicester Town Station.

The proposed bus route to serve the Exemplar Site is shown as Bus Route 2 in the early development phase in **Figure 5.2**. It is proposed that the bus route is one way in an anti-clockwise direction, entering the site at the northern access from Banbury Road,

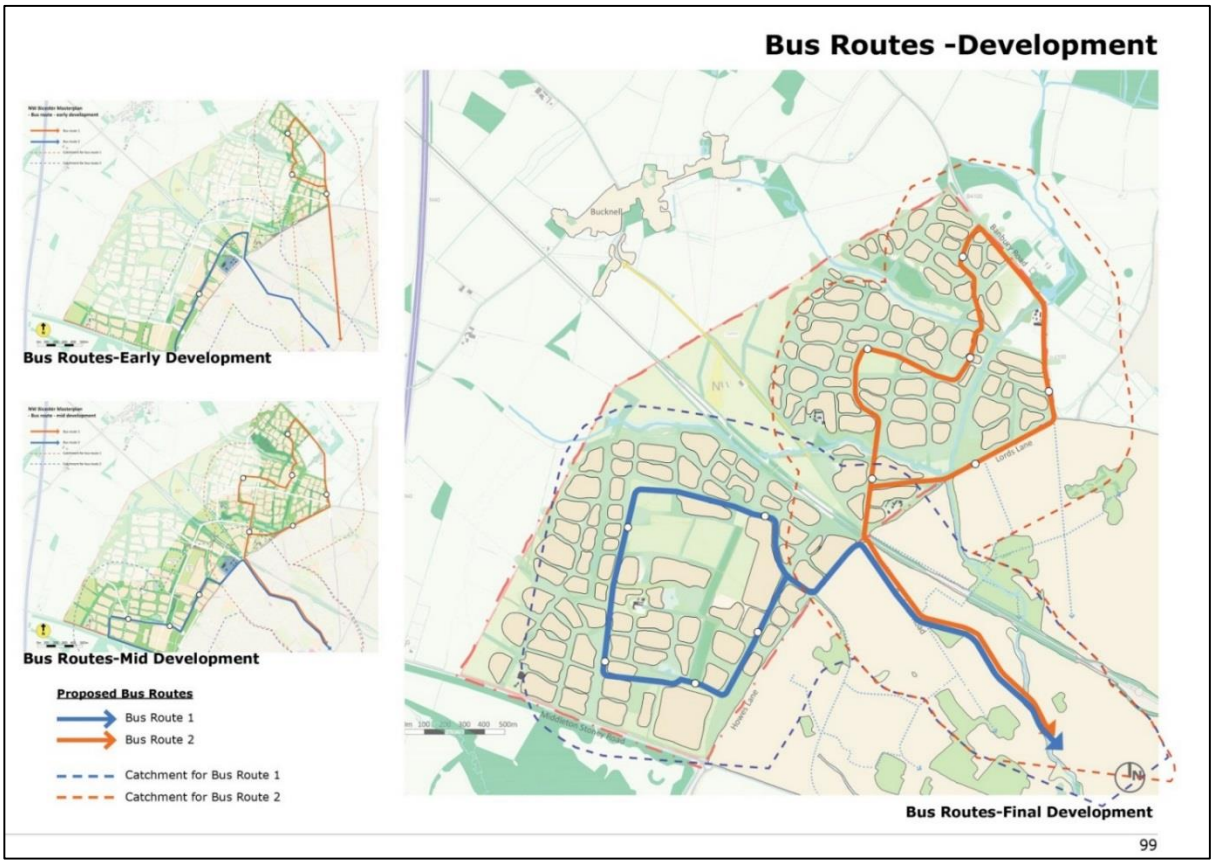
travelling through the spine route (including the bus only section) and the street through the Local Centre, then exiting via Charlotte Avenue to Banbury Road. A bus stop is proposed on the northern side of the street in the Local Centre.

The bus stop in the Local Centre will have a shelter and real time information. The proposed hours of operation are as follows:

- Monday to Friday 07:00 to 19:00 inclusive; and
- Saturday 08:00 to 18:00 inclusive.

As the 'Land North of the Railway' development builds out, the bus route will eventually connect through the development west of the Exemplar to Bucknell Road and Lords Lane. At this point in time the bus route in the vicinity of the Local Centre will re-route, with the bus stop in the village green area providing for services to the Local Centre, approximately 175 metres walk from the local centre. Services will become more frequent, increasing to 15 minutes and then 10 minutes (subject to viability).

Figure 5.2: Proposed Bus Route



5.4 Vehicular Access Strategy

The Local Centre is focused on a primary street which connects eastwards to a priority junction with the B4100 Banbury Road. The priority junction has been constructed as part of the residential development. As the adjacent development builds out, the primary street will continue south-westwards to connect to the Bucknell Road and realigned Lords Lane. There will also be a secondary connection southwards to Lords Lane at a new junction with Germander Way. It is proposed that in the longer term, as the adjacent

development of 2,600 homes builds out, the access junction to the B4100 Banbury Road will be upgraded to a traffic signalised junction.

The northern fields of the Exemplar development will be connected to the Local Centre via a bus only link – there will be no direct traffic link.

The street within the Local Centre will be similar to the category UAP4 street from the DMRB guidelines (TA79/99 Amendment No 1). UAP4 streets are described as "busy high street carrying predominately local traffic with frontage activity including loading and unloading". The speed limit is 30mph, there is access to houses, shops and businesses and there are frequent at grade crossings for pedestrians and kerbside bus stops. The capacity of such streets is identified as 750 vehicles in a peak hour for the busiest direction flow (1250 total flow). The proposed street fulfils each of these criteria although the speed is proposed to be limited to 20mph.

The service areas and parking for the development will have access from the primary street. The opportunity to improve the movement of service vehicles and parking arrangements for the southern area will however be considered as part of reserved matters applications for the 'Land North of the Railway'. This could involve a link from the adjacent land, but this is not part of this application.

5.5 Car Parking Provision

The approach to car parking requires a careful balance between meeting the needs of visitors, staff and businesses and not unduly encouraging car use. Whilst Eco Development good practice recommends a much reduced provision of parking over standard developments, it is recognised that the NW Bicester site is in a predominately rural County where car ownership levels are (often by necessity) high.

Parking provision for commercial and community uses recognises the large proportion of trips that will be on foot, cycle or by bus. Moreover, the mix of uses mean that there will be linked trips and sharing of the spaces across the different uses. **Table 5.2** shows the maximum provision in the Cherwell DC standards for each of the proposed uses, based on Gross Floor Area.

If each land use were to be treated on its own and there was no sharing of spaces, then the standards would allow a maximum of 223 spaces for the overall development (including the Eco business centre, which sits outside of the red line boundary).

Table 5.2: Parking Standards

Floor space	**Floor space/ Estimated Staff**	**CDC Maximum Standard**	**Maximum Provision**
Eco Business Centre	*1,800*	*1 space per 30 sq.m*	*60*
Children's Nursery	708 (+ 161 of garden), 25 staff	Not specified (used B1)	24
Commercial Units (A2/B1/D1)	614, 90 staff	1 space per 30 sq.m	21
Food Retail	503,15 staff	1 space per 14sq.m	36

Floor space	Floor space/ Estimated Staff	CDC Maximum Standard	Maximum Provision
Non- Food Retail	444, 9 staff	1 space per 20sq.m	22
Community Hall	523, 1 staff	1 space per 22 sq.m	24
Public House/ restaurant	543 internal, assume 75% public (664 total), 17 staff	1 space per 15 sq.m of public space	36
Total			**223**

It is proposed that a total of **83 parking spaces** are provided, shared across the uses as follows:

- 37 public parking spaces;
- 23 staff parking spaces; and
- 23 spaces for the Eco business centre.

It can be seen that the overall provision is well below the maximum standards in recognition that the majority of trips will be locally based with high usage of sustainable modes and many trips will be linked or take place at different times of the day. For example, parents dropping off or picking up at the nursery will be at different times than peak visitors to the public house/ restaurant.

The 12 hour total vehicle traffic generation associated with the site including internal trips (as calculated in Chapter 6) has been used to estimate the parking accumulation and maximum demand over a 12 hour period. This uses the profile of TRICS as obtained for the original Exemplar consent, providing an indication of what proportion of total traffic will take place in each hour. Table 5.3 shows the resulting accumulation with a maximum demand for 36 spaces between 12 noon and 1 p.m.

Table 5.3: Parking Accumulation

	Total Local Centre		
	Entering	Leaving	Accumulation
7-8am	11	7	4
8-9am	25	14	15
9-10am	17	10	22
10-11am	15	12	25
11-12am	23	19	29
12-1pm	33	26	36
1-2pm	28	31	34
2-3pm	23	28	29
3-4pm	31	32	28
4-5pm	27	31	24
5-6pm	33	34	22
6-7pm	30	31	21

It can be seen that using the forecast vehicle traffic generations, the provision of parking of 62 spaces (not including the Eco business centre) is more than adequate for the development, whilst also being lower than maximum standards. The vehicle forecasts are based on assumptions that a high proportion of trips will be by sustainable means. The analysis thus demonstrates that even if these levels of sustainable travel are not fully achieved, there is likely to be an adequate supply of parking.

Disabled Spaces

Five of the 83 spaces are proposed to be car parking spaces for disabled, blue badge holders. Of these spaces, one is proposed on street and four within the public and staff car parks. This is in line with standards which seek at least 5% of spaces to be provided for those with disabilities.

Electric Vehicle Charging Spaces

In order to support electric vehicle use, it is proposed to include electric charging points for 10% of spaces within the parking areas with charging facilities, with slow charging points in the staff parking areas and for the Eco Business Centre and fast charging points in the public car park.

5.6 Cycle Parking

The proposed uses will have cycle parking for staff and visitors provided over and above the Cherwell DC standards, which are shown in **Table 5.4**.

Table 5.4: Cycle Parking Standards – Cherwell DC

	Food Retail	**Non Food Retail**	**B1 -Offices**	**D2 Assembly and Leisure**	**A3 Restaurant/ pubs**
Long stay employee	1 stand per 12 staff *	1 stand per 6 staff *	1 stand per 150 sqm	1 stand per 12 staff **	1 stand per 12 staff **
Visitor	1 stand per 200sqm	1 stand per 200sqm	1 stand per 500 sqm	1 stand per 20 sqm	1 stand per 20 sqm of public space

The minimum requirements for each land-use is shown in **Table 5.5**. In total 30 staff spaces and 70 visitor spaces are required as a minimum. This includes the Eco Business Centre as although it is outside of the application the cycle stands are likely to be shared to an extent across the development.

Table 5.5: Cycle Parking Standards

Floor space	Floor space/ Estimated Staff	CDC Standard	Minimum Requirement: Staff	Minimum Requirement: Visitors
Eco Business Centre	1,800	1 stand per 150m^2 for staff, 1 stand per 500m^2 for visitors	12	4
Children's Nursery	708 (+ 161 of garden) 25 staff	No specific category – use A2, 1 stand per 12 staff, 1 stand per 100 m2 visitors	3	7
Commercial Units (A2/B1/D1)	614 90 staff	use A2, 1 stand per 12 staff, 1 stand per 100 m2 visitors	8	7
Food Retail	503 15 staff	1 stand per 12 staff, 1 stand per 200 m2 visitors	2	3
Non- Food Retail	444 9 staff	1 stand per 6 staff, 1 stand per 200 m2 visitors	2	3
Community Hall	523 1 staff	1 stand per 12 staff, 1 stand per 20 m2 visitors	1	26
Public House/ restaurant	543 internal, assume 75% public (664 total) 17 staff	1 stand per 12 staff, 1 stand per 20 m2 of public space visitors	2	20
Total			**30**	**70**

A total of 46 staff and 74 public stands are proposed, as shown on the submitted drawings and landscape masterplan. The provision is above the minimum standards with a total of 120 provided compared to the standard of 100.

Stands will be of 'Sheffield' type and will be located in well lit, accessible locations. Storage for staff will be provided in covered secure shelters close to building entrances and some of these facilities will use two tier stands to maximise provision. Cycle stands will also be provided adjacent to the bus stop to encourage people to cycle and then transfer to bus.

5.7 Accessibility

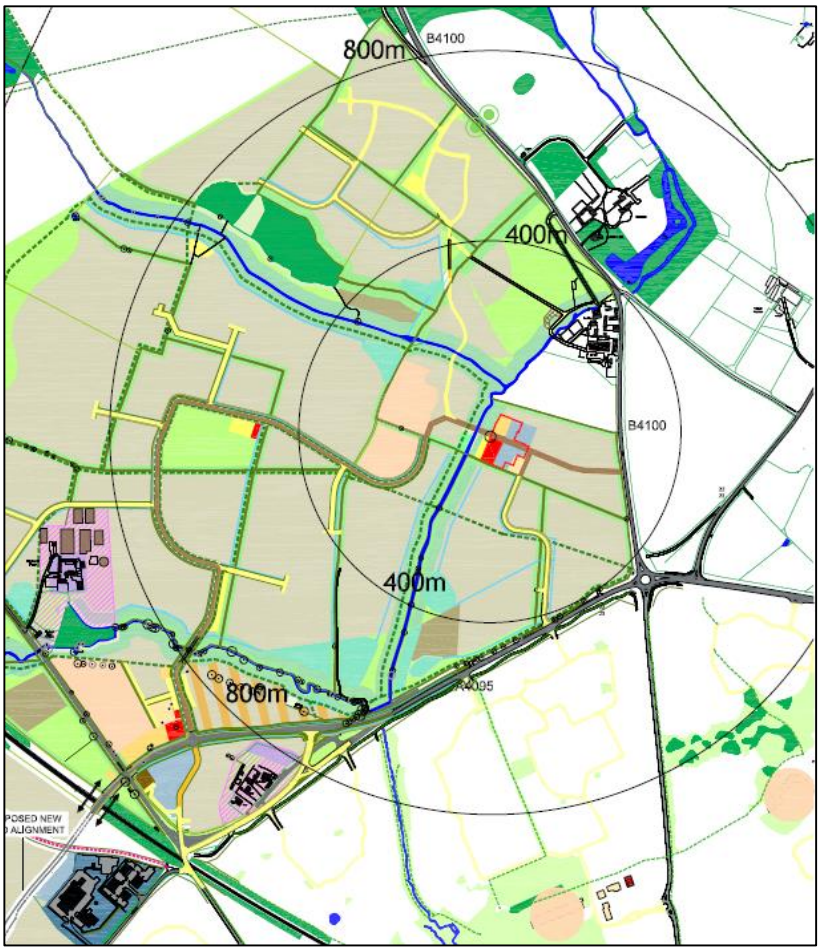
The local centre will provide a range of local retail, food and drink, business and community uses which will serve the surrounding developments. These comprise the 393 home Exemplar development and the eastern parts of the 2,600 home 'Land North of Railway' development, which was given a resolution to grant in March 2015. As such the development presents an opportunity to encourage a high level of containment of trips within the area and it would be anticipated that the majority of the trips to the development will be from the surrounding homes.

The proposed local centre is located in the approximate geographical centre of the proposed Exemplar Site development in order to ensure it is highly accessible by foot and cycle from all areas of the site. It is also adjoined to the south by the proposed 'Land to the North of the Railway' development. This means that a large number of homes will be within a 400 metres walk of the local centre with the potential for a high share of journeys to be made on foot or cycle.

Figure 5.3 illustrates the 400m and 800m walking distances from the Local Centre in the context of the overall NW Bicester development. This represents a 5 minute or 10 minute

walk. Approximately 850 homes will be within a 5 minute walk once the development is fully built out and 2300 will be within 10 minutes, giving a very high level of accessibility.

Figure 5.3: NW Bicester Development within 400m and 800m Walking Distance



5.8 Modal Share and Land Use Containment

To ensure that sustainable travel is maximised, there will be a high standard of provision for sustainable travel and initiatives to promote and encourage sustainable mode use.

The original outline consent for the Exemplar Local Centre was based on assumptions for the Exemplar site in advance of the rest of the 6,000 home Masterplan coming forward. The transport workstream of the Masterplan has since developed the assumptions for the overall development and these have achieved planning consent for the adjacent 'Land North of the Railway', recognising that NW Bicester is an eco-development whereby the whole range of services and facilities together with jobs will be developed in close proximity to homes. The Exemplar Local Centre can now be seen in the wider context whereby containment and modal share opportunities will match those of the overall NW Bicester development.

The Application 1 – Land North of the Railway Transport Assessment sets out the agreed target for containment of trips for NW Bicester. This is summarised in Table 5.6.

Table 5.6: Target Modal Share and Containment

Containment	At least 35% of trips to be within NW Bicester and 60% to be within Bicester as a whole (i.e. 40% or less travelling outside of Bicester).

Mode Share	No more than 50% of trips by car modes

Table 5.7 sets out the agreed target modal share for trips within NW Bicester (under 1km), within Bicester (1-3km) and outside of Bicester (more than 3km). This is based on setting targets for reduction in car use against the baseline for each of the different distances with the aim of achieving an overall modal share of no more than 50% by car.

Table 5.7: Target Mode Share

	2031 PPS Target All trips		2031 Internal Trips		2031 External Trips within Bicester		2031 External Trips Outside of Bicester	
	% by mode	Total Car/ Non Car	% by mode	Total Car/ Non Car	% by mode	Total Car/ Non Car	% by mode	Total Car/ Non Car
Car driver	**40.00%**	**50.00%**	**7.00%**	**14.00 %**	**35.00%**	**52.00 %**	**57.00%**	**77.00 %**
Car passenger	10.00%		7.00%		17.00%		20.00%	
Bus passenger	10.00%	50.00%	1.00%	86.00 %	5.00%	48.00 %	11.00%	23.00 %
Bicycle	10.00%		10.00%		10.00%		7.00%	
Walk	30.00%		75.00%		33.00%		5.00%	
Total	100%	100%	100%	100%	100%	100%	100%	100%

The assumptions regarding mode share and containment have been applied to the land uses proposed in the Exemplar Local Centre. The calculation of mode share and containment arising from the land uses is discussed in the trip generation section.

5.9 Promoting Sustainable Travel and Vehicle Choices

A comprehensive range of measures are proposed for the Development which are contained within the accompanying Travel Plan. In particular, with regards to car sharing, the travel plan co-ordinator will promote car sharing amongst employees travelling to the site for work. The co-ordinator will direct people towards existing car sharing websites, such as 'Oxfordshire car share' https://oxfordshire.liftshare.com/. Whilst this would not help achieve the PPS1 target of 50% by non-car modes, it has significant benefits in reducing traffic and parking demand as well as travel costs. Each non-residential use travel plan will include for the promotion of car sharing for employees, including the provision of car sharing spaces and a guaranteed lift home scheme.

5.10 Construction Traffic

The construction phase of development for the purposes of this assessment is anticipated to commence in 2016 and build out over approximately a- 2 year period.

As a large proportion of the construction traffic is anticipated to be heavy goods vehicles it is essential that the residential areas of the Exemplar development are avoided during the course of construction by heavy goods vehicle drivers associated with the proposals. It is therefore proposed that a construction haul road will be provided through the land to the south of the development (forming part of the 'Land to the North of the Railway' development, with a connection to Lords Lane.

It is considered appropriate to have a lorry routeing agreement to ensure drivers use the peripheral road/A4095 and will be prohibited from passing through the centre of Bicester unless they are transporting locally sourced materials/goods.

5.11 Summary

The proposed development comprises a Local Centre with a mix of land uses together with the physical and service infrastructure to enable a high proportion of trips to be made by walking, cycling and public transport.

6 Trip and Traffic Generation

6.1 Introduction

This chapter details the trip generation methodology that has been applied in order to forecast the volume of trips by all modes as well as vehicular traffic to be generated by the proposed development.

The methodology used for the 2,600 home 'Land North of the Railway' development (as resolved to grant subject to S106 and conditions in March 2015) has been applied to the quantum of development for the Exemplar Local Centre (shown in Table 5.1). The trip rates for public houses have been taken from the Exemplar Development Transport Assessment (2011) as these were not required for the 'Land North of the Railway' transport assessment.

6.2 Trip Rates

The TRICS database (v6.11.2) has been used as the basis for trip rates. The database allows the user to customise a number of parameters to only include surveys which correspond as far as possible with conditions at the proposed development. It should be noted that:

- Multi-modal surveys have been used;
- The trip rates in this note refer to **total person trip rates** (i.e. the **total** trips that would be generated by each land use including those generated by car, public transport, walking, cycling etc.); and
- The trip rates derived are for the AM peak (08:00-09:00), PM peak (17:00-18:00) and 12 hour (07:00-19:00) assessment periods which will be considered in the assessment.

The parameters used when developing the trip rates are shown in each of the TRICS extracts provided in Appendix 6.1. It was agreed with OCC for the 'Land North of the Railway' that 'mean' average total person trips from the development would be used for non-residential land uses.

6.2.1 Mean Average Trip Rates

Tables 6.1-6.3 show the 'Mean' Average multi modal total person trips rates for all land uses in the development.

Table 6.1: Summary of AM Peak Hour 'Mean' Average Multi Modal People Trip Rates

Land Use	Unit	Mean Arrivals	Mean Departures	Total
Children's Nursery	Per pupil	0.416	0.227	0.643
B1 Office	Per 100 sq.m GFA	2.084	0.308	2.392
Local Shops	Per 100 sq.m GFA	11.432	10.587	22.019

Land Use	Unit	Mean Arrivals	Mean Departures	Total
Community Hall	Per 100 sq.m GFA	1.068	0.519	1.587
Public House	Per 100 sq.m GFA	0.000	0.000	0.000

Table 6.2: Summary of PM Peak Hour 'Mean' Average Multi Modal People Trip Rates

Land Use	Unit	Mean Arrivals	Mean Departures	Total
Children's Nursery	Per pupil	0.180	0.314	0.494
B1 Office	Per 100 sq.m GFA	0.292	2.094	2.386
Local Shops	Per 100 sq.m GFA	9.863	10.042	19.905
Community Hall	Per 100 sq.m GFA	1.802	0.950	2.752
Public House	Per 100 sq.m GFA	10.835	7.017	17.852

Table 6.3: Summary of 12-hour 'Mean' Average Multi Modal People Trip Rates

Land Use	Unit	Mean Arrivals	Mean Departures	Total
Children's Nursery	Per pupil	1.801	1.796	3.597
B1 Office	Per 100 sq.m GFA	8.818	8.729	17.547
Local Shops	Per 100 sq.m GFA	113.601	112.206	225.807
Community Hall	Per 100 sq.m GFA	19.932	16.325	36.257
Public House	Per 100 sq.m GFA	64.409	50.227	114.636

6.3 Trip Generation Methodology

The following methodology has been applied in line with the TA for the 'Land North of the Railway'.

6.3.1 Employment

The site will include B1 employment uses. The mixed use class floor space of A2/ B1/ D1 has all been assumed to be B1 as this represents a worst case in traffic terms. The following methodology has been used to calculate the number of trips:

- Person trip rates were used as in Tables 6.1-6.3;
- The number of internal and external trips has been estimated from assumptions regarding containment of trips (Table 6.4); and
- The 2031 target mode split for external trips within and outside Bicester has been applied to the respective number of person trips by each mode.

6.3.2 Community and Retail

The following methodology has been used to calculate the number of trips generated by community and retail uses:

- Person trip rates have been obtained from the TRICS database (as in Tables 6.1-6.3);
- The number of internal and external trips has been estimated from assumptions regarding containment of trips (Table 6.4);
- An estimate of the proportion of trips which are linked to other land uses has been made and the trip generation has been reduced accordingly (Table 6.4); and
- The 2031 target mode split for external trips within and outside Bicester has been applied to the respective number of person trips by each mode.

6.3.3 Containment and Linked Trips

As set out in Section 5.2 the target level of containment is for at least 35% of trips to be within NW Bicester and 60% to be within Bicester as a whole (i.e. 40% or less travelling outside of Bicester). The individual assumptions in relation to containment for the various land uses are included in Table 6.4.

Table 6.4: Containment and Linked Trip Assumptions for Non-Residential Trips

Land Use	Internal Trips within NWB (%)	Total Trips within Bicester (including internal to NWB) (%)	Percentage Linked Trips (%)
Employment	10	30	-
Retail & Leisure	60	70	30
Community	60	70	30

6.4 Target Mode Share

The target mode share which has been applied was discussed in Chapter 5. Table 6.5 sets out the target modal share for 2031 which has been applied to the trips by all modes to derive vehicle trips.

Table 6.5: Target Mode Share

	2031 PPS Target All Trips		2031 Internal Trips		2031 External Trips Within Bicester		2031 External Trips Outside of Bicester	
	% by mode	Total Car/ Non Car	% by mode	Total Car/ Non Car	% by mode	Total Car/ Non Car	% by mode	Total Car/ Non Car
Car driver	40%	50%	7%	14%	35%	52%	57%	77%
Car passenger	10%		7%		17%		20%	
Bus passenger	10%	50%	1%	86%	5%	48%	11%	23%
Bicycle	10%		10%		10%		7%	
Walk	30%		75%		33%		5%	
Total	100%		100%		100%		100%	

6.5 Trip Generation

The methodology set out above has been used to calculate the multi-modal trips for the Exemplar Local Centre. The internal trips are shown but only the external trips have been included in the resultant traffic generation as the internal trips within the development are already accounted for in the transport assessments for the Exemplar development (housing elements) and the 'Land North of the Railway' (both of which have consent).

6.5.1 Internal Trips

Table 6.6 shows the number of internal trips by each mode that is anticipated to be generated by the development. In this respect internal is defined as within 1km of the Local Centre, and thus will be from the surrounding residential developments.

The internal trips are not anticipated to impact on the highway network external to the development, only on the local area.

It should be noted that these internal trips have already been accounted for in the transport assessments for the Exemplar housing and the adjacent 'Land North of the Railway' development, as trips by residents to local shops and services. These are therefore not new trips generated as part of the Local Centre proposal.

Table 6.6: Internal Trips by Mode

Mode	AM peak (08:00 to 09:00)			PM Peak (17:00 to 18:00)			12 Hour (07:00 to 19:00)		
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
Car driver	6	5	11	7	7	14	67	62	129
Car passenger	6	5	11	7	7	14	67	62	129
Bus passenger	1	1	2	1	1	2	10	9	18
Bicycle	9	7	16	10	10	20	96	89	185
Walk	68	52	119	77	74	151	717	668	1385
Total	**90**	**69**	**159**	**102**	**99**	**201**	**956**	**890**	**1846**
Mode Share (% Car)			14%			14%			14%

6.5.2 External Trips within Bicester

Table 6.7 sets out the number trips by mode that are anticipated to be external to the NW Bicester development but remain within Bicester.

Table 6.7: External Trips within Bicester

Mode	AM peak (08:00 to 09:00)			PM Peak (17:00 to 18:00)			12 Hour (07:00 to 19:00)		
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
Car driver	11	8	19	13	12	25	121	112	233
Car passenger	5	4	9	6	6	12	59	55	113
Bus passenger	2	1	3	2	2	4	17	16	33
Bicycle	3	2	5	4	4	7	34	32	67
Walk	10	8	18	12	12	24	114	106	220
Total	30	24	54	37	35	72	345	321	666
Mode Share (% Car)			52%			52%			52%

6.5.3 External Trips outside of Bicester

Table 6.8 sets out the number trips by mode that are anticipated to involve origins or destinations outside of Bicester.

Table 6.8: External Trips outside of Bicester

Mode	AM peak (08:00 to 09:00)			PM Peak (17:00 to 18:00)			12 Hour (07:00 to 19:00)		
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
Car driver	5	1	6	1	5	6	22	21	43
Car passenger	2	0	2	0	2	2	8	8	15
Bus passenger	1	0	1	0	1	1	4	4	8
Bicycle	1	0	1	0	1	1	3	3	5
Walk	0	0	1	0	0	1	2	2	4
Total	9	1	10	1	9	10	38	38	75
Mode Share (% Car)			77%			77%			77%

6.5.4 Containment of Trips

Table 6.9 shows how total trips are contained internally within NW Bicester (not on external network), within Bicester and outside of Bicester. It can be seen that the majority of trips (71%) are anticipated to be within NW Bicester, given the local function of the centre, and only a small percentage of total trips will be to and from areas outside of Bicester (3-5% of trips).

Table 6.9: Containment of Trips

	AM peak (08:00 to 09:00)			PM Peak (17:00 to 18:00)			12 Hour (07:00 to 19:00)		
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
CONTAINMENT									
Within NWB	90	69	159	102	99	201	956	890	1846
Within Bicester	30	24	54	37	35	72	345	321	666
Outside of Bicester	9	1	10	1	9	10	38	38	75
Total	129	94	223	140	143	283	1338	1249	2587
Within NWB			71%			71%			71%
Within Bicester			24%			25%			26%
Total Containment			95%			96%			97%

6.5.5 Total Trips by All Modes

The total trips by all modes generated by the Local Centre are set out in Table 6.10, including internal trips. It can be seen that the overall mode share by car forecast using this methodology is 26% in the 12 hour period, i.e. well below the overall target to be aimed at of 50%. This is because the Local Centre comprises uses to serve the adjacent residential developments and is therefore expected to be predominately non-car based.

Table 6.10: Exemplar Local Centre Total Trip Generation by Mode

Mode	AM peak (08:00 to 09:00)			PM Peak (17:00 to 18:00)			12 Hour (07:00 to 19:00)		
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
Car driver	22	14	36	21	24	45	209	196	405
Car passenger	13	9	22	14	15	28	133	124	257
Bus passenger	3	2	5	3	4	7	31	29	60
Bicycle	13	9	22	14	14	28	133	124	256
Walk	78	60	138	89	86	175	833	776	1608
Total	129	94	223	140	143	283	1338	1249	2587
Mode Share (% Car)			26%			26%			26%

6.5.6 Total Vehicle Trips

Table 6.11 outlines the total vehicle trips generated by the Exemplar Local Centre development. As noted above, the internal trips are already accounted for in the Transport Assessments for the Exemplar housing and 'Land North of the Railway' development and are thus separated from the assessment of traffic generation impacts.

The analysis leads to a forecast of 36 vehicle trips associated with the development in the AM peak hour and 45 in the PM peak hour.

Table 6.11: Total Vehicle Trips

	AM peak (08:00 to 09:00)			PM Peak (17:00 to 18:00)			12 Hour (07:00 to 19:00)		
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
Internal	6	5	11	7	7	14	67	62	129
External in Bicester	11	8	19	13	12	25	121	112	233
External outside Bicester	5	1	6	1	5	6	22	21	43
TOTAL	**22**	**14**	**36**	**21**	**24**	**45**	**209**	**196**	**405**
Total External Network Vehicles	**16**	**9**	**25**	**14**	**18**	**31**	**142**	**134**	**276**

6.6 Summary

The trip rates used for the traffic generation of the Development are the same as those for the wider NW Bicester development. The Local Centre is anticipated to serve a predominately local function, with the majority of trips being internal to the development and by sustainable, non-car modes.

7 Traffic Impact

7.1 Introduction

The previous chapter provided an assessment of trip and traffic generation from the proposed development.

This chapter considers the impact of traffic on the road network following the completion of the proposed development. This is undertaken with consideration of the level of traffic generation that has already been subject to detailed strategic and local traffic modelling and achieved consent. It includes discussion as to forecast traffic on the primary street and its' capacity.

7.2 Consented Traffic Generation

The Transport Assessment for the consented Exemplar Development (Local Centre and the 393 dwellings) presented the traffic generation for the total development in Table 8.8, for 2026. This traffic generation is shown in Table 7.1. The residential, primary school and Eco Business Centre uses have been or are currently the subject of separate planning applications to the Local Centre. The traffic generation forecasts from those land uses have been removed from the total to identify the forecast traffic anticipated for the Local Centre. It should be noted that the trips for all B1 business have been removed as they are grouped in the Exemplar TA (both the Eco Business Centre and B1 office). The consented traffic generation is therefore actually higher than shown in the Table, and a conservative case has been used.

Table 7.1: Exemplar Development Consented Traffic Generation

	Morn Peak (8-9am)			Evening Peak (5-6pm)		
Land Use(s)	**Arr**	**Dep**	**Tot**	**Arr**	**Dep**	**Tot**
Residential - Privately Owned	*19*	*69*	***88***	*50*	*29*	***79***
Residential - Affordable Housing	*7*	*25*	***32***	*18*	*10*	***28***
Primary School	*19*	*4*	***23***	*0*	*1*	***1***
Children's Nursery	5	2	**7**	2	5	**7**
Eco Business Centre	*57*	*4*	***61***	*5*	*47*	***52***
Local Shops	29	27	**56**	18	19	**37**
Eco Pub	0	0	**0**	5	3	**8**
Community Centre	1	1	**2**	2	1	**3**
Total	**137**	**132**	**269**	**100**	**115**	**215**
Local Centre Total	**35**	**30**	**65**	**27**	**28**	**55**

7.3 Comparison of Proposed to Consented Development

The traffic generation for the proposed Local Centre is compared in Table 7.2 to the consented development. Only the external network vehicles generation has been used as the internal traffic is already accounted for as trips associated with the residential elements of the development.

It can be seen that the forecasts for the proposed Local Centre are lower than those related to the consent. This is because the Exemplar Local Centre can now be assessed

in the context of being part of the whole NW Bicester development north of the railway, rather than a standalone development as it was for the original application.

Table 7.2: Comparison of Proposed to Consented Development Traffic Generation

	AM peak (08:00 to 09:00)			PM Peak (17:00 to 18:00)		
	IN	**OUT**	**TOTAL**	**IN**	**OUT**	**TOTAL**
Proposed Local Centre Vehicle Generation	16	9	25	14	18	31
Consented Local Centre Vehicle Generation	35	30	65	27	28	55
Difference	**-19**	**-21**	**-40**	**-13**	**-10**	**-24**

7.4 Traffic Impact

On the basis of the above analysis, no further traffic impact assessment has been undertaken. The existing consents for development on the site included for a higher level of traffic generation than now forecast. The consented traffic impact has already been assessed and accommodated in the constructed road network and junctions and mitigation. Thus there is considered to be no requirement for further traffic impact assessment of the proposed Local Centre.

7.5 Link Capacity

The traffic assessment of the NW Bicester Masterplan (full 6,000 homes, including the Exemplar development) gives forecast link flows on the section of street within the Local Centre for the scenario of full NW Bicester development. The peak hour forecasts are as below:

- AM peak hour = 681 vehicles (busiest flow = 489)
- PM peak hour = 679 vehicles (busiest flow = 451)

These flows would be within the capacity of a 6.1m wide category UAP4 street from the DMRB guidelines (TA79/99 Amendment No 1), which is 750 for the busiest direction flow, as described in Chapter 5. As such, the proposed street design is considered appropriate for the level of traffic, as even with the reduced speed limit of 20mph compared to the 30pmh for a UAP4 street, there is anticipated to be sufficient capacity.

8 Summary and Conclusions

8.1 Overview

This Transport Assessment has been prepared to support the planning application submitted for the Exemplar Local Centre.

The assessment has considered the current situation with regards to sustainable travel modes, the highway network, traffic conditions and road safety in the vicinity of the application site.

8.2 The Proposed Development

The proposed development provides a Local Centre comprising retail, commercial, pub/ restaurant and community uses centred on the main street. There is adequate provision for car parking and servicing, whilst encouraging sustainable travel by placing the majority of the parking to the rear of the development and putting the bus stop and cycling facilities in the most prominent locations. As such the development in itself provides the opportunity for a high level of locally based trips by walking or cycling and a large number of homes will be within a reasonable walking distance of the local centre.

The Development layout includes good connections for walking and cycling within the site and from the site as well as a frequent bus service between the Development and the town centre/ rail station(s). The Development will therefore benefit from a high level of connectivity to the wider NW Bicester development as well as the rest of the town.

A high level of sustainable travel use is anticipated as the Local Centre will predominately serve the adjacent residential areas.

The mix of land uses and provision for sustainable modes, together with travel plan measures to encourage 'smarter choices' will enable the targets for mode share and travel set out in the Supplement to PPS1 to be achieved.

8.3 Traffic Impact

The forecast trip and traffic generation has been based on the methodology used for the NW Bicester development, recognising that the Local Centre forms an integral part of proposals for the Master plan on the north side of the railway.

The traffic generation has been compared to that forecast in the consented Exemplar development for the Local Centre. On the basis of the analysis no further traffic impact assessment has been undertaken. The existing consents for development on the site included for a higher level of traffic generation than now forecast. The consented traffic impact has already been assessed and accommodated in the constructed road network and junctions and mitigation. Thus there is considered to be no requirement for further traffic impact assessment of the proposed Local Centre.

8.4 Link Capacity

The traffic assessment of the NW Bicester Masterplan (full 6,000 homes, including the Exemplar development) gives forecast link flows on the section of street within the Local Centre for the scenario of full NW Bicester development. The peak hour forecasts are as below:

- AM peak hour = 681 vehicles (busiest flow = 489)
- PM peak hour = 679 vehicles (busiest flow = 451)

These flows would be within the capacity of a 6.1m wide category UAP4 street from the DMRB guidelines (TA79/99 Amendment No 1), which is 750 for the busiest direction flow, as described in Chapter 5. As such, the proposed street design is considered appropriate for the level of traffic, as even with the reduced speed limit of 20mph compared to the 30pmh for a UAP4 street, there is anticipated to be sufficient capacity.

8.5 Conclusion

The proposed land uses together with the provision of high quality sustainable travel infrastructure, and travel planning measures already agreed for the Exemplar development, will ensure that the PPS1 targets are met. It is concluded that there are no transport reasons why the development should not be granted consent.